

01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

026 BOARD OF PESTICIDES CONTROL

Chapter 20: SPECIAL PROVISIONS

SUMMARY: These provisions regulate the use, storage and disposal of pesticides with specific emphasis on registered pesticides, right of way and aquatic applications and employer/employee requirements.

Section 1. Registered Pesticides

A. Definitions

“Perfluoroalkyl and Polyfluoroalkyl Substances” or “PFAS” means substances that include any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

- B.** The use of any pesticide not registered by the Maine Board of Pesticides Control in accordance with Title 7 M.R.S.A. §601 is prohibited except as otherwise provided in this chapter or by FIFRA, Section 2(ee).
- C.** The use of registered pesticides for other than registered uses, or at greater than registered dosages, or at more frequent than registered intervals is prohibited, provided that application or use of unregistered pesticides and unregistered applications or uses of registered pesticides may be made for experimental purposes if in accordance with requirements of the Maine Board of Pesticides Control, and the U.S. Environmental Protection Agency.
- D.** Retailers and end users of pesticides no longer registered in Maine may continue to sell and use those items provided they were properly registered when obtained and such distribution and use is not prohibited by FIFRA or other Federal law.
- E.** In conducting review of registration or re-registration pursuant to 7 M.R.S.A. §607-A, the Board may consider the potential for environmental damage by the pesticide through direct application on or off-target or by reason of drift. If the Board finds that the use of the pesticide is anticipated to result in significant adverse impacts on the environment, whether on or off-target, which cannot be avoided or adequately mitigated, registration or re-registration will not be granted unless the Board finds that anticipated benefits of registration clearly outweigh the risks. In any case where the Board may request data in connection with registration or re-registration of any pesticide, such data may include that concerning pesticide residues, propensity for drift and testing therefor. Such data, if requested, shall provide information regarding residues and residue effects on plant tissues, soil and water and other potential deposition sites, and shall take into consideration differences in plants, soils, climatic conditions at the time of application and application techniques.

- F. In conducting review of registration or reregistration pursuant to 7 M.R.S.A §607-A, the Board shall require submission of the confidential statement of formula as defined in 7 M.R.S.A. §607 (5-A) and the following affidavits:
1. a completed and signed form provided by the Board at the time of application for product registration review or reregistration which attests that the pesticide has or has never been stored, distributed, or packaged in a fluorinated container; and
 2. a completed and signed form provided by the Board at the time of application for product registration review or reregistration which attests that the pesticide formulation does or does not contain perfluoroalkyl or polyfluoroalkyl substances as defined by the Board for this purpose of this section.

Section 2. Right-of-Way

Deciduous growth over six feet in height and evergreen growth over three feet in height shall not be sprayed with a herbicide within the right-of-way of any public way except that deciduous growth which has been cut to the ground and which has grown more than six feet during the growing season following the cutting, may be sprayed that following season. In addition, chemical pruning of single limbs of trees over the prescribed heights may be performed.

Section 3. Pesticide Storage and Disposal

- A. Unused pesticides, whether in sealed or open containers, must be kept in a secure enclosure and otherwise maintained so as to prevent unauthorized use, mishandling or loss; and so as to prevent contamination of the environment and risk to public health.
- B. Obsolete, expired, illegal, physically or chemically altered or unusable pesticides, except household pesticide products, shall be either:
1. stored in a secure, safe place under conditions that will prevent deterioration of containers or any contamination of the environment or risk to public health, or
 2. returned to the manufacturer or formulator for recycling, destruction, or disposal as appropriate, or
 3. disposed of in a licensed hazardous waste facility or other approved disposal site that meets or exceeds all current requirements of the Maine Department of Environmental Protection and the U.S. Environmental Protection Agency for facilities receiving such waste.

Section 4. Aquatic Applications

No person, firm, corporation or other legal entity shall, for the purpose of controlling aquatic pests, apply any pesticide to or in any waters of the state as defined in 38 M.R.S.A. §361-A(7) without approval of the Maine Department of Environmental Protection.

Section 5. Employer/Employee Requirements

- A. Any person applying pesticide shall instruct their employees and those working under their direction about the hazards involved in the handling of pesticides to be employed as set forth on the pesticide label and shall instruct such persons as to the proper steps to be taken to avoid such hazards.
- B. Any person applying pesticides shall provide and maintain, for the protection of their employees and persons working under their direction, the necessary safety equipment as set forth on the label of the pesticide to be used.

Section 6. Authorization for Pesticide Applications

- A. Authorization to apply pesticides to private property is not required when a pesticide application is made by or on behalf of the holder of an easement or right of way, for the purposes of establishing or maintaining such easement or right of way.
- B. When the Maine Center for Disease Control and Prevention (CDC) has identified that an organism is a vector of human disease and the vector and disease are present in an area, a government entity shall obtain authorization for ground-based applications by:
 - 1. Sending a written notice to the person(s) owning property or using residential rental, commercial or institutional buildings within the intended target site at least three days but not more than 60 days before the commencement of the intended spray applications. For absentee property owners who are difficult to locate, mailing of the notice to the address listed in the Town tax record shall be considered sufficient notice; and
 - 2. Implementing an “opt out” option whereby residents and property owners may request that their property be excluded from the application by submitting written notice to the government entity at least 24 hours before spraying is scheduled to commence. Authorization is considered given for any property for which written notice was submitted and no “opt out” request was received by the sponsoring government entity.
- C. When the Maine Center for Disease Control and Prevention (CDC) recommends control of disease vectors, government entities are not required to receive prior authorization to apply pesticides to private property, provided that the government entity sponsoring the vector control program:
 - 1. Provides advance notice to residents about vector control programs using multiple forms of publicity which may include, but is not limited to, signs, newspaper, television or radio notices, direct mailings, electronic communication or other effective methods; and
 - 2. Implements an “opt out” option whereby residents and property owners may request that their property be excluded from any ground based control program and the government entity makes a reasonable effort to honor such requests; and

3. If aerial applications are made, takes affirmative steps, to the extent feasible, to avoid applications to exclusion areas as identified by Board policy.
- D. **General Provisions.** For any pesticide application not described in Chapter 20.6(A),(B) or (C), the following provision apply:
1. No person may contract with, or otherwise engage, a pesticide applicator to make any pesticide application to property unless that person is the owner, manager, or legal occupant of the property to which the pesticide is to be applied, or that person has the authorization of the owner, manager or legal occupant to enter into an agreement for pesticide applications to be made to that property. The term “legal occupant” includes tenants of rented property.
 2. No person may apply a pesticide to a property of another unless prior authorization for the pesticide application has been obtained from the owner, manager or legal occupant of that property. The term “legal occupant” includes tenants of rented property.
 3. No commercial applicator may perform ongoing, periodic non-agricultural pesticide applications to a property unless:
 - i. there is a signed, written agreement with the property owner, manager or legal occupant that explicitly states that such pesticide applications shall continue until a termination date specified in the agreement, unless sooner terminated by the applicator or property owner, manager or legal occupant; or
 - ii. the commercial applicator utilizes another system of verifiable authorization approved by the Board that provides substantially equivalent assurance that the customer is aware of the services to be provided and the terms of the agreement.

Section 7. Positive Identification of Proper Treatment Site

- A. Commercial applicators making outdoor treatments to residential properties must implement a system, based on Board approved methods, to positively identify the property of their customers. ~~The Board shall adopt a policy listing approved methods of positive identification of the proper treatment site.~~ After December 31, 2023, the master applicator responsible for the supervision of certified and noncertified applicators at each branch location must ensure that all applicators under their supervision are trained, annually, on positive identification of proper treatment sites. This master applicator must maintain records of the method of positive identification of proper treatment sites as adopted by the branch location. Appropriate positive identification methods that must be employed include at least one of the following:
1. Obtain the customer’s electric meter number in advance of the treatment, list it on the work order or invoice, and require the applicator to check for that number before initiating the treatment.

2. Visit the customer in advance of the treatment, and using a global positioning system (GPS), identify the coordinates of each property to be treated. Include the coordinates on the work order or invoice, equip the applicator with a GPS unit, and require that employee to check for those coordinates before initiating any treatment.
3. Visit the customer in advance of the treatment and take a digital time/date stamped photo of the home and any distinctive features of the property. Include the photo on the work order or invoice and require the applicator to carefully check the photo before initiating any treatment.
4. Visit the customer in advance of the treatment and attach a company logo or other unique identifying tag on the property. Include the location of the logo/tag on the work order or invoice and require the applicator to carefully check for its presence before initiating any treatment.
5. Any methods that were submitted in writing to the Board prior to March 1, 2024. Any methods submitted after this date may be subject to approval by staff.

B. Violations of Chapter 20, Section 7 is grounds for the suspension of certification or licensure under 22 M.R.S.A §1471-D(7).

1. For a first violation the applicators license/certification may be suspended;
2. For a second violation whthin a 5-year period the applicator's and master's licensure/certification may be suspended; and
3. For a third violation within a five year period the applicator's, master's, and firm's licensure/certification may be suspended.

Penalties may also be imposed pursuant to 7 M.R.S.A. § 616-A (2) for violations of Chapter 20, Section 7 in addition to any suspensions imposed under Chapter 20, Section 7 (B)(1), (2) or (3). Nothing in this subsection may be construed as prohibiting the Board from seeking license or certification revocation pursuant to 22 M.R.S.A. §§ 1471-D(6) and 1471-J where the Board determines revocation is warranted under the circumstances.

STATUTORY AUTHORITY:

Title 22 M.R.S.A., Chapter 258-A

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December 12, 2012 – emergency filing expires, chapter reverts to January 1, 2008 version
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01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

026 BOARD OF PESTICIDES CONTROL

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

SUMMARY: These regulations describe the requirements for certification and licensing of commercial applicators.

1. Individual Certification and Company/Agency Licensing Requirements

- A. Any commercial applicator must be either:
 - I. licensed as a commercial applicator/master; or
 - II. licensed as a commercial applicator/operator; or
 - III. supervised on-site by either a licensed commercial applicator/master or a commercial applicator/operator who is physically present on the property of the client the entire time it takes to complete an application conducted by an unlicensed applicator. This supervision must include visual and voice contact. Visual contact must be continuous except when topography obstructs visual observation for less than five minutes. Video contact does not constitute visual observation. The voice contact requirement may be satisfied by real time radio or telephone contact. In lawn care and other situations where both the licensed and unlicensed applicator are operating off the same application equipment, the licensed applicator may move to an adjoining property on the same side of the street and start another application so long as he or she is able to maintain continuous visual and voice contact with the unlicensed applicator.
- B. All commercial applicators responsible for the supervision of noncertified applicators of restricted use pesticides must ensure compliance with training, record keeping, and all other requirements as indicated in 40 CFR 171.201(c) "Supervision of Noncertified Applicators" (2017).
- C. All commercial applicator licenses shall be affiliated with a company/agency and shall terminate when the employee leaves the employment of that company or agency.
- D. Individuals certified as commercial applicators are eligible to license with one or more companies/agencies upon submission of the application and fee as described in Section 6 of this regulation. The individual's certification remains in force for the duration of the certification period as described in Section 5 of this regulation.
- E. Each branch office of any company, agency, organization or self-employed individual ("employing entity") required to have personnel licensed commercially under state pesticide law shall have in its employment at least one master applicator. This Master

must be licensed in all categories which the branch office of the company or agency performs applications and any Operators must also be licensed in the categories in which they perform or supervise pesticide applications. This master applicator must actively supervise persons applying pesticides within such employing entity and have the ability to be on site to assist such persons within six (6) hours driving time. Whenever an out-of-state employing entity is conducting a major application project they must have a master applicator within the state.

F. Exemptions

- I. Persons applying pesticides to household pets and other non agricultural domestic animals are exempt from commercial applicator licensing.
- II. Swimming pool and spa operators that are certified by the National Swimming Pool Foundation, National Spa and Pool Institute or other organization approved by the Board are exempt from commercial applicator licensing. However, these persons must still comply with all provisions of C.M.R. 10-144, Chapter 202 – *Rules Relating to Public Swimming Pools and Spas*, administered by the Maine Department of Health and Human Services, Division of Environmental Health..
- III. Certified or licensed Wastewater or Drinking Water Operators applying registered disinfectants to waste or drinking water as part of their employment.
- VI. Adults applying repellents to children with the consent of parents/guardians.
- VII. Persons installing antimicrobial metal hardware.

2. Categories of Commercial Applicators

- A. All commercial applicators shall be categorized according to the type of work performed as outlined below:

I. Agricultural Animal and Plant Pest Control

- a. **Agricultural Animal** - This subcategory includes commercial applicators using or supervising the use of pesticides on animals and to places on or in which animals are confined. Doctors of Veterinary Medicine engaged in the business of applying pesticides for hire as pesticide applicators are included in this subcategory; however, those persons applying pesticides as drugs or medication during the course of their normal practice are not included.
- b. **Agricultural Plant** - This subcategory includes commercial applicators using or supervising the use of pesticides in the production of crops including blueberries, orchard fruit, potatoes, vegetables, forage, grain and industrial or non-food crops.

Option I - Limited Commercial Blueberry - This option includes commercial applicators using or supervising the use of pesticides in the production of blueberries only.

Option II - Chemigation - This option includes commercial applicators using or supervising the use of pesticides applied through irrigation equipment in the production of crops.

Option III - Agricultural Fumigation - This option includes commercial applicators using or supervising the use of fumigant pesticides in the production of crops.

Option IV - Post Harvest Treatment - This option includes commercial applicators using or supervising the use of pesticides in the post harvest treatment of food crops.

II. **Forest Pest Management**

This category includes commercial applicators using or supervising the use of pesticides in forests, forest nurseries, Christmas trees, and forest seed producing areas.

III. **Ornamental and Turf Pest Control**

- a. **Outdoor Ornamentals** - This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of outdoor ornamental trees, shrubs and flowers.
- b. **Turf** - This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of turf, such as at turf farms, golf courses, parks, cemeteries, athletic fields and lawns.
- c. **Indoor Ornamentals** - This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of live plants in shopping malls, businesses, residences and institutions.

IV. **Seed Treatment**

This category includes commercial applicators using or supervising the use of pesticides on seeds.

V. **Aquatic Pest Control**

- a. **General Aquatic** - This subcategory includes commercial applicators using or supervising the use of pesticides applied directly to surface water, including but not limited to outdoor application to public drinking water supplies, golf course ponds, rivers, streams and wetlands. Excluding applicators engaged in public health related activities included in categories VII(e) and VIII below.

- b. **Sewer Root Control** - This subcategory includes commercial applicators using or supervising the use of pesticides applied to sewers to control root growth in sewer pipes.

VI. **Vegetation Management**

- a. **Rights-of-Way Vegetation Management** - This subcategory includes commercial applicators using or supervising the use of pesticides in the management of vegetation on utility, roadside and railroad rights-of-way.
- b. **General Vegetation Management** - This subcategory includes commercial applicators using or supervising the use of pesticides in the management of vegetation (including invasive plants) on sites not included in category VI a including, but not limited to, municipal and other publicly owned properties, industrial or commercial plants and buildings, lumber yards, airports, tank farms, storage areas, parking lots, sidewalks, and trails.

VII. **Industrial, Institutional, Structural and Health Related Pest Control**

- a. **General** - This subcategory includes commercial applicators using or supervising the use of pesticides in, on or around human dwellings, office buildings, institutions such as schools and hospitals, stores, restaurants, industrial establishments (other than in Category 6) including factories, warehouses, food processing plants, food or feed transportation facilities and other structures, vehicles, railroad cars, ships, aircraft and adjacent areas; and for the protection of stored, processed or manufactured products. This subcategory also includes commercial applicators using or supervising the use of pesticides to control rodents on refuse areas and to control other pests, including but not limited to birds and mammals.
- b. **Fumigation** - This subcategory includes commercial applicators using or supervising the use of fumigants or fumigation techniques in any type of structure or transportation device.
- c. **Disinfectant and Biocide** - This subcategory includes commercial applicators using or supervising the use of pesticides to treat mold or microbial growth problems, to treat water in manufacturing, industrial cooling towers, public drinking water treatment plants, sewers, air conditioning systems, and in swimming pools and spas.
 - ~~1. **Disinfectant and Biocide Treatments** - This subcategory includes commercial applicators using or supervising the use of pesticides to treat water in manufacturing, industrial cooling towers, public drinking water treatment plants, sewers, and air conditioning systems.~~
 - ~~2. **Swimming Pool & Spa** - This subcategory includes commercial applicators using or supervising the use of pesticides to treat water in swimming pools and spas.~~

3. ~~**Mold Remediation**—This subcategory includes commercial applicators using or supervising the use of pesticides to treat mold or microbial growth problems.~~

- d. **Wood Preserving** - This subcategory includes commercial applicators using or supervising the use of restricted use pesticides to treat lumber, poles, railroad ties and other types of wooden structures including bridges, shops and homes. It also includes commercial applicators applying general use pesticides for remedial treatment to utility poles.
- e. **Biting Fly & other Arthropod Vectors** - This subcategory includes commercial applicators and non-public health governmental officials using or supervising the use of pesticides in management and control of biting flies & other arthropod vectors of public health and public nuisance importance including, but not limited to, ticks, mosquitoes, black flies, midges, and members of the horsefly family.
- f. **Termite Pests** - This subcategory includes commercial applicators using or supervising the use of pesticides to control termites.

VIII. **Public Health Pest Control**

- a. **Biting Fly Pests** - This subcategory includes governmental officials using pesticides in management and control of potential disease vectors or other pests having medical and public health importance including, but not limited to, mosquitoes, black flies, midges, and members of the horsefly family.
- b. **Other Pests** - This subcategory includes governmental officials using pesticides in programs for controlling other pests of concern to public health including, but not limited to, ticks and birds and mammal vectors of human disease.

IX. **Regulatory Pest Control**

This category includes governmental employees using pesticides in the control of pests regulated by the U.S. Animal and Plant Health Inspection Service or some other governmental agency.

X. **Demonstration and Research Pest Control**

This category includes all individuals who (1) demonstrate to the public the proper use and techniques of application of pesticides or supervise such demonstration, (2) conduct field research with pesticides, and in doing so, use or supervise the use of pesticides. Individuals who conduct only laboratory-type research are not included. Applicants seeking certification in this category must also become certified in whatever category/subcategory they plan to make applications under; e.g., Categories I - IX.

XI. **Aerial Pest Control**

This category includes commercial applicators, including pilots and co-pilots, applying or supervising the application of pesticides by means of any aircraft. Applicants seeking certification in this category must also become certified in whatever category/subcategory they plan to make applications under; e.g., Categories I - IX.

3. **Competency Standards for Certification of Commercial Applicators**

- A. Applicants seeking commercial certification must establish competency in the general principles of safe pest control by demonstrating knowledge of basic subjects including, but not limited to, pesticide labeling, safety, environmental concerns, pest organisms, pesticides, equipment, application techniques and applicable laws and regulations. (Core Exam).
- B. Applicants seeking commercial certification must demonstrate competency in each applicable category or subcategory. (Category Exam). Competency in the applicable category or subcategory shall be established as follows:

I. **Agricultural Animal and Plant Pest Control**

- a. **Agricultural Animals.** Applicants seeking certification in the subcategory of Animal Pest Control as described in Section 2(A)(I)(a) must demonstrate knowledge of animals, their associated pests, and methods of pest control. Areas of practical knowledge shall include specific toxicity, residue potential, relative hazards of different formulations, application techniques, and hazards associated with age of animals, stress, and extent of treatment.
- b. **Agricultural Plant.** Applicants seeking certification in the subcategory of Plant Pest Control as described in Section 2(A)(I)(b) Options I - IV must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using pesticides. Areas of such practical knowledge shall include soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, potential for environmental contamination, non-target injury, and community problems related to pesticide use in certain areas. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

II. **Forest Pest Management**

Applicants seeking certification in the category of Forest Pest Management as described in Section 2(A)(II) must demonstrate practical knowledge of forest vegetation management, forest tree biology and associated pests. Such required knowledge shall include population dynamics of pest species, pesticide-organism interactions, integration of pesticide use with other pest control methods, environmental contamination, pesticide effects on non-target organisms, and use of specialized equipment. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

III. **Ornamental and Turf Pest Control**

- a. **Outdoor Ornamentals.** Applicants seeking certification in the Outdoor Ornamental subcategory as defined in Section 2(A)(III)(a) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of trees, shrubs and floral plantings. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Turf.** Applicants seeking certification in the Turf subcategory as described in Section 2(A)(III)(b) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of turf. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- c. **Indoor Ornamentals.** Applicants seeking certification in the Indoor Ornamental subcategory described in Section 2(A)(III)(c) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of indoor ornamental plantings. Such knowledge shall include pest recognition, proper pesticide selection, undue pesticide persistence, and application methods with particular reference to techniques used in proximity to human presence.

IV. **Seed Treatment**

Applicants seeking certification in the category of Seed Treatment as described in Section 2(A)(IV) must demonstrate practical knowledge of seed types and problems requiring chemical treatment. Such knowledge shall include seed coloring agents, carriers and binders which may affect germination, hazards associated with handling, sorting, and mixing in the treatment process, hazards of introduction of treated seed into food and feed channels, and proper disposal of unused treated seeds.

V. **Aquatic Pest Control**

- a. **General Aquatic** - Applicants seeking certification in the subcategory of General Aquatic as described in Section 2(A)(V)(a) must demonstrate practical knowledge of proper methods of aquatic pesticide application, application to limited area, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include basic factors contributing to the development of nuisance aquatic plant growth such as algal blooms, understanding of various water use situations and potential downstream effects from pesticide use, and potential effects of various aquatic pesticides on plants, fish, birds, insects and other organisms associated with the aquatic environment. Also required shall be an understanding of the Department of Environmental Protection laws and regulations pertaining to aquatic discharges and aquatic weed control and a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Sewer Root Control** - Applicants seeking certification in the subcategory of Sewer Root Control as described in Section 2(A)(V)(b) must demonstrate practical knowledge of proper methods of sewer root control pesticide application, application to pipes, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include potential effects on water treatment plants, movement of pesticides into off target pipes or buildings and the hazards of sewer gases.

VI. **Vegetation Management**

Applicants seeking certification in the subcategories under Vegetation Management as described in Section 2(A)(VI) (a-b) must demonstrate practical knowledge of the impact of pesticide use on a wide variety of environments. Such knowledge shall include an ability to recognize target organisms and circumstances specific to the subcategory, awareness of problems of runoff, root pickup and aesthetic considerations associated with excessive foliage destruction and "brown-out", and an understanding of the mode of action of herbicides, and reasons for the choice of particular chemicals for particular problems, importance of the assessment of potential impact of spraying on adjacent public and private properties and activities, and effects of spraying on fish and wildlife species and

their habitat. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

VII. Industrial, Institutional, Structural and Health Related Pest

- a. **General.** Applicants seeking certification in the subcategory of General Pest Control as described in Section 2(A)(VII)(a) must demonstrate a practical knowledge of a wide variety of pests and methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.
- b. **Fumigation.** Applicants seeking certification in the subcategory Fumigation as described in Section 2(A)(VII)(b) must demonstrate a practical knowledge of a wide variety of pests and fumigation methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, fumigant formulations, methods to avoid contamination of food and damage to structures and furnishings, and avoidance of risks to employees and customers.
- c. **Disinfectant and Biocide.** Applicants seeking certification in the subcategory of Disinfectant and Biocide as described in Section 2(A)(VII)(c) must demonstrate practical knowledge of water organisms and their life cycles, pool and spa design systems, drinking water treatment plant designs, cooling water system designs, mold and problematic microbial organisms, labels, hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.
 - ~~1. **Disinfectant and Biocide Treatments.** Applicants seeking certification in the subcategory of Disinfectant and Biocide Treatments as described in Section 2(A)(VII)(c)(1) must demonstrate practical knowledge of water organisms and their life cycles, drinking water treatment plant designs, cooling water system designs, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.~~
 - ~~2. **Swimming Pool & Spa.** Applicants seeking certification in the subcategory of Swimming Pool & Spa as described in Section 2(A)(VII)(c)(2) must demonstrate practical knowledge of water organisms and their life cycles, pool and spa design systems, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.~~

3. ~~**Mold Remediation.** Applicants seeking certification in the subcategory of Mold Remediation as described in Section 2(A)(VII)(c)(3) must demonstrate practical knowledge of mold and problematic microbial organisms, their life cycles, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.~~
- d. **Wood Preserving.** Applicants seeking certification in the Wood Preserving Subcategory described in Section 2(A)(VII)(d) must demonstrate practical knowledge in wood destroying organisms and their life cycles, nonchemical control methods, pesticides appropriate for wood preservation, hazards associated with their use, proper handling of the finished product, proper disposal of waste preservatives, and proper application techniques to assure adequate control while minimizing exposure to humans, livestock and the environment.
- e. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest control as described in Section 2(A)(VII)(e) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- f. **Termite Pests.** Applicants seeking certification in this subcategory must demonstrate a practical knowledge of Termite pests and methods for their control. Such knowledge shall include identification of termites and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.

VIII. Public Health Pest Control

- a. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest Control as described in Section 2(A)(VIII)(a) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods.

Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

- b. **Other Pests.** Applicants seeking certification in the subcategory of Other Pest Control as described in Section 2(A)(VIII)(b) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

IX. **Regulatory Pest Control**

Applicants seeking certification in the category of Regulatory Pest Control as described in Section 2(A)(IX) must demonstrate practical knowledge of regulated pests and applicable laws relating to quarantine and other regulations of pests. Such knowledge shall also include environmental impact of pesticide use in eradication and suppression programs, and factors influencing introduction, spread, and population dynamics of relevant pests. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

X. **Demonstration and Research Pest Control**

Applicants seeking certification in the category of Demonstration and Research Pest Control as described in Section 2(A)(X) must demonstrate practical knowledge in the broad spectrum of activities involved in advising other applicators and the public as to the safe and effective use of pesticides. Persons involved specifically in demonstration activities will be required to demonstrate knowledge of pesticide-organism interactions, the importance of integrating chemical and non-chemical control methods, and a grasp of the pests, life cycles and problems appropriate to the particular demonstration situation. Field researchers will be required to demonstrate general knowledge of pesticides and pesticide safety, as well as a familiarity with the specific standards of this Section which apply to their particular areas of experimentation. All individuals certified in this category must also be certified in one or more of the previous categories or subcategories which represent at least 80% of their practice. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

XI. **Aerial Pest Control**

Applicants seeking certification in the category of Aerial Pest Control as described in Section 2(A)(XI) must demonstrate at least a practical knowledge of problems which are of special significance in aerial application of pesticides, including chemical dispersal equipment, tank, pump and plumbing arrangements; nozzle selection and location; ultra-low volume systems; aircraft calibration; field flight patterns; droplet size considerations; flagging methods; and loading procedures. Applicants must also demonstrate competency in the specific category or subcategory in which applications will be made, as described in paragraphs I, II, VI and VIII herein. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

4. **Competency Standards for Certification of Commercial Applicator/Master**

- A. **Regulations Exam.** An applicant seeking certification as a commercial applicator/master must successfully complete a closed book exam on the appropriate chapters of the Board's regulations. The passing grade shall be 80%. An applicant must successfully complete the regulations exam before being allowed to proceed to the master exam. The staff may waive the requirements for the closed book regulation exam if it determines that a pest management emergency exists necessitating the issuance of a nonresident license pursuant to Section 6 B. of this chapter, provided that the staff verbally reviews the pertinent regulations with the applicant prior to issuing a nonresident license.
- B. **Master Exam.** An applicant seeking certification as a commercial applicator/master must also demonstrate practical knowledge in ecological and environmental concerns, pesticide container and rinsate disposal, spill and accident mitigation, pesticide storage and on site security, employee safety and training, potential chronic effects of exposure to pesticides, pesticide registration and special review, the potential for groundwater contamination, principles of pesticide drift and measures to reduce drift, protection of public health, minimizing public exposure and use of non pesticide control methods. In addition, applicant must demonstrate the ability to interact with a concerned public.

5. **Certification Procedures for Commercial Applicators**

- A. **Initial Certification.** Individuals attempting to certify as a commercial applicator must be at least 18 years of age.
 - I. **Application for Exams.** Individuals applying to take exams must submit a completed application and associated fees. All fees are waived for governmental employees.
 - a. Information shall include name, home address, company address, name and telephone number of supervisor and categories for which certification is desired.

- b. A non-refundable fee of \$10.00 for each core, category or subcategory exam shall accompany the application.
- c. Study materials for other than the regulations exam are available through the University of Maine Cooperative Extension Pest Management Office for a fee.
- d. A non-refundable fee of \$10.00 for the regulations exam and \$40.00 for the Master exam shall accompany the application for Master exams. Study material for the regulations exam will be sent to the applicant upon receipt of their application and the required fees.

II. **Appointment for Exams**

- a. Exams will be scheduled by Board staff. It is the responsibility of the applicant to reschedule if necessary.
- b. All exam fees shall be forfeited if an applicant fails to notify the Board that he/she cannot sit for the exams on the scheduled date at least 24 hours in advance of the scheduled exam. Applicants who cancel their exam appointment two times in a row shall also forfeit their exam fees. Re-application shall require an additional \$15.00 fee.
- c. Exams will be available year-round on an appointment basis at the Board's office in Augusta.
- d. Exams may also be offered at other locations designated by the Board staff. Appointments for these exams should be arranged by application with the Board's office in Augusta.

III. **Exams**

- a. Applicants † shall take a closed book core exam plus a closed book category technical exam on each applicable category or subcategory for which they anticipate making pesticide applications.
- b. In addition to the exams described above in sections (a), applicants for commercial applicator/master certification must complete a closed book written regulations exam as well as a master exam. Applicants for commercial applicator/master must successfully complete the core and at least one category exam or the combined exam before being eligible to take the master exams. Applicants must also successfully complete the regulations exam before being allowed to commence on the master exam.

IV. **Examination Procedures.** All applicants shall comply with these rules or forfeit their opportunity to complete the exams at a specified appointment.

- a. Applicant shall present a government issued identification to the moderator prior to commencement of exams.

- b. Applicants should be present and ready to take the exams at the appointed time.
- c. Applicants shall not talk during the examination period.
- d. Applicants shall not be allowed to bring any books, papers, cellular telephones, calculators or electronically stored data into the examining room. Pencils and work sheets will be provided and all papers shall be collected at the end of the period.
- e. Applicants shall not make notes of the exams and shall not leave the table during an exam unless authorized by the staff.

V. **Qualification Requirements.** An applicant must achieve a passing score of 80 percent on each exam.

- a. An applicant who fails the core exam must re-apply and pay all required fees and may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must reapply and pay all required fees and wait 6 more days before retaking again.
- b. An applicant who fails a category exam must re-apply and pay all required fees and may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must reapply and pay all required fees and wait 6 more days before retaking again.
- c. An applicant who passes the core and one category exam shall be considered eligible for operator level licensing in that particular category so long as that person will be working under the supervision of a Master applicator. If at a later date the applicant wishes to add another category, only the appropriate category exam shall be required.
- d. An applicant who fails a master exam must re-apply and pay all required fees and may not retake the examination prior to 6 days after the date of such failed examination.
- e. Any applicant must pass both the core and at least one category exam by December 31 of the third year from the date on which the first exam was passed.
- f. Any applicant who violates any of the rules pertaining to examinations shall wait a minimum of 60 days before retaking.

VI. **Expiration.** Certification under this Section will expire on December 31st of the third year after the date of successful completion of required exams and on December 31st of every third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.

- VII. An applicant's original certification period shall not be extended due to the applicant qualifying for another category or upgrading to the master level.

B. Recertification of Applicators

- I. Persons with current valid certification may renew that certification by either providing documentation from a substantially equivalent professional certification program approved by the board or by accumulating recertification credits during the certification period described in Section 5(A)VI according to the following schedule:
- a. **Master level** - 9 credit hours in subject areas applicable to the categories/subcategories in which the licensee is certified.
 - b. **Operator level** - 6 credit hours in subject areas applicable to the categories/subcategories in which the licensee is certified.
- II. Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.
- a. Board staff will review program agendas and monitor programs as time permits.
- III. Credit will be allowed for topics including, but not limited to:
- a. Applicable laws and regulations.
 - b. Environmental hazards.
 - c. Calibration and new application techniques.
 - d. Label review.
 - e. Applicator safety.
 - f. Storage and disposal.
 - g. Pest identification and control.
 - h. Integrated pest management.
- IV. Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting with details of the agenda. Board staff will review program agendas and assign credit values.
- a. One credit will be assigned for each 1 hour of presentation on appropriate topics.

- b. An individual who conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each 1 hour of presentation on appropriate topics.
 - c. An individual who organizes a meeting shall be required to maintain a sign up sheet and supervise the signing of the sheet by all applicators attending the program. That individual shall submit the sign up sheet to the Board at the same time the verification attendance forms are collected and submitted to the Board.
- V. For in state programs, applicants must submit verification of attendance at approved programs to the Board. For out of state programs, applicators must submit verification of attendance; they may also be asked to provide documentation such as an agenda or descriptions of the presentations attended.
- VI. A person who fails to accumulate the necessary credits during their first three year certification period will have to retake and pass all exam(s) required for initial certification. If a person fails to accumulate the necessary credits again that person must retake and pass all exam(s) required for initial certification and within one year thereafter, obtain the balance of the recertification credits which that person failed to accumulate during the previous certification period. If that person does not obtain the balance of credits needed, the Board will not renew their license until the make- up credits are accrued.
- VII. Applicants must attend the entire approved program(s) for which recertification credit is sought. No other person may complete or sign a verification form on another applicator's behalf. Any form that is completed or signed by a person other than the applicator will be deemed a fraudulent report and will not be approved by the Board for recertification credit(s). Any credit(s) approved by the Board pursuant to an attendance verification form which is subsequently determined by the Board to have been completed or signed by a person other than the applicator shall be void and may not be counted towards the applicator's recertification requirements; and any recertification issued on the basis of such credits shall be void.

6. Licensing

- A. All Commercial Applicators required to be certified under this chapter and state pesticide law shall be licensed before using or supervising the use of pesticides as described in Section 1(A).
- B. **Nonresident licenses.** When the staff determines that a pest management emergency exists which necessitates the use of aerial application and for which there are not sufficient qualified Maine licensees, it may issue a license without examination to nonresidents who are licensed or certified by another state or the Federal Government substantially in accordance with the provisions of this chapter. Nonresident licenses issued pursuant to this section are effective until December 31 of the year in which they are issued.
- C. **Application.** Application for a commercial applicator license shall be on forms provided by the Board.

- I. The completed application must include the name of the company or agency employing the applicant.
- II. Unless the applicant is the owner of a company, the completed application must be signed by both the applicant and that person's supervisor to verify the applicant is an employee of the company/agency.
- D. **Fee.** At the time of application, the applicant must tender the appropriate fee as follows:
- I. For a commercial applicator license - \$105.00 per person.
- E. Commercial applicators who apply pesticides for hire (custom applicators) and operate a company that is incorporated or which employs more than one applicator (licensed or unlicensed) must comply with Chapter 35, *Certification & Licensing Provisions/Spray Contracting Firms* which requires an additional Spray Contracting Firm License.
- F. **Insurance.** Commercial applicators who spray for hire (custom applicators) shall be required to have liability insurance in force at any time they make a pesticide application.
- I. Applicators shall submit a completed and signed form provided by the Board at the time they apply for their license which attests that they will have the required amounts of insurance coverage in effect when they make pesticide treatments. The information submitted on the form must be true and correct.
- II. Insurance coverage must meet or exceed the following minimum levels of liability:
- a. **Ground applicators**
- | | |
|------------------|--|
| Public liability | \$100,000 each person
\$300,000 each occurrence |
| Property damage | \$100,000 each occurrence |
- b. **Aircraft applicators**
- | | |
|------------------|--|
| Public liability | \$100,000 each person
\$300,000 each occurrence |
| Property damage | \$100,000 each occurrence |
- G. **Reports.** Annual Summary Reports described in Chapter 50, Section 2(A) must be submitted for each calendar year by January 31 of the following year. In the event a required report is not received by the due date, the person's license is temporarily suspended until the proper report is received or until a decision is rendered at a formal hearing as described in 22 MRSA §1471-D (7).

H. **Expiration**

- I. All licenses will expire at the end of the certification period as determined in Section 5(A)VI or when an individual licensee terminates employment with the company/agency with which the individual's license is affiliated.
- II. The licensee or a company/agency representative shall notify the Board in writing within 10 days after a licensee is terminated from employment.
- III. Also, all licenses within a company/agency are suspended if the licensed Master is terminated from employment or dies.

I. **Decision.** Within 60 days of receipt of application by the Board, unless the applicant agrees to a longer period of time, the Director shall issue, renew or deny the license. The Director's decision shall be considered final agency action for purposes of 5 M.R.S.A. §11001 *et seq.*

J. **Credentials Contact.** Licenses issued under this rule will include the following information:

- I. Full name of applicator
 - II. License number
 - III. Categories
 - IV. Expiration date
 - V. Maine statute under which license is issued.
-

STATUTORY AUTHORITY: 22 M.R.S.A., Section 1471-D

EFFECTIVE DATE:

January 1, 1983 (filed with Secretary of State August 13, 1982)

AMENDED:

December 29, 1982

January 1, 1984

January 1, 1984 - Section 7

May 20, 1984 - Section 6

May 13, 1985 - Section 5

Emergency amendment effective April 18, 1986 - Section 6

August 3, 1986 - Section 6

November 30, 1986 - Section 3

May 23, 1987 - Section 1

April 27, 1988

April 29, 1990

January 1, 1996 (adopted by Board October 7, 1994 - see Section 8 for transition dates)

October 2, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):

March 1, 1997

AMENDED:

December 28, 1999 -- also converted to MS Word

March 5, 2003

July 3, 2005 – filing 2005-267

March 4, 2007 – filing 2007-69

July 2, 2009 – filing 2009-318 (EMERGENCY, later reverted to pre-emergency status)

CORRECTIONS:

February, 2014 – agency names, formatting

AMENDED:

December 9, 2014 – filing 2014-280

September 23, 2015 – filing 2015-168

July 23, 2019 – filing 2019-131

SUMMARY: These regulations describe the requirements for certification and licensing of private applicators.

1. Competency Standards for Certification - Private Applicator

- A. No person shall be certified as a private applicator unless he has fulfilled requirements demonstrating his knowledge of basic subjects including pesticide label comprehension, ability to read and understand pesticide labeling, safety, environmental concerns, stewardship, pest organisms, pesticides, equipment, application techniques, responsibilities for supervisors of non-certified applicators, and applicable laws and regulations. Also required shall be knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans (core exam).
- B. No person shall be certified as a private applicator unless he has demonstrated knowledge of the general principles of pest control for his major commodity, including specific pests of the crop, their life cycle, and proper timing of control measures to be efficacious (Commodity Exam).

2. Certification Procedures for Private Applicators

A. Initial Certification

- 1. Any person attempting to certify as a private applicator must be at least 18 years of age.
- 2. Any person seeking to be certified as a private applicator must pass a written core exam and a written exam in the area of his primary commodity. Both exams shall be closed book.
- 3. Exams may be taken at cooperating County University of Maine Cooperative Extension offices. Exams may also be offered at other locations designated by the Board staff or available on an appointment basis at the office of the Board.
- 4. **Examination Procedures.** All applicants shall comply with these rules or forfeit their opportunity to complete the exams at a specified appointment.
 - a. Applicant shall present a government issued identification to the moderator prior to commencement of exams.

- b. Applicants should be present and ready to take the exams at the appointed time.
 - c. Applicants shall not talk during the examination period.
 - d. Applicants shall not be allowed to bring any books, papers, calculators or electronically stored data into the examining room. Pencils and work sheets will be provided and all papers shall be collected at the end of the period.
 - e. Applicants shall not make notes of the exams and shall not leave the table during an exam unless authorized by the staff.
5. **Qualification Requirements.** An applicant must achieve a passing score of 80 percent on each exam.
- a. An applicant who fails the core exam may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must wait 6 more days before retaking the exam again.
 - b. An applicant who fails the exam in the area of his primary commodity may not retake the that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must wait 6 more days before retaking the exam again.
 - c. Any applicant must pass both the core and at least one commodity exam within 12 months before qualifying for certification.
 - d. Any applicant who violates any of the rules pertaining to examinations shall wait a minimum of 60 days before retesting.
6. Certification under this section will expire on October 31st of the third year after the date of successful completion of the exams and on October 31st of every third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.
- B. **Supplemental Certification.** Private applicators who are certified as described in Section 2(A), and intend to conduct soil fumigation, non-soil fumigation or aerial applications must be certified in the appropriate supplemental category. Certification is obtained by passing a written exam with a minimum score of 80.
1. Supplemental category exams shall be closed book.
 2. Supplemental category exams will be available year-round on an appointment basis at the Board's office in Augusta.
 3. Examination and qualification requirements described in Section 2(A)(4-6) pertain to supplemental certification.

4. **Categories for Supplemental Certification of Private Applicators**

- a. **Soil Fumigation.** This category includes private applicators using or supervising the use of pesticides to fumigate crops in production including blueberries, orchard fruit, potatoes, vegetables, forage, grain and industrial or non-food crops.
- b. **Non-soil Fumigation.** This category includes private applicators using or supervising the use of fumigant pesticides or fumigation techniques in any type of structure or transportation device.
- c. **Aerial.** This category includes private applicators, including pilots and co-pilots, applying pesticides by means of any aircraft.

5. **Competency Standards for Supplemental Certification of Private Applicators**

Applicants seeking supplemental private certification must demonstrate competency in each applicable category (Category Exam). Competency in the applicable category shall be established as follows:

- a. **Soil Fumigation.** Applicants seeking supplemental certification in the category of Soil Fumigation as described in Section 2(B)(4)(a) must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using pesticides. Areas of such practical knowledge shall include soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, potential for environmental contamination, non-target injury, and community problems related to pesticide use in certain areas. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans. In addition to the above competencies, private applicators obtaining supplemental certification in this category must demonstrate practical knowledge of topics indicated in 40 CFR 171.105 (d) (2017).
- b. **Non-soil Fumigation.** Applicants seeking supplemental certification in the category of Structural Fumigation as described in Section 2(B)(4)(b) must demonstrate a practical knowledge of a wide variety of pests and fumigation methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, fumigant formulations, methods to avoid contamination of food and damage to structures and furnishings, and avoidance of risks to employees. In addition to the above competencies, private applicators obtaining supplemental certification in this category must demonstrate practical knowledge of topics indicated in 40 CFR 171.105 (e) (2017).
- c. **Aerial Pest Control.** Applicants seeking supplemental certification in the category of Aerial Pest Control as described in Section 2(B)(4)(c) must demonstrate at least a practical knowledge of problems which are of special significance in aerial application of pesticides, including chemical

dispersal equipment, tank, pump and plumbing arrangements; nozzle selection and location; ultra-low volume systems; aircraft calibration; field flight patterns; droplet size considerations; flagging methods; and loading procedures. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans. In addition to the above competencies, private applicators obtaining supplemental certification in this category must demonstrate practical knowledge of topics indicated in 40 CFR 171.105 (f) (2017).

- C. **Requirements for Noncertified Applicators.** A certified applicator directly supervising a noncertified applicator to use restricted use pesticides must follow the provisions in 40 CFR 171.201 (2023).

B.D. Recertification

1. Any person with current valid certification may renew that certification by accumulating 6 recertification credits during the certification period described in Section 2(A)6.
2. Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.
3. Credit will be allowed for topics including, but not limited to:
 - a. Applicable laws and regulations.
 - b. Environmental hazards.
 - c. Calibration and new application techniques.
 - d. Label review.
 - e. Applicator safety.
 - f. Storage and disposal.
 - g. Pest identification and control.
 - h. Integrated pest management.
4. Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting and submit details of the pesticide topics, including titles and length of time devoted to them. Board staff will review program agendas and assign credit values. Board staff will monitor programs as time permits.

- a. A minimum credit of one hour shall be assigned for each one hour of presentation on appropriate topics.
 - b. An individual conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each 1 hour of presentation on appropriate topics.
5. For in state programs, each participant will complete a form to verify attendance at each program for which credit is allowed at the site. For out of state programs, applicators must notify the Board about attendance and send a registration receipt or other proof of attendance and a copy of the agenda or other description of the presentations attended. The agenda must show the length of each presentation and describe what was covered.
 6. A person who fails to accumulate the necessary credits will have to re-apply to take the exams required for initial certification.

3. Licensing

- A. **Application.** Application for a private applicator license, shall be on forms provided by the Board. Information shall include name; Social Security number; mailing address; farm name, location and telephone number; and major crop(s).
- B. **Fee.** At the time of application, the applicant must tender the appropriate fee as follows:
 1. For a private applicator license - \$15.00 per person.
 2. For replacement or alteration - \$5.00.
- C. **Expiration.** Private applicator licenses are issued on a three-year period and will expire on October 31st of the third year. Any person who has accumulated the required number of recertification credits must apply for license renewal within one year of the expiration date of the license or the recertification credits are forfeited and that person must retake and pass both the core and commodity exams to again be eligible for licensing.
- D. **Decision.** Within 60 days of receipt of application by the Board, unless the applicant agrees to a longer period of time, the Director shall issue, renew or deny the license. The Director's decision shall be considered final agency action for purposes of 5 M.R.S.A. §11001 *et seq.*

- E. **License Issued.** Licenses issued under this rule will include the following information:
- I. Full name of applicator
 - II. License number
 - III. Commodities and categories
 - IV. Expiration date
 - V. Maine statute under which license is issued
-

STATUTORY AUTHORITY: 22 M.R.S. §1471-D

EFFECTIVE DATE:
January 1, 1983

AMENDMENT EFFECTIVE:
December 6, 1987
August 17, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):
March 1, 1997

AMENDED:
August 25, 1997 – fees
January 4, 2005 – filing 2004-605, Section 3.C.

CORRECTIONS:
February, 2014 – agency names, formatting

AMENDED:
December 9, 2014 – Section 2(A)(4)(a, b), filing 2014-281
July 23, 2019 – filing 2019-132

SUMMARY: This chapter describes special limitations placed upon the use of (1) aldicarb (Temik 15G) in proximity to potable water bodies; (2) trichlorfon (Dylox, Proxol); (3) hexazinone (Velpar, Pronone), (4) aquatic herbicides in the State of Maine; (5) plant-incorporated protectants; (6) neonicotinoids (dinotefuran, clothianidin, imidacloprid, thiamethoxam); and (7) chlorpyrifos (Dursban, Lorsban).

Section 1. ALDICARB (TEMIK®)

The registration of aldicarb (Temik 15G) is subject to the following buffer zone requirements:

- A. Aldicarb (Temik 15G) shall not be applied within 50 feet of any potable water source if that water source has been tested and found to have an aldicarb concentration in the range of one to ten parts per billion (ppb). The 50 foot buffer would be mandatory for one year with a required retesting of the water at the end of the period.
- B. Aldicarb (Temik 15G) shall not be applied within 100 feet of any potable water source if that water source has been tested and found to have an aldicarb concentration in excess of 10 ppb. The 100 foot buffer would be mandatory for one year with a required retesting of the water at the end of this period.

Section 2. TRICHLORFON (DYLOX, PROXOL)

The registration of trichlorfon (Dylox, Proxol) is subject to the following requirements:

- A. Trichlorfon shall only be used for control of subsurface insects on turf.
- B. Prior to application the target pest must be identified and the severity of the infestation must be determined, including the extent of the damage.
- C. Only infested areas shall be treated with trichlorfon. Broadcast treatments of the entire turf area are prohibited.
- D. Following application, the trichlorfon must be watered into the soil with at least ½ inch of water and according to the label directions. The applicator must assure that the appropriate watering will take place prior to re-entry by any unprotected person.

Section 3. HEXAZINONE (VELPAR, PRONONE)

The registration of hexazinone is subject to the following limitations and conditions.

A. Licenses Required

No person shall use or supervise the use of any pesticide containing the active ingredient hexazinone unless they have obtained an applicators license in accordance with 22 M.R.S. §1471-D.

Section 4. AQUATIC HERBICIDES

The registration of pesticides for which there is an aquatic herbicide use on the product label shall be subject to the following limitations and conditions.

A. Board Publication of List

The Board of Pesticides Control will publish by May 23, 2003 and by March 15th of each year thereafter a list of herbicide products registered in Maine for which the manufacturer has verified that there is an aquatic use on the pesticide label. Based on available information, the Board may exempt from this list pesticides that it determines are not for use in the control of aquatic vegetation. Pesticides labeled solely for use in aquariums and antifouling paints, are specifically exempt from this list.

B. Licenses Required

- I. Unless exempted under Chapter 41, Section 4 (B) (III), no person shall purchase, use or supervise the use of any aquatic herbicides identified on the Board's annual listing unless they have obtained a private or commercial pesticide applicator's license from the Board.
- II. No person shall:
 - a. Distribute any aquatic herbicides identified on the Board's annual listing without a restricted use pesticide dealer's license from the Board; or
 - b. Unless exempted under Chapter 41, Section 4 (B) (III), distribute any aquatic herbicides identified on the Board's annual listing to any person who is not licensed as a private or commercial applicator by the Board.
- III. Registered herbicides containing only the active ingredients erioglaucline (Acid Blue 9 or FD&C Number 1, CAS Registry No. 1934-21-0) and/or tartrazine (Acid Yellow 23 or FD&C Yellow Number 5, CAS Registry No. 2650-18-2 (trisodium salt) or 3844-45-9 (triammonium salt)) are exempt from the applicator licensing requirements described in Chapter 41, Section 4 (B) (I) and Chapter 41, Section 4 (B) (II) (b).

C. **Disclosure**

The Board will make a disclosure form available to dealers distributing any aquatic herbicides identified on the Board's annual listing. The Board requests that dealers present to customers the disclosure form that advises purchasers that, (1) an aquatic discharge license must be obtained from the Maine Department of Environmental Protection before any application may be made to any surface waters of the State as defined in 38 M.R.S.A. Section 361-A(7) including any private ponds that may flow into such a body of water at any time of year, (2) that Best Management Practices developed jointly by the Board and the Maine Department of Environmental Protection on the use of aquatic herbicides are available.

D. **Records and Reporting**

Dealers distributing any aquatic herbicides identified on the Board's annual listing shall keep records of such sales and provide reports to the Board as described for restricted use pesticides in Chapter 50, "Record Keeping and Reporting Requirements."

E. **Use of Best Management Practices**

Aquatic herbicides applied to private ponds and not subject to an aquatic discharge permit may only be applied consistent with Best Management Practices developed jointly by the Board and the Maine Department of Environmental Protection.

Section 5. PLANT-INCORPORATED PROTECTANTS

The registration, distribution and use of plant-incorporated protectants are subject to the following limitations and conditions:

A. **Definitions**

"Plant-incorporated protectant" means a pesticidal substance that is intended to be produced and used in a living plant, or in the produce thereof, and the genetic material necessary for the production of such a pesticidal substance.

B. **License Required**

No person shall distribute any plant-incorporated protectant without either a general use pesticide dealer license or a (restricted or limited use) pesticide dealer license from the Board.

C. **Dealer Requirements**

Dealers distributing plant-incorporated protectants are subject to the following requirements:

- I. General use and (restricted or limited use) pesticide dealers shall notify the Board of their intent to distribute plant-incorporated protectants on all initial license and license renewal application forms provided by the Board.
- II. General use and (restricted or limited use) pesticide dealers shall maintain sales records showing the list of the names and addresses of all purchasers of plants, plant parts or seeds containing plant-incorporated protectants. These records must be made available to representatives of the Board for inspection at reasonable times, upon request, and must be maintained for two calendar years from the date of sale.
- III. Any general use and (restricted or limited use) pesticide dealer who discontinues the sale of plant-incorporated protectants shall notify the Board in writing and shall provide the Board, upon request, with all records required by Section 5(C)II of this chapter.

D. Grower Requirements

- I. All users of plant-incorporated protectants shall maintain the records listed below for a period of two years from the date of planting. Such records shall be kept current by recording all the required information on the same day the crop is planted. These records shall be maintained at the primary place of business and shall be available for inspection by representatives of the Board at reasonable times, upon request.
 - a. Site and planting information, including town and field location, a map showing crop location and refuge configuration in relation to adjacent crops within 500 feet that may be susceptible to cross-pollination;
 - b. Total acres planted with the plant-incorporated protectant and seeding rate;
 - c. Total acres planted as refuge and seeding rate;
 - d. Detailed application information on any pesticide applied to the refuge as described in Section 1(A) of Chapter 50, "Record Keeping and Reporting Requirements"; and
 - e. Planting information for each distinct site including:
 - i. date and time of planting; and
 - ii. brand name of the plant-incorporated protectant used.
- II. There are no annual reporting requirements for growers.

E. Product-Specific Requirements

- I. Requirements for plant-incorporated protectants ~~corn containing Bacillus thuringiensis (Bt) protein and the genetic material necessary for its production.~~
 - a. Prior to planting plant-incorporated protectants ~~corn containing any Bacillus thuringiensis (Bt) protein and the genetic material necessary for~~

~~its production~~, the grower must have completed a Board-approved training course available on-line, pass an exam, and acquire an appropriate and possess a valid product-specific training certificate.

- b. ~~Product specific training certificates shall be issued following each Board approved session. The certificates will remain valid until December 31 of the third year after issuance.~~
 - eb. ~~Non-Bt corn plant-incorporated protectant~~ growers whose crops are or will be located within 500 feet of a prospective ~~Bt corn plant-incorporated protectant~~ planting site can request that the ~~Bt corn plant-incorporated protectant~~ grower protect the non-~~Bt corn plant-incorporated protectant~~ crop from pollen drift.
 - i. the request must be made prior to planting of the ~~Bt corn plant-incorporated protectant~~ crop;
 - ii. the request must identify the non-~~Bt corn plant-incorporated protectant~~ crop to be protected; and
 - iii. the growers may agree on any method for protection but, if an agreement cannot be reached,
 - 1. If a refuge is required, the Bt corn plant-incorporated protectant grower must plant any refuge required by the - Bt corn plant-incorporated protectant grower agreement, grower guide, seed agreement or product label in a configuration that provides maximum protection from pollen drift onto the adjacent non-Bt corn plant-incorporated protectant crop; or
 - 2. if no refuge is required, the Bt corn plant-incorporated protectant grower shall maintain at least a 300-foot Bt plant-incorporated protectant corn-free buffer to non-Bt corn plant-incorporated protectant crops.
 - dc. ~~Bt corn plant-incorporated protectant~~ growers are encouraged to follow all best management practices developed by the Board or the Department of Agriculture, Conservation and Forestry.
- II. Dealers distributing ~~Bt plant-incorporated protectant~~ sweet corn shall only sell the seed in quantities large enough to plant one acre or more.

F. Confidentiality

Any person providing information to the Board in connection with the record-keeping and reporting requirements of Section 5 of this chapter may designate that information as confidential in accordance with 7 M.R.S.A. §20.

Section 6. NEONICOTINOIDS (DINOTEFURAN, CLOTHIANIDIN, IMIDACLOPRID, OR THIAMETHOXAM)

The registration of pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam for which there is an outdoor ornamental plant or turf use on the product label shall be subject to the following limitations and conditions.

A. Definitions

- I. “Emerging Invasive Invertebrate Pests” means any invertebrate, including its eggs or other biological material capable of propagating that species that occurs outside of its eco-region and its introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health, to include:
 - a. Species both known now and unknown now but showing up at a later date;
 - b. Species that occur outside of their eco-region (level III) as defined by EPA; and
 - c. Species on a Board approved list.
- II. “Ornamental Plants” means-shrubs, trees and related vegetation excluding turf and lawn, in and around residences.

B. Board Publication of Product List

The Board of Pesticides Control will publish within 30 days of adoption and by March 15th of each year thereafter a list of insecticide products containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam registered in Maine for which the manufacturer has verified that there is an outdoor ornamental plant or turf use on the pesticide label. Based on available information, the Board may exempt from this list pesticides that it determines are not for use in the control of invertebrate pests on outdoor ornamental plants or turf. Pesticides labeled solely for use in preserving wood, managing indoor pests, managing structural pests within five (5) feet of a human dwelling, and treating pets are specifically exempt from this list.

C. Licenses Required

- I. No person shall purchase, use, or supervise the use of any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam identified on the Board's annual listing unless they have obtained a private or commercial pesticide applicator's license from the Board.
- II. Unless exempted under Chapter 41, Section 6 (C) (IV) no person shall purchase, use or supervise the use of any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam in outdoor residential landscapes to include ornamental plants and turf.

- III. No person shall distribute any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam identified on the Board's annual listing without a restricted use pesticide dealer's license from the Board.
- IV. Registered pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam and identified on the Board's annual listing are exempt from the prohibition of use described in Chapter 41, Section 6 (C) (II) where by:
 - a. The applicator obtains an emergency permit from the Board; or
 - b. The use of these products is for management of emerging invasive invertebrate pests on ornamental plants in outdoor residential landscapes.
- V. No person shall use any pesticides containing dinotefuran, clothianidin, imidacloprid, or thiamethoxam identified on the Board's annual listing for the purposes of managing turf and lawn in outdoor residential landscapes.

D. Records and Reporting

Dealers distributing any pesticides containing dinotefuran, clothianidin, imidacloprid or thiamethoxam identified on the Board's annual listing shall keep records of such sales and provide reports to the Board as described for restricted use pesticides in Chapter 50, "Record Keeping and Reporting Requirements."

E. Emergencies

The Board's staff may grant an emergency permit authorizing neonicotinoid use in compliance with Sections 6(C) of this chapter if the restrictions in this chapter prevent efficacious application of pesticide(s) and the staff determines that an emergency situation exists as outlined in Chapter 51(VII)(B)(1).

- I. No variance may be granted if the emergency is the result of an unjustifiable delay created by the person seeking the variance or the person requesting the pesticide application.
- II. If the staff does not grant the variance, the applicator or the person requesting the pesticide application may petition the Board for exemption following the requirements set forth in 22 M.R.S.A. §1471-T, "Exemption".

F. Emergency Use Permits

Emergency use permit applications shall be made on such forms as the Board provides and shall include at least the following information:

- I. The name, address and telephone number of the applicant;
- II. The area(s) where pesticides will be applied;
- IV. The purpose for which the pesticide application(s) will be made;
- V. The approximate application date(s);

- VI. The type(s) of application equipment to be employed;
- VII. The approved pest species for which the application is being made as defined in policy or by the board; and
- VIII. The particular reasons why the applicant seeks a variance from the requirements of this section, including a detailed description of the techniques to be employed to assure that a reasonably equivalent degree of protection of surrounding nontarget vegetation will be obtained.

Within 30 days after a complete application is submitted, the Board or its staff shall issue a permit if it finds that the application meets requirements of Section 6 (E). The Board may place conditions on any such permit, and the applicant shall comply with such conditions. Except as required by the permit, the applicant shall undertake the application in accordance with all of the conditions described in their request and all other applicable legal standards. Permits issued by the Board under this section shall not be transferable or assignable except with further written approval of the Board and shall be valid only for the period specified in the permit.

Section 7. CHLORPYRIFOS (DURSBAN, LORSBAN)

The registration of chlorpyrifos (Dursban, Lorsban) is subject to the following limitations and conditions.

- A. No person shall use or supervise the use of any pesticide containing the active ingredient chlorpyrifos unless they have obtained a private or commercial applicator's license from the Board, possess the pesticide in the State before January 1, 2022, and obtain a temporary use authorization permit from the Board.
- B. Permit applications shall be made on such forms as the Board provides and shall include at least the following information:
 - I. The name, address and telephone number of the applicant;
 - II. The brand name of the pesticides to be applied;
 - III. The date on which the pesticides were purchased;
 - IV. The approximate quantity of the pesticides possessed;
 - V. The purpose for which the pesticide application(s) will be made; and
 - VI. The duration for which the applications will take place or until the product is gone.
- C. Within 30 days after a complete application is submitted, the Board or its staff shall issue a permit if:
 - I. The permit application is received prior to December 31, 2022;

- II. The applicant possesses a valid pesticide applicator license issued by the State;
- III. The pesticides proposed for use were purchased prior to January 1, 2022;

The Board may place conditions on any such permit, and the applicant shall comply with such conditions. Except as required by the permit, the applicant shall undertake the application in accordance with all of the conditions described in their request and all other applicable legal standards. Permits issued by the Board under this section shall not be transferable or assignable except with further written approval of the Board and shall be valid only for the period specified in the permit.

STATUTORY AUTHORITY:

5 M.R.S.A. §§ 8051 *et seq.*

7 M.R.S.A. §§ 601-610

22 M.R.S.A. §§ 1471-A, 1471-B, 1471-C, 1471-D, 1471-M

EFFECTIVE DATE:

March 8, 1981 (Captan)

AMENDED:

May 7, 1981 (Trichlorfon)

January 2, 1984 (Aldicarb)

May 8, 1988 (Trichlorfon)

August 5, 1990 (Captan)

August 17, 1996 (Hexazinone)

October 2, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):

March 1, 1997

AMENDED:

May 7, 1997 - Section 3(B)(II)

CONVERTED TO MS WORD:

March 11, 2003

AMENDED:

May 12, 2003 - Section 4 added

NON-SUBSTANTIVE CORRECTIONS:

June 24, 2003 - summary only

AMENDED:

February 2, 2004 - Section 4, 1st paragraph and sub-section A, filing 2004-31

April 30, 2007 – filing 2007-154

February 3, 2008 – filing 2008-36

July 16, 2009 – filing 2009-253 (final adoption, major substantive)

May 3, 2012 – filing 2012-99 (final adoption, major substantive)

CORRECTIONS:

February, 2014 – agency names, formatting

AMENDED:

December 9, 2014 – Section 3, filing 2014-283

September 20, 2022 – filing 2022-181



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

BOARD OF PESTICIDES CONTROL

July 21, 2023

9:00 AM Board Meeting

MINUTES

Adams, Bohlen, Carlton, Ianni, Jemison, Lajoie

1. Introductions of Board and Staff

- The Board, Assistant Attorney General Randlett, and Staff introduced themselves

2. Minutes of the June 9, 2023 Board Meeting

Presentation By: John Pietroski, Acting Director
Action Needed: Amend and/or approve

- **Jemison/Lajoie: Moved and seconded to approve the minutes as amended**
- **In Favor: Unanimous**

3. Policy for Distribution of Adjuvant Products

LD 2019 “An Act To Require the Registration of Adjuvants in the State and To Regulate the Distribution of Pesticides with Perfluoroalkyl and Polyfluoroalkyl Substances” was approved by the Maine legislature in 2022. Dealers and growers have approached staff regarding the ability to use adjuvant products that were in their possession prior to or after the effective date of August 8, 2022. Staff are seeking guidance on enforcement discretion regarding this issue.

Presentation By: John Pietroski, Acting Director
Action Needed: Provide guidance to staff on distribution of adjuvants

- Pietroski stated that the law went into effect in August 2022 and staff began registering adjuvant products in 2023. Staff is seeking guidance on whether or not distributors can sell products that were purchased in 2022 and have proposed a policy. The policy would allow dealers to sell adjuvants that were in inventory to end users until the stock is

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depleted. Pietroski explained that adjuvants were now considered pesticides in the state of Maine and were required to be registered. He stated there had been concerns voiced by growers and dealers who have these products in stock.

- Tomlinson stated that Chapter 20 only applied to pesticide products that had been previously registered and there was not a preceding requirement of adjuvant registration. She added that this would be an exception to allow for a transition year.
- The Board discussed the pros and cons of the proposed policy and which products should be included under the definition of adjuvants. The Board decided that to be consistent with other pesticide distribution they would allow the regulated community to use the adjuvants that were already in stock.
- There was Board discussion about the registration of adjuvants with PFAS.
- Adams stated that there was confusion among the regulated community and a lot more outreach and education were required.
- Pietroski stated that staff could staff prepare a list of which products were registered and which were not for the next meeting.
 - **Carlton/Jemison: Moved and seconded to approve the proposed policy**
 - **In Favor: Unanimous**

4. LD 1770 Sales & Use Reporting

At the May 10, 2023 work session the Agriculture, Conservation and Forestry Committee voted this bill ought to pass as amended as a resolve directing the Board to act to enter into rulemaking to require applicators and dealers to submit their annual use reports electronically.

Presentation By: John Pietroski, Acting Director
Action Needed: Discussion

- Pietroski said that staff needed guidance on how to move forward.
- Patterson told the Board that this was an amendment from a previous reporting bill and there was still some work to do. She added that if the Board had thoughts about how to improve the current system to please let staff know.
- Bryer asked the Board if they had an idea of a timeline for when applicators could comply with this requirement.
- Bohlen noted that one issue to recognize was that there was a requirement for a report in March 2024 and that report may just state what progress had been made.
- Adams stated that wording may need to be added that there would be a period of time that staff would need to be actively educating the community.
- The Board would like to return to this topic at the October meeting.

5. Review and Discussion of Potential Rulemaking Topics

At the January 11, 2023 meeting the Board expressed interest in initiating rulemaking to incorporate existing Board policy and other potential rulemaking topics. At the February 24, 2023 Board meeting, the Board discussed several rulemaking topics that had been identified by staff. At the March 25, 2023 Board meeting, the Board narrowed the rulemaking initiatives to more urgent

items that needed to be addressed in rule. At the April 7, 2023 Board meeting, the Board discussed interest in moving forward with rulemaking concepts, but decided to postpone rulemaking until the legislature had adjourned given that some additional rulemaking initiatives were likely to pass. Staff have compiled the Board's responses to rulemaking concepts that had interest in moving forward in addition to a timetable of possible hearing dates for Board consideration. The Board will need to vote to move rulemaking forward to initiate this process. *Note: No public comments on rulemaking are being accepted at this time.*

Presentation By: Karla Boyd, Policy & Regulations Specialist

Action Needed: Discuss rulemaking concepts and possibly vote to schedule a hearing

- Boyd stated that the associated documents included the same four items that the Board had previously reviewed and included timelines for routine technical and major substantive rulemaking. She added that the first topic was regarding the responsibilities of applicators to determine the correct property.
- Adams responded that suspension of commercial licensure had been suggested and should be added to the language. He added that there should be serious consideration regarding firm license suspension for multiple offenses.
- Randlett stated that the Board would need to initiate a hearing for a license suspension. The licensee would be able to present other evidence and it would be up to the Board whether to suspend the license and that decision would be open to further appeal to a court.
- Bohlen asked if it would make a difference if there was a concrete trigger, for example, three violations in five years.
- Randlett agreed that that would be more concrete and give staff a guideline for when to trigger the process. He added that once the Board decided suspension was appropriate and moved forward then a suspension would go into effect immediately. The individual would have a right to request a sooner hearing before the Board.
- Randlett stated he had some draft language for this. It would be added to Chapter 20 as a new subsection in section 7. Suggested wording could be that 'x' number of violations of Chapter 20 Section 7 within 'x' period of time would be grounds for suspension of the applicator's and/or master's license or certificate in accordance with 22 MRSA §1471 D7.
- Adams suggested that for a first offense the operator license would be suspended, for a second offense in a five-year period the master license would be suspended, and for a third violation in a five-year period the firm license would be suspended.
- Randlett told the Board that the limit for suspension was 45 days from the receipt of notice of suspension. He stated that he thought if the Board wanted to go longer than 45 day they would need to file a complaint with district court but he needed to look into this a little more. Randlett stated that the Board could also choose to impose gradients under 45 days for suspensions.
- Boyd explained that the next item was housekeeping to combine the three current 7C license categories into one. She added that there was a new manual that covered all categories and the language added to Chapter 31 was for category description and competency standards.
- The Board approved of this item.
- Boyd stated that the next item was required by the EPA for the state certification and training plan. She noted that there would be future rulemaking that needed to be completed regarding the plan. This item would incorporate by reference 40 CFR § 171.201 requirements for noncertified applicators and their supervision by certified applicators.
- Boyd told the Board that the last item was related to plant incorporated protectants in Chapter 41, Section 5.

- Bohlen noted that there were language inconsistencies that needed to be cleaned up, specifically the mentions of plant incorporated protectants and of *Bt* corn. He stated that in Section E1 he thought the language was being changed to read as plant incorporated protectants because there was new technology on the horizon that may fall under this section.
- Jemison stated that he intended that individuals would only be required to complete one initial training and there was not a need to continue the continuing education training. He explained that the reason the Board had initially required follow-up trainings was because the planting of *Bt* corn used to be a complicated process but that had changed. Jemison suggested that a training certificate be issued after successful completion of the online training and exam.
- Boyd asked if the last sentence about the certificate remaining valid should be removed.
- Jemison stated that it should.
- Bohlen commented that under E(c)3 there were sections one and two that spoke about whether refuge was required or not and that the wording needed to be specific because it was ambiguous regarding where that requirement was coming from.
- Adams and Jemison stated that it would be required by the seed agreement.
- Patterson suggested leaving the language to refer to plant-incorporated-protectants, rather than just *Bt* corn, in case of future crops that the Board wanted prohibitions placed on.
- Bohlen stated that part of it seemed corn related because of the plant back distances due to wind pollination and that that language would not be needed with beans or other crops.
- There was discussion about the schedule for rulemaking. The Board decided on September 1 for the hearing.
 - **Carlton/Jemison: Moved and seconded to enter rulemaking**
 - **In Favor: Unanimous**

6. Maine State Certification and Training Plan for EPA

Update on continued efforts to receive EPA approval for Maine's Certification and Training Plan and implications of not receiving approval.

Presentation By: John Pietroski, Acting Director
 Action Needed: Discussion

- Pietroski stated that all states, tribes and territories needed to have an EPA-approved certification and training plan in place by September 2023. He added that they were hoping to have an answer in two weeks regarding whether the plan was approved.
- Ianni asked about the areas of concern.
- Patterson explained what could be in jeopardy if the state plan was not approved. These included the ability to register restricted-use pesticides, the loss of two pesticide inspectors, half of the salary of the certification and licensing specialist, water quality funding, and commercial and applicator certification abilities.

7. Consideration of a Consent Agreement with Starbucks Bangor, Maine

On June 3, 1998, the Board amended its Enforcement Protocol to authorize staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases

where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involved an unlicensed application and use of a pesticide inconsistent with its label.

Presentation By: Alex Peacock, Manager of Compliance
Action Needed: Review and/or Approve

- Peacock stated that the establishment had a fruit fly problem and the manager decided more mitigation was needed and discharged a fogger after the café had closed. Upon leaving a contractor showed up to do work in the building and the manager opened the building, removed the fogger and attempted to air out the premises which caused the fire alarm to sound and the Bangor Fire Department to respond. The Health Inspection Program notified BPC that pesticides had been used by an unlicensed individual. The product label also mandated a restricted entry interval of four hours.

- **Lajoie/Jemison: Moved and seconded to approve the consent agreement**
- **In Favor: Unanimous**

8. Consideration of Consent Agreement with Amelia and Arthur Bond of St. Louis, MO

On June 3, 1998, the Board amended its Enforcement Protocol to authorize staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involved an unauthorized application, use of a pesticide inconsistent with the label and use of a pesticide in a negligent manner.

Presentation By: Alex Peacock, Manager of Compliance
Action Needed: Review and/or Approve

- Peacock stated that a homeowner noticed that their oak trees were declining and called their arborist who found that an herbicide had been used. BPC staff also took samples and received the same results. He added that the property was located very near to the water and there was a public beach right next door. The individual stated they applied an herbicide with the active ingredient tebuthiuron to the oak trees because they believed them to be dying. The label language stated that this product was not for residential use and was only for use in rangelands. Peacock stated that the material could stay active in soil for up to ten years and that the trees and the soil down to the bedrock would need to be removed.
- Ianni asked if staff had knowledge regarding the migration of this active ingredient into ground and marine water. She asked if further testing was required and commented that the fine amount was not sufficient to cover testing costs if it was needed.
- Peacock stated that the town of Camden was very interested in further monitoring the effects.
- Jeremy Martin, the Planning and Development Director and Code Enforcement Officer for Camden, said the town was concerned about down gradient movement of the herbicide especially since there was a public park and public beach down gradient. He added that the soil and trees had been removed. The town had not yet come up with a consent agreement, but Martin noted the cost would be about \$30,000 for environmental monitoring on Laike beach.

- **Lajoie/Carlton: Moved and seconded to approve the consent agreement**
- **In Favor: Unanimous**

9. Other Old and New Business

- a. Email From Chantal Longo-Guess
- b. LD 258- “An Act Making Unified Appropriations and Allocations from the General Fund and Other Funds for the Expenditures of State Government and Changing Certain Provisions of the Law Necessary to the Proper Operations of State Government for the Fiscal Years Ending June 30, 2023, June 30, 2024 and June 30, 2025”
 - The Board members asked how this would change the budget.
 - Pietroski said staff could bring back an updated spreadsheet.
- c. EPA Press Release, July 13, 2023: “EPA Requires Additional Mitigation Measures for Seresto Pet Collars”

10. Schedule of Future Meetings

September 1, October 13, and December 1 are the next scheduled Board meeting dates. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

10. Adjourn

- **Jemison/Bohlen: Moved and seconded to adjourn at 11:20 AM**
- **In Favor: Unanimous**



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COMMISSIONER

BOARD OF PESTICIDES CONTROL

Emergency Meeting

July 27, 2023

4:15 PM Board Meeting

MINUTES

1. Introductions of Board and Staff

- Adams, Bohlen, Carlton, Jemison, Lajoie

2. Review and Approve Rulemaking Amendments

During the July 21, 2023 meeting of the Board, the Board voted to initiate rulemaking and set a public hearing date of September 1, 2023 in compliance with the APA [5 MRSA sec. 8001 through 11116](#). In the Board discussion, a date was not set for Chapter 20, Section 7(A)(5) for submission of proper identification of treatment sites from applicators of spray contracting firms. A date needs to be included in the language by July 31, 2023 to meet the APA deadlines for submission of documentation to the Secretary of State for proper posting. Additionally, language was added to clarify that the Board is not prohibited from seeking license or certification revocation under Chapter 20, Section 7. Staff need additional approval to meet the hearing date of September 1, 2023.

Presentations By: John Pietroski, Acting Director

Action Needed: Discuss and approve rulemaking amendments

- Pietroski explained that a date needed to be added and went over language added by Randlett regarding license revocation. He stated that staff would need time to do outreach to give the regulated community time to comply.
- Jemison asked when this rulemaking would be completed
- Boyd responded that comments were due by September 11 and the Board would review the comments at the October or December meeting. She stated that the longest it could take would be 150 days from the initial start, which would be in February 2024 but it may be completed sooner than that.

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- Jemison stated that it would hopefully be in place sooner since spraying would begin in southern Maine in April. He suggested beginning enforcement of the rule on March 1, 2024.
- The Board discussed this timeline.

- **Jemison/Bohlen: Moved and seconded to select March 1, 2024 as a date for the proposed rulemaking in Chapter 20**
- **In Favor: Unanimous**

- **Lajoie/Jemison: Moved and seconded to approve the additional language added for the proposed rulemaking in Chapter 20**
- **In Favor: Unanimous**

3. Adjourn

- **Jemison/Bohlen: Moved and seconded to adjourn at 4:28 PM**
- **In Favor: Unanimous**

**Maine Department of Agriculture, Conservation
and Forestry**

Board of Pesticides Control

State of Maine Certification Plan

**United States Environmental Protection Agency
Federal Regulations 40 CFR Part 171**

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INTRODUCTION

This State Plan is in response to the Environmental Protection Agency (EPA) federal revision to the Code of Federal Regulations (CFR), Certification of Pesticide Applicators 40 CFR 171 as outlined in the Federal Register, Vol. 82, No. 2, dated January 4, 2017 (82 FR 952). The final rule became effective on March 6, 2017. This State Plan compares Maine's regulations and policies to the CFR to identify actions that the State of Maine must take to comply with federal standards. These actions include revisions in regulations.

On September 28, 1976, notice was published in the Federal Register (41 FR 42698) of the intent of the Regional Administrator, EPA Region 1, to approve on a contingency basis, the Maine State Plan for Certification of Pesticide Applicators. (Maine State Plan). Contingent approval was requested by the State of Maine pending promulgation of regulations necessary to permit Maine to carry out FIFRA responsibilities. On August 12, 1977, the EPA granted final approval to the Maine State Plan.

This State Plan was drafted by the Maine Department of Agriculture, Conservation and Forestry, Board of Pesticides Control (BPC). The BPC is Maine's lead agency for pesticide oversight. The BPC is attached to the Maine Department of Agriculture, Conservation and Forestry for administrative and staffing purposes. Policy decisions are made by a seven-member, public board. The seven members of the public board must include: three persons knowledgeable about pesticides in agriculture, forestry, or commercial applications; one person with medical background; and one who holds a faculty position at the University of Maine with expertise in Integrated Pest Management. The two remaining members are chosen to represent the public and must come from different geographic areas of the state. All members are nominated by the Governor and approved by the Legislature. The Board of Pesticides Control has pesticide rule-making authority.

As required for states that allow the use of restricted use pesticides, the plan includes descriptions of requirements for individuals handling such pesticides. Restricted Use Pesticides (RUPs) require a certification to purchase and apply. RUPs are defined by federal regulation as a “...*pesticide that is classified for restricted use under the provisions of section 3(d) of FIFRA and 40 CFR part 152, subpart I.*” The State of Maine adopts all federally restricted use pesticides as state-restricted, and can also establish greater use restrictions on pesticides than federal requirements.

SECTION 1. CERTIFICATION PLAN ADMINISTRATION

(a) STATE LEAD AGENCY DESIGNATION (GOVERNOR LETTER) AND POINT OF CONTACT

CFR 40 §171.303(b)(6)(i)

The state plan must include a written statement from the Governor designating the lead agency as responsible for administering the state plan. The plan must identify the State Lead Agency (SLA) that will have primary responsibility for submission and implementation of the state certification plan and for coordination with all other agencies or organizations that are involved in administering portions of the C&T Plan in the state. Provide the name, job title, email address, mailing address and phone number for the primary contact for the SLA for the certification plan.

State Response: The Board of Pesticides Control (BPC) is the lead agency for the regulation of all pesticides in Maine. The BPC is affiliated with the Maine Department of Agriculture, Conservation and Forestry for administrative and staffing purposes.



Janet T. Mills
GOVERNOR

STATE OF MAINE
OFFICE OF THE GOVERNOR
1 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0001

November 12, 2021

Deb Szaro, Acting Regional Administrator/Deputy Regional Administrator
United States Environmental Protection Agency Region 1
5 Post Office Square
Mail Code ORA 01-4
Boston, MA 02109

Nancy Barmakian, Director
Land, Chemicals, and Redevelopment Division
United States Environmental Protection Agency Region 1
5 Post Office Square
Mail Code LCRD 07-5
Boston, MA 02109

Dear Ms. Szaro and Ms. Barmakian:

Pursuant to CFR 40 §171.303(b)(6)(i), I hereby designate the Maine Department of Agriculture, Conservation and Forestry, Board of Pesticides Control as the lead agency responsible for administering the state certification plan and for the regulation of pesticides, including the certification and training of those who use and apply restricted use pesticides in the State of Maine.

Sincerely,



Janet T. Mills
Governor



PRINTED ON RECYCLED PAPER

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TTY USERS CALL 711
www.maine.gov

FAX: (207) 287-1034

State of Maine State Lead Agency (SLA)

SLA name: Board of Pesticides Control (BPC)
SLA primary contact name: Megan Patterson
SLA primary contact title: Division Director
Email address for SLA primary contact: megan.l.patterson@maine.gov
Phone number for SLA primary contact: (207) 287-2731
Mailing address for SLA primary contact: Maine Department of Agriculture,
Conservation and Forestry (MDACF)
Board of Pesticides Control
28 State House Station
Augusta, Maine 04333

OTHER AGENCIES AND CONTACTS

Cooperating agency name: University of Maine Cooperative Extension
Cooperating agency role: Pesticide Safety Education, applicator manual development, preparation, and review; educational sessions support, conduct pesticide exam training

Name of Primary Contact: Hannah Carter
Title of Primary Contact: Dean
Email address for primary contact: hcarter@maine.edu
Phone number for primary contact: (207) 581-3238
Mailing address for primary contact: University of Maine
Maine Cooperative Extension
5741 Libby Hall Room 102
Orono, Maine 04469-5741

Explanation of agency coordination process: The BPC (SLA), and the cooperating agency, University of Maine Cooperative Extension (UMCE), work closely together to develop programs for pesticide license recertification credits, conduct pesticide exam training, and to write, edit, and select appropriate pesticide applicator exam study manuals and other related materials.

(c) QUALIFIED PERSONNEL

40 CFR §171.303(b)(6)(iii)

The state plan must provide a list of qualified personnel including number of staff, job titles and job functions of the SLA staff involved in the applicator certification program, and the staff of all cooperating agencies or organizations involved in the applicator certification program.

State Response: Table 1 is the BPC Staffing Summary. A complete list of 2022 State of Maine BPC staff currently holding these positions is found in Attachment 1C1; 2022 Board of Pesticides Control Staff. The 2022 Public Board Members is found in Attachment 1C2.

Table 1. Staffing Summary, Board of Pesticides Control
SLA Personnel Dedicated to the Certification Program

Position Title	Function	Full Time Employees
Director	Rulemaking, Special Projects, Legislation, General Information, Board Meetings, Variances	0.5
Manager of Compliance	Complaints/Incidents, Enforcement, Pesticide Disposal	0.25
Manager of Pesticide Programs	Licensing, Recertification Programs, Exams, Federal Grants, Pesticide Use	1
Toxicologist	Food Safety, Health Issues, Pesticide Labels, Pesticide Risks and Human Health	0.25
Registrar	Pesticide Registrations, Pesticide Labeling, Emergency Registration, Special Local Needs Registration, Experimental Use Permits, Limited Use Permits	0
Water Quality Specialist	Water Quality, Endangered Species.	0
Policy & Regulations Specialist	Rulemaking, BPC Portal, BPC Website, Got Pest Website, Yardscaping, School IPM	0.5
Certification & Licensing Specialist	Licensing, Recertification Programs, Exams, Manuals Worker Protection Standards, Pesticide Use	1
Office Manager	General Information, Licensing Information, Exam Scheduling, Accounts, Applicator Licenses	0.75
Licensing Clerk	Applicator/Dealer Licenses, Recertification Credits, Pesticide Sales and Use Data, Exam Scheduling	1
Inspector	District 2, Central Coastal Maine	0.25
Inspector	District 1, Southern Maine	0.25
Inspector	District 3, Downeast Maine	0.25
Inspector	District 4, Central Inland Maine	0.25
Inspector	District 5, Northern Maine	0.25

Table 2. Staffing Summary, University of Maine Cooperative Extension Contributors		
Position Title	Function	Full Time Employees
Dean	Maine Cooperative Extension	1
Pesticide Safety Education Professional and Manual Writer	Worker Protection Standards, Manual Writing, and Review, Educational Programs	1
IPM Coordinator University of Maine	IPM in Crops, Schools, Pests	1

Table 3. Department of Agriculture, Conservation and Forestry Contributors		
Position Title	Function	Number of Full Time Employees
IPM Coordinator	Maine Department of Agriculture, Conservation and Forestry IPM Coordinator, Educational Programs	1
State Apiarist	Pollinator Protection, Hive Protection	1
Plant Health Entomologist	Insect Identification	1
Horticulturist	Hemp, Invasive Species, Educational Programs	1
Plant Health Specialist	Plant Health Specialist, Educational Programs	1
Forest Entomologist	Forest Health, Insect Identification, Educational Programs	1

(d) SUFFICIENT RESOURCES

40 CFR §171.303(b)(6)(iv)

The state plan must include a statement affirming the commitment of the lead agency and cooperating agencies/organizations to ensure they'll have sufficient resources to carry out the program as outlined in their plan.

State Response: The State of Maine has sufficient federal and state resources to carry out the program.

State Affirmation Statement - The State of Maine is committed to ensuring there are sufficient resources available to carry out the applicator certification program as detailed in this State Certification Plan. The state statutes and regulations below describe the state's regulatory commitment; particularly the establishment of regulations to manage restricted use pesticides, regulations establishing the Board of Pesticides Control, rulemaking authority, enforcement authority, and state product registration. Title 7: Chapter 103, Subchapter 2-A, §607.

(e) JURISDICTION

40 CFR §171.301(a)

A certification issued under the EPA-approved [SLA] certification plan is valid within [state/tribal] legal boundaries, excluding areas of Indian country as defined at 18 U.S. Code § 1151 and 40 CFR 171.3.

State Response: Maine has environmental regulatory authority and jurisdiction statewide, including in Indian country, for all environmental regulatory purposes, including for the purposes of carrying out all functions of the State of Maine Certification Plan prepared for the United States Environmental Protection Agency in accordance with 40 C.F.R. § 171.303.

§6204. Laws of the State to apply to Indian Lands

Except as otherwise provided in this Act, all Indians, Indian nations, and tribes and bands of Indians in the State and any lands or other natural resources owned by them, held in trust for them by the United States or by any other person or entity shall be subject to the laws of the State and to the civil and criminal jurisdiction of the courts of the State to the same extent as any other person or lands or other natural resources therein. [PL 1979, c. 732, §§ 1, 31 (NEW).]

SECTION 2. LEGAL AUTHORITIES

(a) WRITTEN OPINION - Attorney General

40 CFR §171.303(b)(6)(iv)

The state plan must include a written opinion from the state attorney general or from the legal counsel of the SLA that states that the lead agency and other cooperating agencies have the legal authority necessary to carry out the state certification plan.

State Response: A written statement from the State of Maine Assistant Attorney General designating the BPC as the lead agency in the State of Maine for the regulation of pesticides. The powers given the Board by those statutes include, *inter alia*, broad authority including legal authority necessary to carry out the state certification plan.

AARON M. FREY
ATTORNEY GENERAL



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CARIBOU, MAINE 04736
TEL: (207) 496-3792
FAX: (207) 496-3291

November 1, 2019

Megan Patterson, Director
Maine Board of Pesticides Control
28 State House Station
Augusta, Maine 04333-0028

Re: **Legal authority of the Board of Pesticides Control**

Dear Director Patterson:

You have requested that I provide a written opinion that the Maine Board of Pesticides Control has the legal authority to carry out all of the functions of the State of Maine Certification Plan prepared for the United States Environmental Protection Agency in accordance with 7 C.F.R. § 171.303. I am pleased to give such an opinion based on my review of the State Plan, as well as my knowledge and review of Maine pesticide statutes and regulations.

Pursuant to 7 M.R.S. Chapter 103, subchapter 2-A and 22 M.R.S. Chapter 258-A, the Board is established as the lead agency in the State of Maine for the regulation of pesticides. The powers given to the Board by those statutes include, *inter alia*, broad authority to: establish and enforce standards for the certification of pesticide applicators; establish standards for the issuance and renewal of licenses of pesticide dealers; register pesticides for use in this State; place limitations, conditions and restrictions on the use of pesticides in this State; impose reporting requirements; enforce violations of pesticide laws; adopt such rules as are necessary to carry out its statutory powers; to suspend or revoke the certification of any applicator for violations of the pesticide laws; and to impose penalties for pesticide law violations either through administrative consent agreements or by court order. Exercising its authority, the Board has adopted extensive rules to fully implement the pesticide laws, specifically tailoring those rules to comply with federal pesticide standards where necessary.

Therefore, it is my opinion that the Maine Board of Pesticides Control has the requisite legal authority to carry out the State Certification Plan.

Please let me know if you need anything else from me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark A. Randlett", written over a horizontal line.

Mark A. Randlett
Assistant Attorney General

(b) LAWS AND REGULATIONS – State of Maine Statutes and Rules

40 CFR §171.303(b)(7)

The state plan must include a complete copy of all state laws and regulations relevant to the certification plan.

State Response:

A copy of all the state laws and regulations relevant to the certification plan are as follows:

- Attachment 2B1, (Title 7 M.R.S., Chapter 103, subchapter 2-A)
- Attachment 2B2, (Title 22 M.R.S., Chapter 258-A) and
- Attachment 2B3, (22 M.R.S.A., Chapter 258-A, Chapter 10 Definitions, and Terms).

Link to Title 7: <http://www.mainelegislature.org/legis/statutes/7/title7sec601.html>

Link to Title 22: <http://www.mainelegislature.org/legis/statutes/22/title22ch0sec0.html>

Link to Regulations: <https://www.maine.gov/dacf/php/pesticides/laws.shtml>

Abbreviation	Definition
aff	affected
amd	amended
cor	corrected
new	enacted
ral	reallocated
rnu	renumbered
rp	repealed
rpr	repealed and replaced
RR	Revisor's Report

(c) PROVISIONS FOR GROUNDS FOR DENYING, SUSPENDING, OR REVOKING A CERTIFICATION

40 CFR § 171.303(b)(7)(i)

The state plan must include the citation to the specific state laws and regulations that demonstrate specific legal authority for provisions for and listing of the acts which would constitute grounds for denying, suspending, or revoking a certification. At a minimum, include misuse of a pesticide, falsifications of records required to be maintained by the certified applicator, a criminal conviction under section 14(b) of FIFRA, a final order imposing civil penalty under section 14(a) of FIFRA, and conclusion of a State enforcement action for violations of State laws or regulations relevant to the State Certification Plan.

State Response: The citation is 22 M.R.S. §1471-D.

22 M.R.S. §1471-D (7). Certification and licenses

7. Suspension

- A. If the board determines that there may be grounds for revocation of a license or certificate, it may temporarily suspend said license or certificate pending inquiry and opportunity for hearing, provided that such suspension shall not extend for a period longer than 45 days. [1975, c. 397, §2 (NEW).]
- B. The board shall notify the licensee or certificate holder of the temporary suspension, indicating the basis therefor and informing the licensee or certificate holder of the right to request a public hearing. [1983, c. 819, Pt. A, §47 (AMD).]
- C. If the licensee or certificate holder fails to request a hearing within 20 days of the date of suspension, such right shall be deemed waived. If the licensee or certificate holder requests such a hearing, notice shall be given at least 20 days prior to the hearing to the licensee or certificate holder and to appropriate federal and state agencies. In addition, public notice shall be given by publication in a newspaper of general circulation in the State and such other publications as the board deems appropriate. [1983, c. 819, Pt. A, §48 (AMD).]
- D. This subsection is not governed by the provisions of Title 4, chapter 5 or Title 5, chapter 375. [1999, c. 547, Pt. B, §39 (AMD); 1999, c. 547, Pt. B, §80 (AFF).] [1999, c. 547, Pt. B, §39 (AMD); 1999, c. 547, Pt. B, §80 (AFF).]

Maine Rules-Suspension

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL

APPLICATORS, Section 6, G,

Reports. Annual Summary Reports described in Chapter 50, Section 2(A) must be submitted for each calendar year by January 31 of the following year. In the event a required report is not received by the due date, the person's license is temporarily suspended until the proper report is received or until a decision is rendered at a formal hearing as described in 22 MRSA §1471-D (7)

APPLICATORS, Section 6, H, Expiration

III. Also, all licenses within a company/agency are suspended if the licensed Master is terminated from employment or dies.

Chapter 34: CERTIFICATION AND LICENSING PROVISIONS/PESTICIDE

DEALERS, Section 5, A,

Each dealer shall be responsible for the acts of those people in his/her employ and the dealer's license shall be subject to denial, suspension or revocation for any violation of the statute or regulations, whether committed by the dealer, his/her office, agent, employee, or other person acting in concert or participation with him/her.

Chapter 35: CERTIFICATION AND LICENSING PROVISIONS / SPRAY

CONTRACTING FIRMS, Section 3, D

Reports. Annual Summary Reports described in Chapter 50, Section 2(A) must be submitted for each calendar year by January 31 of the following year. In the event a required report is not received by the due date, the person's license is temporarily suspended until the proper report is received or until a decision is rendered at a formal hearing as described in 22 MRSA §1471-D (7).

Chapter 35: CERTIFICATION AND LICENSING PROVISIONS / SPRAY
CONTRACTING FIRMS, Section 3, F

Refusal to Renew. The Board may refuse to renew a license if it is not in accordance with any of the requirements hereof or if the Board makes, as to the licensee, any of the findings set forth in 22 M.R.S.A. §1471-D (8), which describe the bases for a decision by the Administrative Court to suspend or revoke a license. If the Board determines that there is evidence sufficient to refuse to renew a license, it shall give notice and an opportunity for a hearing before the Board prior to making that determination final.

Chapter 35: CERTIFICATION AND LICENSING PROVISIONS / SPRAY
CONTRACTING FIRMS, Section 4, B

Each spray contracting firm shall be responsible for the acts of those people in its employ and its license shall be subject to denial, refusal to renew, suspension, or revocation, and such firm shall otherwise be punishable under the law, for any violation of the statutes or regulations, whether committed by the owner, chief officer, agent, employee or other person acting in concert or participation with it.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS, Section 2, A

Annual Summary Reports by Commercial Applicators. Annual summary reports must be submitted for each calendar year by January 31 of the following year. In the event a required report is not received by the due date, the person's license may be temporarily suspended until the proper report is received or until a decision is tendered at a formal hearing as described in 22 M.R.S.A. §1471-D(7). The report filed with the Board by or on behalf of commercial applicators shall contain the following information for each site or crop treated: quantity of each pesticide used, EPA registration number and total area treated (where applicable) for each pesticide.

Chapter 70: ADJUDICATORY PROCEEDINGS, Section 2, A, 5

The continuation of a temporary suspension of a license, certification or permit pursuant to 22 M.R.S.A. §1471-D(7)(C).

Maine Rules-Revocation

22 M.R.S. §1471-D (8). Certification and licenses

8. Revocation. The District Court may suspend or revoke the certification or license of a licensee or certificate holder upon a finding that the applicant:

- A. Is no longer qualified; [1975, c. 397, §2 (NEW).]
- B. Has engaged in fraudulent business practices in the application or distribution of pesticides; [1975, c. 397, §2 (NEW).]
- C. Used or supervised the use of pesticides applied in a careless, negligent, or faulty manner or in a manner which is potentially harmful to the public health, safety or welfare or the environment; [1975, c. 397, §2 (NEW).]
- D. Has stored, transported, or otherwise distributed pesticides in a careless, faulty, or negligent manner or in a manner which is potentially harmful to the environment or to the public health, safety, or welfare; [1975, c. 397, §2 (NEW).]
- E. Has violated the provisions of this chapter or the rules and regulations issued hereunder; [1975, c. 397, §2 (NEW).]

- F. Has made a pesticide recommendation, use or application, or has supervised such use or application, inconsistent with the labelling or other restrictions imposed by the board; [1975, c. 397, §2 (NEW).]
- G. Has made false or fraudulent records or reports required by the board under this chapter or under regulations pursuant thereto; [1981, c. 470, Pt. A, §67 (AMD).]
- H. Has been subject to a criminal conviction under section 14 (b) of the amended FIFRA or a final order imposing a civil penalty under section 14 (a) of the amended FIFRA; or [1981, c. 470, Pt. A, §67 (AMD).]
- I. Has had the license or certificate, which supplied the basis for the Maine license or certification pursuant to subsection 10, revoked or suspended by the appropriate federal or other state government authority. [1977, c. 694, §341 (NEW).]
 - i. [1983, c. 819, Pt. A, §49 (AMD); 1999, c. 547, Pt. B, §78 (AMD); 1999, c. 547, Pt. B, §80 (AFF).]

Maine Rules- Revocation

Chapter 35: CERTIFICATION AND LICENSING PROVISIONS / SPRAY CONTRACTING FIRMS, Section 3, F

Refusal to Renew. The Board may refuse to renew a license if it is not in accordance with any of the requirements hereof or if the Board makes, as to the licensee, any of the findings set forth in 22 M.R.S.A. §1471-D (8), which describe the bases for a decision by the Administrative Court to suspend or revoke a license. If the Board determines that there is evidence sufficient to refuse to renew a license, it shall give notice and an opportunity for a hearing before the Board prior to making that determination final.

Chapter 70: ADJUDICATORY PROCEEDINGS, Section 18, B, 4

Failure to comply with a subpoena lawfully issued in the name of the Board and not revoked or modified by the Board as provided in this section shall be punishable by a fine of not less than \$500 and not more than \$5,000, or by imprisonment not to exceed 30 days, or both.

(d) PROVISIONS FOR REVIEWING, SUSPENDING, OR REVOKING A CERTIFICATION

40 CFR § 171.303(b)(7)(ii)

The state plan must include the citation to the specific state laws and regulations that demonstrate specific legal authority for provisions for reviewing and where appropriate, suspending or revoking an applicator's certification based on the grounds listed in the plan (for denying, suspending, and revoking certification of applicators) or a criminal conviction under section 14(b) of FIFRA, a final order imposing civil penalty under section 14(a) of FIFRA, or conclusion of a State enforcement action for violations of State laws or regulations relevant to the State Certification Plan.

State Response: The citation is 22 M.R.S. §1471-D. 8. Revocation, Letter Q.

8. Revocation. The District Court may suspend or revoke the certification or license of a licensee or certificate holder upon a finding that the applicant:

- J. Is no longer qualified; [1975, c. 397, §2 (NEW).]
- K. Has engaged in fraudulent business practices in the application or distribution of pesticides; [1975, c. 397, §2 (NEW).]
- L. Used or supervised the use of pesticides applied in a careless, negligent, or faulty manner or in a manner which is potentially harmful to the public health, safety or welfare or the environment; [1975, c. 397, §2 (NEW).]
- M. Has stored, transported, or otherwise distributed pesticides in a careless, faulty, or negligent manner or in a manner which is potentially harmful to the environment or to the public health, safety, or welfare; [1975, c. 397, §2 (NEW).]
- N. Has violated the provisions of this chapter or the rules and regulations issued hereunder; [1975, c. 397, §2 (NEW).]
- O. Has made a pesticide recommendation, use or application, or has supervised such use or application, inconsistent with the labelling or other restrictions imposed by the board; [1975, c. 397, §2 (NEW).]
- P. Has made false or fraudulent records or reports required by the board under this chapter or under regulations pursuant thereto; [1981, c. 470, Pt. A, §67 (AMD).]
- Q. Has been subject to a criminal conviction under section 14 (b) of the amended FIFRA or a final order imposing a civil penalty under section 14 (a) of the amended FIFRA; or [1981, c. 470, Pt. A, §67 (AMD).]**
- R. Has had the license or certificate, which supplied the basis for the Maine license or certification pursuant to subsection 10, revoked or suspended by the appropriate federal or other state government authority. [1977, c. 694, §341 (NEW).]

[1983, c. 819, Pt. A, §49 (AMD); 1999, c. 547, Pt. B, §78 (AMD); 1999, c. 547, Pt. B, §80 (AFF).]

(e) PROVISIONS FOR ASSESSING CIVIL AND CRIMINAL PENALTIES

40 CFR § 171.303(b)(7)(iii)

The state plan must include the citation to the specific state laws and regulations that demonstrate specific legal authority for provisions for assessing criminal and civil penalties for violations of the laws and regulations relevant to the Certification Plan.

State Response: The complete citation is located in Attachment 2E1; 22 M.R.S. §1471-J 7 M.R.S. §616-A. Penalties

22 M.R.S. §1471-J. PENALTIES

A person who violates any provision of this chapter or any order, rule, decision, certificate or license issued by the board or commits any act constituting a ground for revocation, except acts punishable under section 1471-D, subsection 8, paragraphs A and H, commits a civil violation subject to the penalties established in Title 7, section 616-A. [1989, c. 841, §8 (AMD

SECTION HISTORY 1975, c. 397, §2 (NEW). 1975, c. 623, §26A (AMD). 1975, c. 770, §§91,92 (RPR). 1989, c. 841, §8 (AMD).

7 M.R.S. §616-A. Penalties

2-A. Criminal violation A person may not intentionally or knowingly violate this subchapter or Title 22, chapter 258-A, a rule adopted under this subchapter or Title 22, chapter 258-A or a restriction of a registration issued pursuant to this subchapter. A person who violates this subsection commits a Class E crime. Notwithstanding Title 17-A, section 1604, subsection 1 and sections 1704 and 1705, the court may impose a sentencing alternative of a fine of not more than \$7,500 or a term of imprisonment of not more than 30 days, or both, for each violation. Prosecution under this subsection is by summons and not by warrant. A prosecution under this subsection is separate from an action brought pursuant to subsection 2.

[PL 2019, c. 113, Pt. C, §1 (AMD).]

(f) PROVISIONS FOR RIGHT OF ENTRY FOR INSPECTIONS

40 CFR § 171.303(b)(7)(iv)

The state plan must include the citation to the specific state laws and regulations that demonstrate specific legal authority for provisions for right of entry by consent or warrant by State officials at reasonable times for sampling, inspection, and observation purposes.

State Response: The citation is 22 M.R.S. §1471-H.

22 M.R.S. §1471-H. INSPECTION

Upon presentation of appropriate credentials, the chair or any member of the board or any authorized employee or consultant of the board may enter upon any public or private premises at reasonable times for the purpose of inspecting any equipment, device or apparatus used in applying pesticides; inspecting storage and disposal areas; inspecting or investigating complaints of injury to persons or land from pesticides; observing the use and application of pesticides; sampling pesticides in use or storage; and sampling pesticide residues on crops, foliage, soil, water or elsewhere in the environment. Upon denial of access to the board or its agents, the board or its agents may seek an appropriate search warrant in a court of competent jurisdiction.

Notwithstanding other provisions of this section, a board member or any authorized employee or consultant of the board may enter public or private premises without notification if an emergency exists. The need to take a residue sample in a timely manner constitutes an emergency under this section. [1989, c. 841, §7 (AMD).]

(g) PROVISIONS FOR MAKING IT UNLAWFUL TO APPLY RUPs UNLESS CERTIFIED

40 CFR § 171.303(b)(7)(v)

The state plan must include the citation to the specific state laws and regulations that demonstrate specific legal authority for provisions for making it unlawful for persons to use RUPs other than certified or noncertified applicators working under the supervision of a certified applicator.

State Response: The citation is 22 M.R.S. §1471-D.

22 M.R.S. §1471-D. CERTIFICATION AND LICENSES

1. Certification required; commercial applicators and spray contracting firms. Certification is required for commercial applicators and spray contracting firms as follows.

- A. No commercial applicator may use or supervise the use of any pesticide within the State without prior certification from the board, provided that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator; and [1983, c. 819, Pt. A, §42 (NEW).]
- B. No spray contracting firm may use or supervise the use of any pesticide within the State without prior certification from the board [1985, c. 122, §2 (AMD)]. [1985, c. 122, §2 (AMD) .]

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

1. Individual Certification and Company/Agency Licensing Requirements

- B. All commercial applicators responsible for the supervision of noncertified applicators of restricted use pesticides must ensure compliance with training, record keeping, and all other requirements as indicated in 40 CFR 171.201(c) “Supervision of Noncertified Applicators” (2017).

2. Certification required, private applicators. No private applicator shall use or supervise the use of any limited or restricted use pesticide without prior certification from the board, provided, that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator [1975, c. 397, §2 (NEW) .]

(h) PROVISIONS FOR COMMERCIAL APPLICATOR RECORDKEEPING

40 CFR § 171.303(b)(7)(vi)

Provisions requiring certified commercial applicators to record and maintain for the period of at least two years routine operational records containing information on types, amounts, uses, dates, and places of application of restricted use pesticides and for ensuring that such records will be available to appropriate State officials. Such provisions must require commercial applicators to record and maintain, at a minimum, all of the following:

- (A) The name and address of the person for whom the restricted use pesticide was applied.*
- (B) The location of the restricted use pesticide application.*
- (C) The size of the area treated.*
- (D) The crop, commodity, stored product, or site to which the restricted use pesticide was applied.*
- (E) The time and date of the restricted use pesticide application.*
- (F) The brand or product name of the restricted use pesticide applied.*
- (G) The EPA registration number of the restricted use pesticide applied.*
- (H) The total amount of the restricted use pesticide applied per location per application.*
- (I) The name and certification number of the certified applicator that made or supervised the application, and, if applicable, the name of any noncertified applicator(s) that made the application under the direct supervision of the certified applicator.*

State Response: The citation is: 22 M.R.S. §1471-G, and in Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

22 M.R.S. §1471-G. REPORTS

2. Applicators and firms to maintain certain records. All commercial applicators and spray contracting firms shall maintain, for a period of at least 2 years, records indicating the type and amount of pesticide used, the area of use and such other information as the board may require. Said applicators and firms shall provide such information, notification and reports as the board, by regulation, may require. [PL 1983, c. 819, Pt. A, §50 (AMD).] SECTION HISTORY PL 1975, c. 397, §2 (NEW). PL 1983, c. 819, §A50 (AMD).

- (A) The name and address of the person for whom the restricted-use pesticide was applied.*

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

- II. Pesticide application records shall include, at a minimum:
 - a. Site information including town and location, crop or site treated, target organism, customer and customer address_(where applicable);

(B) The location of the restricted use pesticide application.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

- II. Pesticide application records shall include, at a minimum:
 - a. Site information including town and location, crop or site treated, target organism, customer and customer address_(where applicable); and
 - i. for broadcast applications, size of treated area (when completed);
 - ii. for volumetric applications as described on the label, the volume treated;
 - iii. for non-broadcast applications (such as spot treatments, crack and crevice or stump treatments) a practical description of the scope or extent of the application (such as number of trees, stumps or rooms treated).
 - b. Application information. For each distinct site, records must include date and time of application(s), brand name of pesticide(s) applied, EPA registration number(s), active ingredient(s), restricted entry interval(s) and/or ventilation period(s) (where applicable), method of application (type of equipment), dilution agent(s) (other than water), the licensed applicator's name and certification number, the name of any noncertified applicator that made the application (where applicable), and spray contracting firm (where applicable).

(C) The size of the area treated.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

- II. Pesticide application records shall include, at a minimum:
 - a. Site information including town and location, crop or site treated, target organism, customer and customer address_(where applicable); and

- i. for broadcast applications, size of treated area (when completed);
- ii. for volumetric applications as described on the label, the volume treated;
- iii. for non-broadcast applications (such as spot treatments, crack and crevice or stump treatments) a practical description of the scope or extent of the application (such as number of trees, stumps or rooms treated).

(D) *The crop, commodity, stored product, or site to which the restricted use pesticide was applied.*

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

II. Pesticide application records shall include, at a minimum:

- a. Site information including town and location, crop or site treated, target organism, customer and customer address (where applicable); and

(E) *The time and date of the restricted use pesticide application.*

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

II.

- b. **Application information.** For each distinct site, records must include date and time of application(s), brand name of pesticide(s) applied, EPA registration number(s), active ingredient(s), restricted entry interval(s) and/or ventilation period(s) (where applicable), method of application (type of equipment), dilution agent(s) (other than water), the licensed applicator's name and certification number, the name of any noncertified applicator that made the application (where applicable), and spray contracting firm (where applicable).

(F) *The brand or product name of the restricted use pesticide applied.*

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

b. **Application information.** For each distinct site, records must include date and time of application(s), brand name of pesticide(s) applied, EPA registration number(s), active ingredient(s), restricted entry interval(s) and/or ventilation period(s) (where applicable), method of application (type of equipment), dilution agent(s) (other than water), the licensed applicator's name and certification number, the name of any noncertified applicator that made the application (where applicable), and spray contracting firm (where applicable).

(G) The EPA registration number of the restricted use pesticide applied.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

b. **Application information.** For each distinct site, records must include date and time of application(s), brand name of pesticide(s) applied, EPA registration number(s), active ingredient(s), restricted entry interval(s) and/or ventilation period(s) (where applicable), method of application (type of equipment), dilution agent(s) (other than water), the licensed applicator's name and certification number, the name of any noncertified applicator that made the application (where applicable), and spray contracting firm (where applicable).

(H) The total amount of the restricted use pesticide applied per location per application.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

c. **Rate information.** For each distinct site, application rate information must be maintained as follows:

i. **Restricted Use Pesticides.** For restricted use pesticides, applicators shall record the total amount of pesticide applied (undiluted).

ii. **General Use Pesticides.** For general use pesticides, applicators shall record:

(1) rate information as described in (i.) above; or

(2) the mix ratio and the total mix applied; or

(3) the mix ratio and the mix per unit area applied.

(I) The name and certification number of the certified applicator that made or supervised the application, and, if applicable, the name of any noncertified applicator(s) that made the application under the direct supervision of the certified applicator.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

Section 1. Records

A. Pesticide Application Records

b. **Application information.** For each distinct site, records must include date and time of application(s), brand name of pesticide(s) applied, EPA registration number(s), active ingredient(s), restricted entry interval(s) and/or ventilation period(s) (where applicable), method of application (type of equipment), dilution agent(s) (other than water), the licensed applicator's name and certification number, the name of any noncertified applicator that made the application (where applicable), and spray contracting firm (where applicable).

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

1. Individual Certification and Company/Agency Licensing Requirements

B. All commercial applicators responsible for the supervision of noncertified applicators of restricted use pesticides must ensure compliance with training, record keeping, and all other requirements as indicated in 40 CFR 171.201(c) "Supervision of Noncertified Applicators" (2017)

(i) PROVISIONS FOR RUP DEALER RECORDKEEPING.

40 CFR § 171.303(b)(7)(vii)

Provisions requiring restricted use pesticide retail dealers to record and maintain at each individual dealership, for the period of at least two years, records of each transaction where a restricted use pesticide is distributed or sold to any person, excluding transactions solely between persons who are pesticide producers, registrants, wholesalers, or retail sellers, acting only in those capacities. Records of each such transaction must include all of the following information:

- (A) Name and address of the residence or principal place of business of each certified applicator to whom the restricted use pesticide was distributed or sold, or if applicable, the name and address of the residence or principal place of business of each noncertified person to whom the restricted use pesticide was distributed or sold for application by a certified applicator.*
- (B) The certification number on the certification document presented to the seller evidencing the valid certification of the certified applicator authorized to purchase the restricted use pesticide, the State, Tribe, or Federal agency that issued the certification document, the expiration date of the certified applicator's certification, and the category(ies) in which the applicator is certified relevant to the pesticide(s) sold.*
- (C) The product name and EPA registration number of the restricted use pesticide(s) distributed or sold in the transaction including any applicable emergency exemption or State special local need registration number.*
- (D) The quantity of the restricted use pesticide(s) distributed or sold in the transaction.*
- (E) The date of the transaction.*

State Response: The citations are: 22 MRS §1471-D. and 22 M.R.S. §1471-G, and in Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

22 M.R.S. §1471-D. Certification and licenses

No person shall be certified as a pesticide dealer unless that person has demonstrated knowledge of pesticide classifications, formulations, labeling, safety, storage and applicable laws and regulations. Also required shall be knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

22 M.R.S. §1471-G. REPORTS

- 1. Pesticide dealers to maintain certain records.** All pesticide dealers shall maintain records of pesticide distribution for a period of at least 2 years and shall provide such reports and information as the board may, by regulation, require. [1975, c. 397, §2 (NEW) .]

(A) Name and address of the residence or principal place of business of each certified applicator to whom the restricted use pesticide was distributed or sold, or if applicable, the name and address of the residence or principal place of business of each noncertified person to whom the restricted use pesticide was distributed or sold for application by a certified applicator.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

B. Limited Use/Restricted Use Pesticide Sales Records

I. Licensed pesticide dealers shall maintain records of each sale of a restricted/limited use pesticide on their sales slips and the customer's name, and license number must be recorded on every invoice or electronic record involving that individual. Licensed pesticide dealers must also maintain records to verify that sales of restricted/limited use pesticides to unlicensed purchasers are only made where a licensed applicator is employed to supervise the use of the restricted/limited use products. These records must include the name, address, license number, issuing agency, expiration date, and categories of certification (if applicable) of each person to whom the restricted use pesticide was distributed or sold. These records are to be available for inspection by representatives of the Board at reasonable times, upon request, and are to be maintained for two calendar years from the date of sale.

(B) The certification number on the certification document presented to the seller evidencing the valid certification of the certified applicator authorized to purchase the restricted use pesticide, the State, Tribe, or Federal agency that issued the certification document, the expiration date of the certified applicator's certification, and the category(ies) in which the applicator is certified relevant to the pesticide(s) sold.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

B. Limited Use/Restricted Use Pesticide Sales Records

I. Licensed pesticide dealers shall maintain records of each sale of a restricted/limited use pesticide on their sales slips and the customer's name, and license number must be recorded on every invoice or electronic record involving that individual. Licensed pesticide dealers must also maintain records to verify that sales of restricted/limited use pesticides to unlicensed purchasers are only made where a licensed applicator is employed to supervise the use of the restricted/limited use products. These records must include the name, address, license number, issuing agency, expiration date, and categories of certification (if applicable) of each person to whom the restricted use pesticide was distributed or sold. These records are to be available for inspection by representatives of the Board at reasonable times, upon request, and are to be maintained for two calendar years from the date of sale.

(C) The product name and EPA registration number of the restricted use pesticide(s) distributed or sold in the transaction including any applicable emergency exemption or State special local need registration number.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

B. Limited Use/Restricted Use Pesticide Sales Records

II. Pesticide dealer records shall also include the signature of purchaser or his/her agent, the product name, the EPA registration number, state special local need registration (SLN) number (if applicable), the quantity and size of containers purchased, and the date of purchase.

(D) The quantity of the restricted use pesticide(s) distributed or sold in the transaction.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

B. Limited Use/Restricted Use Pesticide Sales Records

II. Pesticide dealer records shall also include the signature of purchaser or his/her agent, the product name, the EPA registration number, state special local need registration (SLN) number (if applicable), the quantity and size of containers purchased, and the date of purchase.

(E) The date of the transaction.

Chapter 50: RECORD KEEPING & REPORTING REQUIREMENTS

B. Limited Use/Restricted Use Pesticide Sales Records

II. Pesticide dealer records shall also include the signature of purchaser or his/her agent, the product name, the EPA registration number, state special local need registration (SLN) number (if applicable), the quantity and size of containers purchased, and the date of purchase.

SECTION 3. COMMERCIAL APPLICATOR CERTIFICATION CATEGORIES [§ 171.101]

(a) OPTION 2 : STATE ADOPTS ITS OWN COMMERCIAL APPLICATOR CATEGORIES AND STANDARDS.

49 CFR § 171.101

OPTION 2: STATE ADOPTS ITS OWN COMMERCIAL APPLICATOR CATEGORIES AND

STANDARDS. If the state had adopted its own categories and standards, then the state must provide a statement that the state has adopted its own standards (that meet or exceed federal standards at § 171.101 and 171.103) and provide all of the following:

- A list and detailed description of all categories and subcategories and the citations for the State laws and/or regulations. States must provide the list of state categories/subcategories in the table below, along with the category/subcategory description and an indication of the closest comparable EPA Federal category.***
- A list and detailed description of the category standards for certification adopted by the State and the citations for the State laws and/or regulations.***

State Response: The citation is 22 M.R.S.A., Section 1471-D and Chapter 31.

State Affirmation Statement: All commercial applicators using or supervising the use of pesticides and operating in Maine are required to be certified in one or more commercial applicator categories that are applicable to their business operations. The state has adopted its own commercial applicator categories and standards. The State of Maine's standards for commercial applicator certifications meet or exceed EPA's standards. Successful completion of certification requirements will qualify an applicator to use or supervise the use of any pesticides, including those classified by EPA as "restricted use".

Table 5 Maine Categories and Associated Federal Categories		
Category/Subcategory Name & Category Number	Maine BPC Category/Subcategory Description	Closet Comparable EPA Federal Category
Agricultural – Animal Maine: 1A	This subcategory includes commercial applicators using or supervising the use of pesticides on animals and to places on or in which animals are confined. Doctors of Veterinary Medicine engaged in the business of applying pesticides for hire as pesticide applicators are included in this subcategory; however, those persons applying pesticides as drugs or medication during the course of their normal practice are not included.	Agricultural - Livestock
Agricultural – Plant Maine: 1B	This subcategory includes commercial applicators using or supervising the use of pesticides in the production of crops including blueberries, orchard fruit, potatoes, vegetables, forage, grain and industrial or non-food crops	Agricultural – Crop Pest Control
Agricultural - Plant Option 1 Limited Commercial Blueberry Maine: 1B	This option includes commercial applicators using or supervising the use of pesticides in the production of blueberries only.	Agricultural – Crop Pest Control
Agricultural - Plant Option 2 Chemigation Maine: 1B	This option includes commercial applicators using or supervising the use of pesticides applied through irrigation equipment in the production of crops	Agricultural – Crop Pest Control
Agricultural - Plant Option 3 Agricultural Soil Fumigation Maine: 1B	This option includes commercial applicators using or supervising the use of soil fumigant pesticides in the production of crops.***	Agricultural – Crop Pest Control
Agricultural - Plant Option 4 Post-Harvest Treatment Maine: 1B	This option includes commercial applicators using or supervising the use of pesticides in the post-harvest treatment of food crops.	Agricultural – Crop Pest Control
Forest Pest Management Maine: 2	This category includes commercial applicators using or supervising the use of pesticides in forests, forest nurseries, Christmas trees, and forest seed producing areas.	Forest Pest Control
Ornamental and Turf Pest Control -Outdoor Ornamentals Maine: 3A	This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of outdoor ornamental trees, shrubs and flowers.	Ornamental and Turf Pest Control
Ornamental and Turf Pest Control -Turf Maine: 3B	This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of turf, such as at turf farms, golf courses, parks, cemeteries, athletic fields and lawns.	Ornamental and Turf Pest Control

Ornamental and Turf Pest Control -Indoor Ornamentals Maine: 3C	This subcategory includes commercial applicators using or supervising the use of pesticides to control pests in the maintenance and production of live plants in shopping malls, businesses, residences and institutions	Ornamental and Turf Pest Control
Seed Treatment Maine: 4	This category includes commercial applicators using or supervising the use of pesticides on seeds.	Seed Treatment
Aquatic Pest Control - General Aquatic Maine: 5A	This subcategory includes commercial applicators using or supervising the use of pesticides applied directly to surface water, including but not limited to outdoor application to public drinking water supplies, golf course ponds, rivers, streams and wetlands.	Aquatic Pest Control
Aquatic Pest Control - Sewer Root Control Maine: 5B	This subcategory includes commercial applicators using or supervising the use of pesticides applied to sewers to control root growth in sewer pipes	Aquatic Pest Control
Vegetation Management - Rights-of-Way Vegetation Management Maine: 6A	This subcategory includes commercial applicators using or supervising the use of pesticides in the management of vegetation on utility, roadside and railroad rights-of-way.	Right-of Way Pest Control: maintenance of Public Roads
Vegetation Management - General Vegetation Management Maine: 6B	This subcategory includes commercial applicators using or supervising the use of pesticides in the management of vegetation (including invasive plants) on sites not included in category VI a including, but not limited to, municipal and other publicly owned properties, industrial or commercial plants and buildings, lumber yards, airports, tank farms, storage areas, parking lots, sidewalks, and trails.	Right-of Way Pest Control: maintenance of Public Roads
Industrial, Institutional, Structural and Health Related Pest Control- General Maine: 7A	This subcategory includes commercial applicators using or supervising the use of pesticides in, on or around human dwellings, office buildings, institutions such as schools and hospitals, stores, restaurants, industrial establishments (other than in Category 6) including factories, warehouses, food processing plants, food or feed transportation facilities and other structures, vehicles, railroad cars, ships, aircraft and adjacent areas; and for the protection of stored, processed or manufactured products. This subcategory also includes commercial applicators using or supervising the use of pesticides to control rodents on refuse areas and to control other pests, including but not limited to birds and mammals.	Industrial, Institutional, Structural and Health-Related Pest Control
Industrial, Institutional, Structural and Health Related Pest Control- Fumigation Maine: 7B	This subcategory includes commercial applicators using or supervising the use of fumigants or fumigation techniques in any type of structure or transportation device.	Industrial, Institutional, Structural and Health-Related Pest Control

Industrial, Institutional, Structural and Health Related Pest Control- Disinfectant and Biocide - 1. Disinfectant and Biocide Treatments Maine: 7C1	This subcategory includes commercial applicators using or supervising the use of pesticides to treat water in manufacturing, industrial cooling towers, public drinking water treatment plants, sewers, and air conditioning systems.	Industrial, Institutional, Structural and Health-Related Pest Control
Industrial, Institutional, Structural and Health Related Pest Control- Disinfectant and Biocide - 2. Swimming Pool and Spa Maine: 7C2	This subcategory includes commercial applicators using or supervising the use of pesticides to treat water in swimming pools and spas.	Industrial, Institutional, Structural and Health-Related Pest Control
Industrial, Institutional, Structural and Health Related Pest Control- Disinfectant and Biocide - 3. Mold Remediation Maine: 7C3	This subcategory includes commercial applicators using or supervising the use of pesticides to treat mold or microbial growth problems.	Industrial, Institutional, Structural and Health-Related Pest Control
Industrial, Institutional, Structural and Health Related Pest Control- Wood Preserving Maine: 7D	This subcategory includes commercial applicators using or supervising the use of restricted use pesticides to treat lumber, poles, railroad ties and other types of wooden structures including bridges, shops and homes. It also includes commercial applicators applying general use pesticides for remedial treatment to utility poles.	Industrial, Institutional, Structural and Health-Related Pest Control
Industrial, Institutional, Structural and Health Related Pest Control- Biting Fly Pests and Other Arthropod Vectors Maine: 7E	This subcategory includes commercial applicators and non-public health governmental officials using or supervising the use of pesticides in management and control of biting flies & other arthropod vectors of public health and public nuisance importance including, but not limited to, ticks, mosquitoes, black flies, midges, and members of the horsefly family.	Industrial, Institutional, Structural and Health-Related Pest Control
Industrial, Institutional, Structural and Health Related Pest Control- Termite Pests Maine: 7F	This subcategory includes commercial applicators using or supervising the use of pesticides to control termites	Industrial, Institutional, Structural and Health-Related Pest Control
Public Health Pest Control - Biting Fly Pests Maine: 8A (a) (a) For government officials only	This subcategory includes governmental officials using pesticides in management and control of potential disease vectors or other pests having medical and public health importance including, but not limited to, mosquitoes, black flies, midges, and members of the horsefly family.	Public Health Pest Control
Public Health Pest Control - Other Pests Maine: 8B (a) (a) For government officials only	This subcategory includes governmental officials using pesticides in programs for controlling other pests of concern to public health including, but not limited to, ticks and birds and mammal vectors of human disease.	Public Health Pest Control

Regulatory Pest Control Maine: 9 (a) (a) For government officials only	This category includes governmental employees using pesticides in the control of pests regulated by the U.S. Animal and Plant Health Inspection Service or some other governmental agency.	Regulatory Pest Control
Demonstration and Research Pest Control Maine: 10 (b) (a) Requires another certification category	This category includes all individuals who (1) demonstrate to the public the proper use and techniques of application of pesticides or supervise such demonstration, (2) conduct field research with pesticides, and in doing so, use or supervise the use of pesticides. Individuals who conduct only laboratory-type research are not included. Applicants seeking certification in this category must also become certified in whatever category/subcategory they plan to make applications under.	Demonstration and Research Pest Control
Aerial Pest Control Maine: 11(b) (a) Requires another certification category	This category includes commercial applicators, including pilots and co-pilots, applying or supervising the application of pesticides by means of any aircraft. Applicants seeking certification in this category must also become certified in whatever category/subcategory they plan to make applications under	Aerial

**** To Clarify: To distinguish the Agricultural Plant Option 3 Agricultural Fumigation category from the 7B Structural Fumigation category, the word “soil” will be added. The revised title will be: “Agricultural Plant Option 3 Agricultural Soil Fumigation.”*

The “Agricultural Plant Option 3 Agricultural Soil Fumigation” description will read: “This option includes commercial applicators using or supervising the use of soil fumigant pesticides in the production of crops.”

Citation and list/detailed description of Maine category standards for commercial certification.

Citation: Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

3. Competency Standards for Certification of Commercial Applicators

- A. Applicants seeking commercial certification must establish competency in the general principles of safe pest control by demonstrating knowledge of basic subjects including, but not limited to, pesticide labeling, safety, environmental concerns, pest organisms, pesticides, equipment, application techniques and applicable laws and regulations. (Core Exam).
- B. Applicants seeking commercial certification must demonstrate competency in each applicable category or subcategory. (Category Exam). Competency in the applicable category or subcategory shall be established as follows:

List and detailed description of Maine category standards for commercial certification

I. Agricultural Animal and Plant Pest Control

- a. **Agricultural Animals.** Applicants seeking certification in the subcategory of Animal Pest Control as described in Section 2(A)(I)(a) must demonstrate knowledge of animals, their associated pests, and methods of pest control. Areas of practical knowledge shall include specific toxicity, residue potential, relative hazards of different formulations, application techniques, and hazards associated with age of animals, stress, and extent of treatment.
- b. **Agricultural Plant.** Applicants seeking certification in the subcategory of Plant Pest Control as described in Section 2(A)(I)(b) Options I - IV must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using pesticides. Areas of such practical knowledge shall include soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, potential for environmental contamination, non-target injury, and community problems related to pesticide use in certain areas. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

Category Standards will be added to Maine Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

- *Federal Category: "Agricultural Plant"*
 - *Agricultural Plant 1B-Option 1: Limited Commercial Blueberry*
 - *Agricultural Plant 1B-Option 2: Chemigation*
 - *Agricultural Plant 1B-Option 3: Agricultural Soil Fumigation Maine will adopt 40 CFR 171.103(13) Soil Fumigation by reference.*
 - *Agricultural Plant 1B-Option 4: Post Harvest Treatment*

II. Forest Pest Management

Applicants seeking certification in the category of Forest Pest Management as described in Section 2(A)(II) must demonstrate practical knowledge of forest vegetation management, forest tree biology and associated pests. Such required knowledge shall include population dynamics of pest species, pesticide-organism interactions, integration of pesticide use with other pest control methods, environmental contamination, pesticide effects on non-target organisms, and use of specialized equipment. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

III. **Ornamental and Turf Pest Control**

- a. **Outdoor Ornamentals.** Applicants seeking certification in the Outdoor Ornamental subcategory as defined in Section 2(A)(III)(a) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of trees, shrubs and floral plantings. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Turf.** Applicants seeking certification in the Turf subcategory as described in Section 2(A)(III)(b) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of turf. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- c. **Indoor Ornamentals.** Applicants seeking certification in the Indoor Ornamental subcategory described in Section 2(A)(III)(c) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of indoor ornamental plantings. Such knowledge shall include pest recognition, proper pesticide selection, undue pesticide persistence, and application methods with particular reference to techniques used in proximity to human presence.

IV. **Seed Treatment**

Applicants seeking certification in the category of Seed Treatment as described in Section 2(A)(IV) must demonstrate practical knowledge of seed types and problems requiring chemical treatment. Such knowledge shall include seed coloring agents, carriers and binders which may affect germination, hazards associated with handling, sorting, and mixing in the treatment process, hazards of introduction of treated seed into food and feed channels, and proper disposal of unused treated seeds.

V. **Aquatic Pest Control**

- a. **General Aquatic** - Applicants seeking certification in the subcategory of General Aquatic as described in Section 2(A)(V)(a) must demonstrate practical knowledge of proper methods of aquatic pesticide application, application to limited area, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include basic factors contributing to the development of nuisance aquatic plant growth such as algal blooms, understanding of various water use situations and

potential downstream effects from pesticide use, and potential effects of various aquatic pesticides on plants, fish, birds, insects and other organisms associated with the aquatic environment. Also required shall be an understanding of the Department of Environmental Protection laws and regulations pertaining to aquatic discharges and aquatic weed control and a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

- b. **Sewer Root Control** - Applicants seeking certification in the subcategory of Sewer Root Control as described in Section 2(A)(V)(b) must demonstrate practical knowledge of proper methods of sewer root control pesticide application, application to pipes, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include potential effects on water treatment plants, movement of pesticides into off target pipes or buildings and the hazards of sewer gases.

VI. **Vegetation Management**

Applicants seeking certification in the subcategories under Vegetation Management as described in Section 2(A)(VI) (a-b) must demonstrate practical knowledge of the impact of pesticide use on a wide variety of environments. Such knowledge shall include an ability to recognize target organisms and circumstances specific to the subcategory, awareness of problems of runoff, root pickup and aesthetic considerations associated with excessive foliage destruction and "brown-out", and an understanding of the mode of action of herbicides, and reasons for the choice of particular chemicals for particular problems, importance of the assessment of potential impact of spraying on adjacent public and private properties and activities, and effects of spraying on fish and wildlife species and their habitat. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

Category Standards will be added to Maine Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

- *Federal Category: "Right of Way Pest Control:*
 - *Maintenance of Public Roads to Maine Vegetation Management-Rights of Way Vegetation Management and,*
 - *Maine Vegetation Management-General Vegetation Management*

VII. **Industrial, Institutional, Structural and Health Related Pest**

- a. **General.** Applicants seeking certification in the subcategory of General Pest Control as described in Section 2(A)(VII)(a) must demonstrate a practical knowledge of a wide variety of pests and methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses,

methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.

- b. **Fumigation.** Applicants seeking certification in the subcategory Fumigation as described in Section 2(A)(VII)(b) must demonstrate a practical knowledge of a wide variety of pests and fumigation methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, fumigant formulations, methods to avoid contamination of food and damage to structures and furnishings, and avoidance of risks to employees and customers.

Category Standards will be added to Maine Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

- *Federal Category: Non Soil Fumigation; Maine will maintain the term “Fumigation” for the category name. In addition to the stated competencies, commercial applicators obtaining certification in the category must demonstrate practical knowledge of topics indicated in 40 CFR 171.103(d)(14).*

c. **Disinfectant and Biocide Treatments.**

1. **Disinfectant and Biocide Treatments.** Applicants seeking certification in the subcategory of Disinfectant and Biocide Treatments as described in Section 2(A)(VII)(c)(1) must demonstrate practical knowledge of water organisms and their life cycles, drinking water treatment plant designs, cooling water system designs, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.
2. **Swimming Pool & Spa.** Applicants seeking certification in the subcategory of Swimming Pool & Spa as described in Section 2(A)(VII)(c)(2) must demonstrate practical knowledge of water organisms and their life cycles, pool and spa design systems, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.
3. **Mold Remediation.** Applicants seeking certification in the subcategory of Mold Remediation as described in Section 2(A)(VII)(c)(3) must demonstrate practical knowledge of mold and problematic microbial organisms, their life cycles, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.

- d. **Wood Preserving.** Applicants seeking certification in the Wood Preserving Subcategory described in Section 2(A)(VII)(d) must demonstrate practical knowledge in wood destroying organisms and their life cycles, nonchemical control methods, pesticides appropriate for wood preservation, hazards

associated with their use, proper handling of the finished product, proper disposal of waste preservatives, and proper application techniques to assure adequate control while minimizing exposure to humans, livestock and the environment.

- e. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest control as described in Section 2(A)(VII)(e) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- f. **Termite Pests.** Applicants seeking certification in this subcategory must demonstrate a practical knowledge of Termite pests and methods for their control. Such knowledge shall include identification of termites and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.

VIII. **Public Health Pest Control**

- a. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest Control as described in Section 2(A)(VIII)(a) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.
- b. **Other Pests.** Applicants seeking certification in the subcategory of Other Pest Control as described in Section 2(A)(VIII)(b) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall

be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

IX. Regulatory Pest Control

Applicants seeking certification in the category of Regulatory Pest Control as described in Section 2(A)(IX) must demonstrate practical knowledge of regulated pests and applicable laws relating to quarantine and other regulations of pests. Such knowledge shall also include environmental impact of pesticide use in eradication and suppression programs, and factors influencing introduction, spread, and population dynamics of relevant pests. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

X. Demonstration and Research Pest Control

Applicants seeking certification in the category of Demonstration and Research Pest Control as described in Section 2(A)(X) must demonstrate practical knowledge in the broad spectrum of activities involved in advising other applicators and the public as to the safe and effective use of pesticides. Persons involved specifically in demonstration activities will be required to demonstrate knowledge of pesticide-organism interactions, the importance of integrating chemical and non-chemical control methods, and a grasp of the pests, life cycles and problems appropriate to the particular demonstration situation. Field researchers will be required to demonstrate general knowledge of pesticides and pesticide safety, as well as a familiarity with the specific standards of this Section which apply to their particular areas of experimentation. All individuals certified in this category must also be certified in one or more of the previous categories or subcategories which represent at least 80% of their practice. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

XI. Aerial Pest Control

Applicants seeking certification in the category of Aerial Pest Control as described in Section 2(A)(XI) must demonstrate at least a practical knowledge of problems which are of special significance in aerial application of pesticides, including chemical dispersal equipment, tank, pump and plumbing arrangements; nozzle selection and location; ultra-low volume systems; aircraft calibration; field flight patterns; droplet size considerations; flagging methods; and loading procedures. Applicants must also demonstrate competency in the specific category or subcategory in which applications will be made, as described in paragraphs I, II, VI and VIII herein. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans.

Category Standards will be added to Maine Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

- *Federal Category: Aerial; Maine will maintain the term Aerial for the category name. In addition to the stated competencies, commercial applicators obtaining certification in the category must demonstrate practical knowledge of topics indicated in 40 CFR 171.103(d)(15).*

SECTION 4. PRIVATE APPLICATOR CERTIFICATION CATEGORIES [§ 171. 105]

(a) OPTION 2: STATE ADOPTS ITS OWN PRIVATE APPLICATOR CATEGORIES AND STANDARDS.

40 CFR § 171.105

OPTION 2: STATE ADOPTS ITS OWN PRIVATE APPLICATOR CATEGORIES AND STANDARDS.

If the state had adopted its own categories and standards for private applicators, then the state must provide a statement that the state has adopted its own standards (that meet or exceed federal standards at § 171.105) and provide all the following:

- A list and detailed description of all private applicator categories and subcategories and the citations for the State laws and/or regulations. States must provide the list of state categories/subcategories in the table below, along with the category/ subcategory description and an indication of the closest comparable EPA Federal category.***
- A list and detailed description of the category standards for certification adopted by the State and the citations for the State laws and/or regulations.***

State Response: MRS Title 22 §1471-D. Certification and licenses

2. Certification required, private applicators. No private applicator shall use or supervise the use of any limited or restricted use pesticide without prior certification from the board, provided, that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator.

Maine has Private Applicator competency standards in **Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS**

1. Competency Standards for Certification - Private Applicator

- A. No person shall be certified as a private applicator unless he has fulfilled requirements demonstrating his knowledge of basic subjects including pesticide label comprehension, ability to read and understand pesticide labeling, safety, environmental concerns, stewardship, pest organisms, pesticides, equipment, application techniques, responsibilities for supervisors of non-certified applicators, and applicable laws and regulations. Also required shall be knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans (core exam).

Maine will adopt 40 CFR 171.105 (a) (1 through 11) Competency Standards into Chapter 32 by reference.

Maine Private Categories and Associated Federal Categories

Maine Category/Subcategory Name	Statutory Authority	Closet Comparable EPA Federal Category
Animal	22 M.R.S. §1471-D	Agricultural Pest Control-Livestock Pest Control
Blueberry	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Cranberry	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Forage	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Forestry	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Greenhouse	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Nursery	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Orchard Fruit	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Potatoes	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Small Fruit	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Vegetables	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control
Turf	22 M.R.S. §1471-D	Agricultural Pest Control-Crop Pest Control

Federal Private Applicator Categories-Adopted by the State of Maine

Table 7. Federal Private Applicator Categories Adopted by the State of Maine.

Federal Categories Adopted	Adopted Federal Standards (Y/N)	State Law/Reg Citation
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Soil Fumigation	Y	Chapter 32
Non-Soil Fumigation	Y	Chapter 32
Aerial Pest Control	Y	Chapter 32

The Federal Private Applicator categories adopted in Chapter 32 are Supplemental Certification Categories. Applicants seeking supplemental private certification must demonstrate competency in each applicable category (Category Exam).

Competency Standards: Chapter 32

1. Competency Standards for Certification - Private Applicator

- B. No person shall be certified as a private applicator unless he has demonstrated knowledge of the general principles of pest control for his major commodity, including specific pests of the crop, their life cycle, and proper timing of control measures to be efficacious (Commodity Exam).

The Federal Private Applicator categories adopted in Chapter 32 are Supplemental Certification Categories.

**Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS;
(2)(B)(4)**

(b) Categories for Supplemental Certification of Private Applicators.

- a. **Soil Fumigation.** This category includes private applicators using or supervising the use of pesticides to fumigate crops in production including blueberries, orchard fruit, potatoes, vegetables, forage, grain and industrial or non-food crops.
- b. **Non-soil Fumigation.** This category includes private applicators using or supervising the use of fumigant pesticides or fumigation techniques in any type of structure or transportation device.
- c. **Aerial.** This category includes private applicators, including pilots and co-pilots, applying pesticides by means of any aircraft.

Category Standards will be added to Maine Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

Competency Standards:

- o *Soil Fumigation Competency Standards at 40 CFR 171.103(d)(13); adopted by reference in Chapter 32.*
- o *Non-Soil Fumigation Competency Standards at 40 CFR 171.103(d)(14); adopted by reference in Chapter 32.*
- o *Aerial Pest Control Competency Standards at 40 CFR 171.103(d)(15); adopted by reference in Chapter 32.*

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS;

5. Competency Standards for Supplemental Certification of Private Applicators

Applicants seeking supplemental private certification must demonstrate competency in each applicable category (Category Exam). Competency in the applicable category shall be established as follows:

- b. Soil Fumigation. Applicants seeking supplemental certification in the category of Soil Fumigation as described in Section 2(B)(4)(a) must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using pesticides. Areas of such practical knowledge shall include soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, potential for environmental contamination, non-target injury, and community problems related to pesticide use in certain areas. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans. In addition to the above competencies, private applicators obtaining supplemental certification in this category must demonstrate practical knowledge of topics indicated in 40 CFR 171.105 (d) (2017).
- c. Non-soil Fumigation. Applicants seeking supplemental certification in the category of Structural Fumigation as described in Section 2(B)(4)(b) must demonstrate a practical knowledge of a wide variety of pests and fumigation methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, fumigant formulations, methods to avoid contamination of food and damage to structures and furnishings, and avoidance of risks to employees. In addition to the above competencies, private applicators obtaining supplemental certification in this category must demonstrate practical knowledge of topics indicated in 40 CFR 171.105 (e) (2017).
- d. Aerial Pest Control. Applicants seeking supplemental certification in the category of Aerial Pest Control as described in Section 2(B)(4)(c) must demonstrate at least a practical knowledge of problems which are of special significance in aerial application of pesticides, including chemical dispersal equipment, tank, pump and plumbing arrangements; nozzle selection and location; ultra-low volume systems; aircraft calibration; field flight patterns; droplet size considerations; flagging methods; and loading procedures. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans. In addition to the above competencies, private applicators obtaining supplemental certification in this category must demonstrate practical knowledge of topics indicated in 40 CFR 171.105 (f) (2017).

SECTION 5. LIMITED USE CERTIFICATION CATEGORIES [IF APPLICABLE]. [§ 171. 303(a)(4), § 171. 303(b)(2) and § 171. 303(b)(2)(ii)(A)] States must provide a list of all limited use categories the state has adopted for commercial applicators and the standards of competency for any such categories.

Not applicable.

Limited use pesticides may be purchased and used only by applicators licensed by the Board provided in Chapters 31 and 32 and holding a permit from the Board as provided in subsections E and F below.

Chapter 40: MAINE RESTRICTED AND LIMITED USE PESTICIDES

Section 2. PROHIBITED AND LIMITED USE PESTICIDES

- A. All products containing the following active ingredients shall be classified as limited use pesticides in Maine:
- | | |
|------------|---|
| Aldrin | Methyl Parathion (Microencapsulated forms only) |
| Chlordane | |
| Heptachlor | Sodium monofluoroacetate (Compound 1080) |
| Lindane | Toxaphene |
- B. Limited use pesticides may be sold only by restricted use pesticide dealers licensed by the Board as provided in Chapter 34.
- C. Limited use pesticides may be purchased and used only by applicators licensed by the Board as provided in Chapters 31 and 32 and holding a permit from the Board as provided in subsections E and F below.
- D. An application to use any limited use pesticides shall be made to the Board in writing on such forms as may be provided by the Board. Applications shall include, at a minimum,

the chemical to be used, the pest or pests which are the target of such chemical application, the vegetation to which it will be applied, the location and detailed description of the application site, and the amount of land to be covered by such application. When, in the opinion of the Board, any bona fide emergency prevents a written application to the Board, such application may be made orally to any member or employee of the Board. Failure of any applicator to exercise due diligence or to reasonably anticipate any situation which would create the need for the use of any limited use pesticide shall not be considered an emergency within the scope of this section.

- E. The Board may grant such applicant permission to use or apply any limited use pesticide if the Board determines that (1) the pesticide applicator is appropriately licensed, (2) an unusually heavy infestation of insects or other pests creates the prospect of a significant economic loss to the applicant or any other person or creates a public health hazard, (3) no suitable chemical, biological or other method is available to prevent or reduce the impact of such infestation to an acceptable level, (4) the use of such limited use pesticide will not create an undue risk to human life nor cause significant detrimental effects upon the environment, and (5) such use is in compliance with FIFRA and the rules and regulations promulgated thereunder. Permission to use such limited use pesticide may be granted upon such reasonable terms and conditions as the Board deems necessary to protect the health, safety and general welfare of the environment and the people of the State of Maine and to achieve the purpose of the statute. Permission to use any limited use pesticide during any bona fide emergency situation may be granted upon the oral consent of a majority of the Board given to the director or chairman of the Board or such other member of the Board who received the oral application. Such oral consent shall thereafter be confirmed in writing by such members to the director within ten (10) days.
- F. The outdoor use or application of benzene hexachloride (including lindane) for the purpose of controlling mosquitoes and other biting flies is hereby prohibited in the State of Maine

SECTION 6. STANDARDS FOR CERTIFICATION OF COMMERCIAL APPLICATORS.
[§ 171. 101 and 171.103]

OPTION 2: STATE ADOPTS ITS OWN STANDARDS FOR CERTIFICATION OF COMMERCIAL APPLICATORS

State Response: The citation is 22 M.R.S.A., Section 1471-D and Chapter 31.

State Affirmation Statement: The state has adopted its own standards for certification of Commercial Applicators. The State of Maine's standards for commercial applicator certifications

40 CFR § 171.101 OPTION 2: STATE ADOPTS ITS OWN STANDARDS FOR CERTIFICATION OF COMMERCIAL APPLICATORS. *If the state had adopted its own standards for commercial applicator certification, then the state must provide a statement that the state has adopted its own standards that meet or exceed federal standards at § 171.101 and 171.103 and provide all of the following:*

(a) **MINIMUM AGE REQUIREMENT.** [§171. 103(a)(1)] *[Must be in state laws or regulations.] Documentation that the state has adopted a minimum age requirement for commercial applicator certification of at least 18 years old. The documentation must include the citation and copy of the specific provisions for adoption of the state minimum age requirements and should be included with the plan as Attachment 6-A.*

(b) **CORE STANDARDS OF COMPETENCY.** [§171. 103(c)] *[Must be in state laws or regulations.] Documentation that the state has adopted core standards of competency that meet or exceed federal standards at § 171 .101 and 171 .103 . The documentation must include the citation and copy of the specific provisions that document that the state has adopted core standards of competency that meet or exceed federal standards and should be included with the plan as Attachment 6 -B.*

(c) **EXAMINATION STANDARDS.** [§171. 103(a)(2)] *[Not required to be in state laws or regulations.] A detailed description of the State's certification examination standards for commercial applicators and an explanation and documentation of how they meet/ exceed federal exam administration standards at §171 .103 (a)(2) (and listed in Appendix A), including a description of any alternative identification that a State will authorize for qualification for certification in addition to a valid, government-issued photo identification. The documentation should explain the specific provisions that document that the state has adopted examination standards that meet or exceed federal standards and should be included with the plan as Attachment 6 -C.*

(d) **STANDARDS FOR LIMITED USE CATEGORY CERTIFICATION, IF APPLICABLE.** [§171. 103(a)(4), §171.103(a)(4)(iii) and §171. 103(a)(4)(v)] *[Must be in state laws or regulations i f state has one or more.] States must provide all the following documentation if they have established any limited use category certifications:*

- *Documentation that the state has adopted core standards of competency that meet or exceed federal standards at § 171.101 and 171.103 and a requirement that candidates for certification in a limited use category pass the written examination covering the core standards at § 171 .103 (c) and demonstrate practical knowledge of the principles and practices of pest control and proper and effective use of restricted use pesticide(s) covered by the limited use category. States must provide a detailed description of the core standards of competency if they are different than those used for all other commercial applicator categories.*

- *A detailed description of the process by which applicators must demonstrate practical knowledge of the principles and practices of pest control and proper and effective use of the restricted use pesticides authorized under the limited use category based on the competency standards identified in Section 5 of the plan. [NOTE: This does not have to be accomplished by a written examination.] The documentation must include the citation and copy of the specific provisions that document that the state has adopted standards for limited use category certification that meet or exceed federal standards and should be included with the plan as Attachment 6 - D.*

(e) **EXCEPTIONS, IF APPLICABLE.** [§171. 103(e)] *[Must be in state laws or regulations if the state has this exception. State can exceed federal regulations – meaning state is not required to have this exception.] States must provide a detailed description and documentation of any exceptions to the state certification requirements for commercial applicators (e. g., persons conducting laboratory research involving restricted use pesticides and/ or Doctors of Medicine and Doctors of Veterinary Medicine applying restricted use pesticides to patients during the course of the ordinary practice of those professions). The documentation must include the citation and copy of the specific provisions that document that the state has adopted the exceptions to certification for commercial applicators and should be included with the plan as Attachment 6- E.*

meet or exceed EPA's standards.

(a)) **MINIMUM AGE REQUIREMENT.** [§171.103(a)(1)] Documentation that the state has adopted a minimum age requirement for commercial applicator certification of at least 18 years old. The documentation must include the citation and copy of the specific provisions for adoption of the state minimum age

requirements.

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

1. Certification Procedures for Commercial Applicators

A. **Initial Certification.** Individuals attempting to certify as a commercial applicator must be at least 18 years of age.

(b) **CORE STANDARDS OF COMPETENCY.** [§171.103(c)] The documentation must include the citation and copy of the specific provisions that document that the state has adopted core standards of competency that meet or exceed federal standards.

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS (4)

2. Competency Standards for Certification of Commercial Applicators

A. Applicants seeking commercial certification must establish competency in the general principles of safe pest control by demonstrating knowledge of basic subjects including, but not limited to, pesticide labeling, safety, environmental concerns, pest organisms, pesticides, equipment, application techniques and applicable laws and regulations. (Core Exam).

The State of Maine will adopt 40 CFR 171.103 (c) into Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS by reference.

B. Applicants seeking commercial certification must demonstrate competency in each applicable category or subcategory. (Category Exam). Competency in the applicable category or subcategory shall be established as follows:

I. Agricultural Animal and Plant Pest Control

a. **Agricultural Animals.** Applicants seeking certification in the subcategory of Animal Pest Control as described in Section 2(A)(I)(a) must demonstrate knowledge of animals, their associated pests, and methods of pest control. Areas of practical knowledge shall include specific toxicity, residue potential, relative hazards of different formulations, application techniques, and hazards associated with age of animals, stress, and extent of treatment.

b. **Agricultural Plant.** Applicants seeking certification in the subcategory of Plant Pest Control as described in Section 2(A)(I)(b) Options I - IV must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using pesticides. Areas of such practical knowledge shall include soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, potential for environmental contamination, non-target injury, and community problems related to pesticide use in certain areas. Also required shall be a knowledge

of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

Federal Category: “Agricultural Plant” Category Standards will be added for:

- *Agricultural Plant 1B-Option 1: Limited Commercial Blueberry*
- *Agricultural Plant 1B-Option 2: Chemigation*
- *Agricultural Plant 1B-Option 3: Agricultural Soil Fumigation Maine will adopt 40 CFR 171.103(13) Soil Fumigation.*
- *Agricultural Plant 1B-Option 4: Post Harvest Treatment*

II. **Forest Pest Management**

Applicants seeking certification in the category of Forest Pest Management as described in Section 2(A)(II) must demonstrate practical knowledge of forest vegetation management, forest tree biology and associated pests. Such required knowledge shall include population dynamics of pest species, pesticide-organism interactions, integration of pesticide use with other pest control methods, environmental contamination, pesticide effects on non-target organisms, and use of specialized equipment. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

III. **Ornamental and Turf Pest Control**

- a. **Outdoor Ornamentals.** Applicants seeking certification in the Outdoor Ornamental subcategory as defined in Section 2(A)(III)(a) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of trees, shrubs, and floral plantings. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.
- b. **Turf.** Applicants seeking certification in the Turf subcategory as described in Section 2(A)(III)(b) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of turf. Such knowledge shall include potential phytotoxicity, undue pesticide persistence, and application methods, with particular reference to techniques used in proximity to human habitations. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

- c. **Indoor Ornamentals.** Applicants seeking certification in the Indoor Ornamental subcategory described in Section 2(A)(III)(c) must demonstrate practical knowledge of pesticide problems associated with the production and maintenance of indoor ornamental plantings. Such knowledge shall include pest recognition, proper pesticide selection, undue pesticide persistence, and application methods with particular reference to techniques used in proximity to human presence.

IV. **Seed Treatment**

Applicants seeking certification in the category of Seed Treatment as described in Section 2(A)(IV) must demonstrate practical knowledge of seed types and problems requiring chemical treatment. Such knowledge shall include seed coloring agents, carriers and binders which may affect germination, hazards associated with handling, sorting, and mixing in the treatment process, hazards of introduction of treated seed into food and feed channels, and proper disposal of unused treated seeds.

V. **Aquatic Pest Control**

- a. **General Aquatic** - Applicants seeking certification in the subcategory of General Aquatic as described in Section 2(A)(V)(a) must demonstrate practical knowledge of proper methods of aquatic pesticide application, application to limited area, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include basic factors contributing to the development of nuisance aquatic plant growth such as algal blooms, understanding of various water use situations and potential downstream effects from pesticide use, and potential effects of various aquatic pesticides on plants, fish, birds, insects, and other organisms associated with the aquatic environment. Also required shall be an understanding of the Department of Environmental Protection laws and regulations pertaining to aquatic discharges and aquatic weed control and a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.
- b. **Sewer Root Control** - Applicants seeking certification in the subcategory of Sewer Root Control as described in Section 2(A)(V)(b) must demonstrate practical knowledge of proper methods of sewer root control pesticide application, application to pipes, and a recognition of the adverse effects which can be caused by improper techniques, dosage rates, and formulations. Such knowledge shall include potential effects on water treatment plants, movement of pesticides into off target pipes or buildings and the hazards of sewer gases.

VI. **Vegetation Management**

Applicants seeking certification in the subcategories under Vegetation Management as described in Section 2(A)(VI) (a-b) must demonstrate practical knowledge of the impact of pesticide use on a wide variety of environments. Such knowledge shall include an ability to recognize target organisms and circumstances specific to the subcategory, awareness of problems of runoff, root pickup and aesthetic considerations associated with excessive foliage destruction and "brown-out", and an understanding of the mode of action of herbicides, and reasons for the choice of particular chemicals for particular problems, importance of the assessment of potential impact of spraying on adjacent public and private properties and activities, and effects of spraying on fish and wildlife species and their habitat. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

Federal Category: "Right of Way Pest Control: Category Standards will be added for:

- *Maintenance of Public Roads to Maine Vegetation Management-Rights of Way Vegetation Management and,*
- *Maine Vegetation Management-General Vegetation Management*

VII. Industrial, Institutional, Structural and Health Related Pest

- a. **General.** Applicants seeking certification in the subcategory of General Pest Control as described in Section 2(A)(VII)(a) must demonstrate a practical knowledge of a wide variety of pests and methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, formulations appropriate for various indoor and outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.
- b. **Fumigation.** Applicants seeking certification in the subcategory Fumigation as described in Section 2(A)(VII)(b) must demonstrate a practical knowledge of a wide variety of pests and fumigation methods for their control. Such knowledge shall include identification of pests and knowledge of life cycles, fumigant formulations, methods to avoid contamination of food and damage to structures and furnishings, and avoidance of risks to employees and customers.

Federal Category: Non Soil Fumigation; Maine will maintain the term "Fumigation" for the category name. In addition to the stated competencies, commercial applicators obtaining certification in the category must demonstrate practical knowledge of topics indicated in 40 CFR 171.103(d)(14).

- c. **Disinfectant and Biocide Treatments.**

1. **Disinfectant and Biocide Treatments.** Applicants seeking certification in the subcategory of Disinfectant and Biocide Treatments as described in Section 2(A)(VII)(c)(1) must demonstrate practical knowledge of water organisms and their life cycles, drinking water treatment plant designs, cooling water system designs, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.
 2. **Swimming Pool & Spa.** Applicants seeking certification in the subcategory of Swimming Pool & Spa as described in Section 2(A)(VII)(c)(2) must demonstrate practical knowledge of water organisms and their life cycles, pool and spa design systems, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.
 3. **Mold Remediation.** Applicants seeking certification in the subcategory of Mold Remediation as described in Section 2(A)(VII)(c)(3) must demonstrate practical knowledge of mold and problematic microbial organisms, their life cycles, labels, and hazards of disinfectants and biocides and proper application techniques to ensure adequate control while minimizing exposure to humans and the environment.
- d. **Wood Preserving.** Applicants seeking certification in the Wood Preserving Subcategory described in Section 2(A)(VII)(d) must demonstrate practical knowledge in wood destroying organisms and their life cycles, nonchemical control methods, pesticides appropriate for wood preservation, hazards associated with their use, proper handling of the finished product, proper disposal of waste preservatives, and proper application techniques to assure adequate control while minimizing exposure to humans, livestock and the environment.
 - e. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest control as described in Section 2(A)(VII)(e) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.
 - f. **Termite Pests.** Applicants seeking certification in this subcategory must demonstrate a practical knowledge of Termite pests and methods for their control. Such knowledge shall include identification of termites and knowledge of life cycles, formulations appropriate for various indoor and

outdoor uses, methods to avoid contamination of food and feed, and damage to structures and furnishings, avoidance of risk to humans, domestic animals, and non-target organisms and risks to the environment associated with structural pesticide use.

VIII. **Public Health Pest Control**

- a. **Biting Fly and Other Arthropod Vector Pests.** Applicants seeking certification in the subcategory of Biting Fly and Other Arthropod Vector Pest Control as described in Section 2(A)(VIII)(a) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

- c. **Other Pests.** Applicants seeking certification in the subcategory of Other Pest Control as described in Section 2(A)(VIII)(b) must demonstrate a practical knowledge of the species involved, their potential roles in disease transmission, and the use of pesticides in their control. Such knowledge shall include identification of and familiarity with life cycles and habitat requirements, special environmental hazards associated with the use of pesticides in control programs, and knowledge of the importance of integrating chemical and non-chemical control methods. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

IX. **Regulatory Pest Control**

Applicants seeking certification in the category of Regulatory Pest Control as described in Section 2(A)(IX) must demonstrate practical knowledge of regulated pests and applicable laws relating to quarantine and other regulations of pests. Such knowledge shall also include environmental impact of pesticide use in eradication and suppression programs, and factors influencing introduction, spread, and population dynamics of relevant pests. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

X. **Demonstration and Research Pest Control**

Applicants seeking certification in the category of Demonstration and Research Pest Control as described in Section 2(A)(X) must demonstrate practical knowledge in the broad spectrum of activities involved in advising other applicators and the public as to the safe and effective use of pesticides. Persons

involved specifically in demonstration activities will be required to demonstrate knowledge of pesticide-organism interactions, the importance of integrating chemical and non-chemical control methods, and a grasp of the pests, life cycles and problems appropriate to the particular demonstration situation. Field researchers will be required to demonstrate general knowledge of pesticides and pesticide safety, as well as a familiarity with the specific standards of this Section which apply to their particular areas of experimentation. All individuals certified in this category must also be certified in one or more of the previous categories or subcategories which represent at least 80% of their practice. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

XI. Aerial Pest Control

Applicants seeking certification in the category of Aerial Pest Control as described in Section 2(A)(XI) must demonstrate at least a practical knowledge of problems which are of special significance in aerial application of pesticides, including chemical dispersal equipment, tank, pump and plumbing arrangements; nozzle selection and location; ultra-low volume systems; aircraft calibration; field flight patterns; droplet size considerations; flagging methods; and loading procedures. Applicants must also demonstrate competency in the specific category or subcategory in which applications will be made, as described in paragraphs I, II, VI and VIII herein. Also required shall be a knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals, or humans.

Federal Category: Aerial; Maine will maintain the term Aerial for the category name. In addition to the stated competencies, commercial applicators obtaining certification in the category must demonstrate practical knowledge of topics indicated in 40 CFR 171.103(d)(15).

4. Competency Standards for Certification of Commercial Applicator/Master

A. Regulations Exam. An applicant seeking certification as a commercial applicator/master must successfully complete a closed book exam on the appropriate chapters of the Board's regulations. The passing grade shall be 80%. An applicant must successfully complete the regulations exam before being allowed to proceed to the master exam. The staff may waive the requirements for the closed book regulation exam if it determines that a pest management emergency exists necessitating the issuance of a nonresident license pursuant to Section 6 B. of this chapter, provided that the staff verbally reviews the pertinent regulations with the applicant prior to issuing a nonresident license.

(c) EXAMINATION STANDARDS. [§171.103(a)(2)] The State of Maine's certification examination standards for commercial applicators meet or exceed

federal exam administration standards at §171 .103 (a)(2).

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

5. Certification Procedures for Commercial Applicators

A. **Initial Certification.** Individuals attempting to certify as a commercial applicator must be at least 18 years of age.

I. **Application for Exams.** Individuals applying to take exams must submit a completed application and associated fees. All fees are waived for governmental employees.

a. Information shall include name, home address, company address, name and telephone number of supervisor and categories for which certification is desired.

b. A non-refundable fee of \$10.00 for each core, category or subcategory exam shall accompany the application.

c. Study materials for other than the regulations exam are available through the University of Maine Cooperative Extension Pest Management Office for a fee.

d. A non-refundable fee of \$10.00 for the regulations exam and \$40.00 for the Master exam shall accompany the application for Master exams. Study material for the regulations exam will be sent to the applicant upon receipt of their application and the required fees.

II. Appointment for Exams

a. Exams will be scheduled by Board staff. It is the responsibility of the applicant to reschedule if necessary.

b. All exam fees shall be forfeited if an applicant fails to notify the Board that he/she cannot sit for the exams on the scheduled date at least 24 hours in advance of the scheduled exam. Applicants who cancel their exam appointment two times in a row shall also forfeit their exam fees. Re-application shall require an additional \$15.00 fee.

c. Exams will be available year-round on an appointment basis at the Board's office in Augusta.

d. Exams may also be offered at other locations designated by the Board staff. Appointments for these exams should be arranged by application with the Board's office in Augusta.

III. Exams

- a. Applicants shall take a closed book core exam plus a closed book category technical exam on each applicable category or subcategory for which they anticipate making pesticide applications.
- b. In addition to the exams described above in sections (a), applicants for commercial applicator/master certification must complete a closed book written regulations exam as well as a master exam. Applicants for commercial applicator/master must successfully complete the core and at least one category exam or the combined exam before being eligible to take the master exams. Applicants must also successfully complete the regulations exam before being allowed to commence on the master exam.

IV. Examination Procedures. All applicants shall comply with these rules or forfeit their opportunity to complete the exams at a specified appointment.

- a. Applicant shall present a valid government issued identification to the moderator prior to commencement of exams.
- b. Applicants should be present and ready to take the exams at the appointed time.
- c. Applicants shall not talk during the examination period.
- d. Applicants shall not be allowed to bring any books, papers, cellular telephones, calculators or electronically stored data into the examining room. Pencils and work sheets will be provided and all papers shall be collected at the end of the period.
- e. Applicants shall not make notes of the exams and shall not leave the table during an exam unless authorized by the staff.

V. Qualification Requirements. An applicant must achieve a passing score of 80 percent on each exam.

- a. An applicant who fails the core exam must re-apply and pay all required fees and may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must reapply and pay all required fees and wait 6 more days before retaking again.
- b. An applicant who fails a category exam must re-apply and pay all required fees and may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must reapply and pay all required fees and wait 6 more days before retaking again.
- c. An applicant who passes the core and one category exam shall be considered eligible for operator level licensing in that particular category so long as that person will be working under the supervision of a Master

applicator. If at a later date the applicant wishes to add another category, only the appropriate category exam shall be required.

d. An applicant who fails a master exam must re-apply and pay all required fees and may not retake the examination prior to 6 days after the date of such failed examination.

e. Any applicant must pass both the core and at least one category exam by December 31 of the third year from the date on which the first exam was passed.

f. Any applicant who violates any of the rules pertaining to examinations shall wait a minimum of 60 days before retaking.

VI. **Expiration.** Certification under this Section will expire on December 31st of the third year after the date of successful completion of required exams and on December 31st of every third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.

VII. An applicant's original certification period shall not be extended due to the applicant qualifying for another category or upgrading to the master level.

STATE OF MAINE EXAMINATION PROCESS:

Learning Materials:

The State of Maine provides for certification by examination only. Learning materials needed for examination preparation are identified in the certification process. The learning materials can be purchased through the University of Maine Cooperative Extension.

The State of Maine uses "core" learning materials developed by the University of Maine Cooperative Extension and the State of Maine Department of Agriculture, Conservation and Forestry.

Learning materials for category examination preparation have been selected or developed by the University of Maine Cooperative Extension and the State of Maine Department of Agriculture, Conservation and Forestry, supported with EPA OPP/Worker Safety Branch funds.

Learning materials are carefully reviewed, vetted for applicability, and evaluated for quality and accuracy to determine compliance with federal requirements before being incorporated into the state program.

State specific materials such as state laws and regulations are also part of the learning materials used for examination preparation.

Learning materials undergo periodic review by the University of Maine Cooperative Extension and the State of Maine Department of Agriculture, Conservation and Forestry, to determine whether the materials are relevant, practical, meet the needs of applicators and address pesticide use and safety.

The State of Maine does not allow for use of reference materials during the examination.

Examinations:

The State of Maine Department of Agriculture, Conservation and Forestry offers two options to take the commercial exams.

Option 1: Applicants may elect to take the core and category exams at the MDACF office in Augusta, Maine. The exams provided in Augusta are offered once per month.

Option 2: Take the exams at testing centers located across the State of Maine.

Exams are proctored electronically and by testing center staff if the exam is taken at a State of Maine testing center.

Exams given in person are proctored by designated BPC staff who is not seeking certification at any examination he/she/they are proctoring.

Examination questions are designed and constructed using professional practices developed by the staff trained in testing techniques. Questions are evaluated for difficulty, fairness, bias, and other factors before being included in any exam.

The questions reflect the content of the educational materials. The goal is to determine the candidate's ability to apply the knowledge gained from examination preparation.

Types of questions include true/false, or multiple choice. The exams include a pesticide label with five to ten related questions.

The response options to examination questions are developed to ensure they reflect the questions and promote knowledge and comprehension.

Examination questions left unanswered are counted as incorrect.

The State of Maine uses a passing score of 80 percent for commercial certification as the measure of demonstrated competency. Based on certification program historical data and analytics, established passing scores have proven to be sufficient to ensure a minimum standard of competency.

The passing score for all examinations is communicated at the outset of the exam as well as in examination informational materials.

Exam passing rates vary by category. The number of exam questions varies by category, ranging from 25 questions to 50 questions.

Individual scores are sent to exam candidates via email/US Mail in 10 days.

Oral Examinations:

An oral examination is part of the State of Maine commercial master certification process. The manual is provided by the Department of Agriculture, Conservation and Forestry.

Oral examinations are administered only once the candidate has received a passing score of 80 percent on the written regulations examination.

The oral exam is given by a designated Maine Department of Agriculture, Conservation and Forestry staff member who is not seeking certification at any examination he/she/they are proctoring.

Oral examinations are scored on a pass/fail basis.

The score for the oral exam is provided to the candidate at the close of the exam session.

A candidate for commercial certification must pass both the written exam and the oral examination to become certified.

Examination Data:

In preparation for the FIFRA Cooperative Agreement Annual End of Year reporting, the State of Maine reviews pesticide violations to determine if any areas related to federal requirements may need additional emphasis (e.g., label violations, use information, etc.). Insights gained from this exercise may be incorporated into examination reviews or continuing education sessions. Much of this information is included in CPARD as well as the FIFRA Cooperative Agreement Template.

SUMMARY:

In summary, the Maine SLA reviews examination test questions, exam preparation materials and the number and types of questions included in the examination to maintain a rigorous program that assures competence of applicators and measures performance.

(d) STANDARDS FOR LIMITED USE CATEGORY CERTIFICATION, IF APPLICABLE. [§171.103(a)(4), §171.103(a)(4)(iii) and §171.103(a)(4)(v)] The specific provisions that document that this state has adopted standards for limited use category certification that meet or exceed federal standards.

Not Applicable.

(e) EXCEPTIONS, IF APPLICABLE. [§171.103(e)] The documentation must include the citation and copy of the specific provisions that document that the state has adopted the exceptions to certification for commercial applicators.

Section 3. HEXAZINONE (VELPAR, PRONONE)

The registration of hexazinone is subject to the following limitations and conditions.

A. Licenses Required

No person shall use or supervise the use of any pesticide containing the active ingredient hexazinone unless they have obtained an applicators license in accordance with 22 M.R.S. §1471-D.

Section 4. AQUATIC HERBICIDES

The registration of pesticides for which there is an aquatic herbicide use on the product label shall be subject to the following limitations and conditions.

B. Licenses Required

I. Unless exempted under Chapter 41, Section 4 (B) (III), no person shall purchase, use or supervise the use of any aquatic herbicides identified on the Board's annual listing unless they have obtained a private or commercial pesticide applicator's license from the Board.

II. No person shall:

- a. Distribute any aquatic herbicides identified on the Board's annual listing without a restricted use pesticide dealer's license from the Board; or
- b. Unless exempted under Chapter 41, Section 4 (B) (III), distribute any aquatic herbicides identified on the Board's annual listing to any person who is not licensed as a private or commercial applicator by the Board.

SECTION 7 . STANDARDS FOR CERTIFICATION OF PRIVATE APPLICATORS. [§ 171. 105]

(a) OPTION 2: STATE ADOPTS ITS OWN STANDARDS FOR CERTIFICATION OF PRIVATE APPLICATORS

40 CFR § 171.101 OPTION 2 : STATE ADOPTS ITS OWN STANDARDS FOR CERTIFICATION OF PRIVATE APPLICATORS.

If the state had adopted its own standards for private applicator certification, then the state must provide a statement that the state has adopted its own standards that meet or exceed federal standards at §171.105 and provide all the following:

(a) MINIMUM AGE REQUIREMENT. [§171. 105 (g)] [Must be in state laws or regulations.]

(b) CORE STANDARDS OF COMPETENCY. [§171. 105(a)] [Must be in state laws or regulations.]

(c) DETERMINATION OF COMPETENCY AND EXAMINATION STANDARDS. [§171. 105 (h)] [Not required to be in state laws or regulations.]

State Response: The citation is 22 M.R.S.A., Section 1471-D and Chapter 32.

State Affirmation Statement: The state has adopted its own standards for certification of Private Applicators. The State of Maine’s standards for private applicator certifications meet or exceed EPA’s standards.

(a) MINIMUM AGE REQUIREMENT. [§171.105(g)] The documentation must include the citation and copy of the specific provisions that document adoption of the state minimum age requirements.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

2. Certification Procedures for Private Applicators

A. Initial Certification

- 1. Any person attempting to certify as a private applicator must be at least 18 years of age.**

A noncertified applicator must be at least 18 years old, except for a noncertified applicator who must be at least 16 years old when using restricted use pesticides under the direct supervision of an immediate family member. 40 CFR 171.201(2) (i through iii) will be adopted by reference.

(b) CORE STANDARDS OF COMPETENCY. [§171.105(a)] The State of Maine has general core standards of competency for private applicators that meet or exceed federal standards in Chapter 32.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

1. Competency Standards for Certification - Private Applicator

A. No person shall be certified as a private applicator unless he has fulfilled requirements demonstrating his knowledge of basic subjects including pesticide label comprehension, ability to read and understand pesticide labeling, safety, environmental concerns, stewardship, pest organisms, pesticides, equipment, application techniques, responsibilities for supervisors of non-certified applicators, and applicable laws and regulations. Also required shall be knowledge of current methodology and technology for the control of pesticide drift to non-target areas, the proper meteorological conditions for the application of pesticides, and the potential adverse effect of pesticides on plants, animals or humans (core exam).

The State of Maine will adopt 40 CFR 171.105 (a) (1 through 11) into Chapter 32, Competency Standards by reference.

(c) DETERMINATION OF COMPETENCY AND EXAMINATION STANDARDS. [§171.105(h)] the State of Maine has adopted examination standards or alternative determinations of competency that meet or exceed federal standards and are included.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

2. Certification Procedures for Private Applicators

A. Initial Certification

1. Any person attempting to certify as a private applicator must be at least 18 years of age.
2. Any person seeking to be certified as a private applicator must pass a written core exam and a written exam in the area of his primary commodity. Both exams shall be closed book.
3. Exams may be taken at cooperating county University of Maine Cooperative Extension offices. Exams may also be offered at other locations designated by the Board staff or available on an appointment basis at the office of the Board.
4. **Examination Procedures.** All applicants shall comply with these rules or forfeit their opportunity to complete the exams at a specified appointment.
 - a. Applicant shall present a government issued identification to the moderator prior to commencement of exams.

- b. Applicants should be present and ready to take the exams at the appointed time.
- c. Applicants shall not talk during the examination period.
- d. Applicants shall not be allowed to bring any books, papers, calculators or electronically stored data into the examining room. Pencils and work sheets will be provided and all papers shall be collected at the end of the period.
- e. Applicants shall not make notes of the exams and shall not leave the table during an exam unless authorized by the staff.

5. **Qualification Requirements.** An applicant must achieve a passing score of 80 percent on each exam.

- a. An applicant who fails the core exam may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must wait 6 more days before retaking the exam again.
- b. An applicant who fails the exam in the area of his primary commodity may not retake that examination prior to 6 days after the date of such failed examination. If an applicant fails again the applicant must wait 6 more days before retaking the exam again.
- c. Any applicant must pass both the core and at least one commodity exam within 12 months before qualifying for certification.
- d. Any applicant who violates any of the rules pertaining to examinations shall wait a minimum of 60 days before retesting.

6. Certification under this section will expire on October 31st of the third year after the date of successful completion of the exams and on October 31st of every third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.

(d) EXCEPTIONS, IF APPLICABLE. [§171.105(i)]

Not Applicable.

STATE OF MAINE EXAMS PROCESS:

Learning Materials:

The State of Maine provides for certification by examination only. Learning materials needed for examination preparation are identified in the examination. The learning materials can be purchased through the University of Maine Cooperative Extension

The State of Maine uses “core” learning materials developed by the University of Maine Cooperative Extension and the State of Maine Department of Agriculture, Conservation and Forestry.

Learning materials for the commodity examination preparation have been developed by the University of Maine Cooperative Extension and the State of Maine Department of Agriculture, Conservation and Forestry supported with EPA OPP/Worker Safety Branch funds.

Learning materials are carefully reviewed, vetted for applicability, and evaluated for quality and accuracy to determine compliance with federal requirements before being incorporated into the state program.

State-specific materials such as state laws and regulations are also part of the learning materials used for examination preparation.

Learning materials undergo periodic review by the University of Maine Cooperative Extension and the State of Maine Department of Agriculture, Conservation and Forestry, to determine whether the materials are relevant, practical, meet the needs of applicators and address pesticide use and safety.

The State of Maine does not allow for use of reference materials during the examination.

Examinations:

The State of Maine Department of Agriculture, Conservation and Forestry (MDACF) offers three different options to take the private exams.

Option 1: Applicants may elect to take the exams at the MDACF office in Augusta, Maine. The exams in Augusta are offered once per month.

Option 2: Take the exam at testing centers located across the State of Maine.

Option 3: Applicants may take the exam at a local University of Maine Cooperative Extension office. All exam options are proctored by designated BPC staff who are not seeking certification at an exam he/she/they are proctoring.

Examination questions are designed and constructed using professional practices developed by staff who are trained in testing techniques. Questions are evaluated for difficulty, fairness, bias, and other factors before being included in any exam.

The questions reflect the content of the educational materials. The goal is to determine the ability of the candidate’s ability to apply the knowledge gained from examination preparation.

Types of questions include true/false and multiple choice. The exams include a pesticide label with five to ten related questions.

The response options to examination questions are developed to ensure they reflect the questions and promote knowledge and comprehension.

Examination questions left unanswered are counted as incorrect.

The State of Maine uses a passing score of 80% for private certification as the measure of demonstrated competency. Based on certification program historical data and analytics,

established passing scores have proven to be sufficient to ensure a minimum standard of competency.

The passing score for all examinations is communicated at the outset of the exam as well as in examination informational materials.

Exam passing rates vary by category. The number of exam questions varies by category, ranging from 25 questions to 100 questions.

Exam candidates are notified via email/US Mail of their score within 10 days of exam completion.

Examination Data:

In preparation for the FIFRA Cooperative Agreement Annual End of Year reporting, the State of Maine reviews pesticide violations to determine if any areas related to federal requirements may need additional emphasis (e.g., label violations, use information, etc.). Insights gained from this exercise may be incorporated into examination reviews or continuing education sessions. Much of this information is included in CPARD as well as the FIFRA Cooperative Agreement Template.

SUMMARY:

In summary, the Maine SLA reviews examination test questions, exam preparation materials and the number and types of questions included in the examination to maintain a rigorous program that assures competence of applicators and measures performance.

SECTION 8. RECERTIFICATION STANDARDS. [§ 171. 107]

(a) State of Maine standards for recertification for applicators of restricted use pesticides meets or exceeds standards set forth by the EPA

40 CFR § 171.107

States must provide documentation that the state standards for the recertification of applicators of restricted use pesticides meet or exceed those standards prescribed by the Agency under § 171.107 (and listed in Appendix B). Such documentation must include a statement that the state has adopted its own standards that meet or exceed the standards for recertification prescribed by the Agency under § 171.107 and a detailed description of all of the State standards for recertification of private and commercial applicators, including all the following:

- *The certification period, which may not exceed five years.*
- *If recertification is based upon written examination, a description of the state's process for reviewing, and updating as necessary, the written examination(s) to ensure that the written examination(s) evaluates whether a certified applicator demonstrates the level of competency required by § 171.103 for commercial applicators or § 171.105 for private applicators.*
- *If recertification is based upon continuing education, an explanation of how the quantity, content, and quality of the State's continuing education program ensures that a certified applicator continues to demonstrate the level of competency required by § 171.103 for commercial applicators or § 171.105 for private applicators, including but not limited to:*
 - o *(A) The quantity of continuing education required to maintain certification.*
 - o *(B) The content that is covered by the continuing education program and how the state ensures the required content is covered.*
 - o *(C) The process the state uses to approve continuing education courses or events, including information about how the state ensures that any continuing education courses or events verify the applicator's successful completion of the course or event.*
 - o *(D) How the state ensures the ongoing quality of the continuing education program.*
- *If the state has adopted use of limited use category certifications, then the state must provide a detailed description of the recertification standards for the limited use category and how those standards meet or exceed the standards prescribed by the Agency under § 171.107.*

State Response: The specific provisions that accomplish the adoption of the Federal standards are in Chapter 31 for Commercial Applicators and Chapter 32 for Private Applicators.

State Affirmation Statement: The state has adopted the standards for recertification that meet or exceed the Federal standards for recertification § 171 .107.

(A) The quantity of continuing education required to maintain certification

The certification period is three years for both commercial and private applicators.
Chapter 31(Commercial) and Chapter 32 (Private)

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

5. Certification Procedures for Commercial Applicators

VI. **Expiration.** Certification under this Section will expire on December 31st of the third year after the date of successful completion of required exams and on December 31st of every third year thereafter unless a special restricted certification period is assigned by the Board or Board staff.

VII. An applicant's original certification period shall not be extended due to the applicant qualifying for another category or upgrading to the master level.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

C. **Expiration.** Private applicator licenses are issued on a three-year period and will expire on October 31st of the third year. Any person who has accumulated the required number of recertification credits must apply for license renewal within one year of the expiration date of the license or the recertification credits are forfeited and that person must retake and pass both the core and commodity exams to again be eligible for licensing.

(B) The content that is covered by the continuing education program and how the state ensures the required content is covered

Recertification is based on continuing education credits. Recertification credits are awarded based on the subject matter, including but not limited to; applicable laws and regulations, environmental hazards, calibration, new application techniques, label review, applicator safety, storage and disposal, pest identification and control, and integrated pest management.

For courses that are held in the state and are in person, BPC staff attend when feasible to monitor audience attendance, course content, delivery and awarding of credits. For virtual courses, the program sponsor provides a link for a BPC staff to participate and monitor. For courses BPC staff cannot attend, a MDACF person is assigned the duty to verify that the applicators were in attendance and monitor course content. For online courses, the program administrator provides attendees with a quiz to ensure attendees participated in the entire program and understand the fundamental content. The quiz is graded and those achieving a score of 80 % or greater will receive the credit.

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

5. Certification Procedures for Commercial Applicators

B. Recertification of Applicators

I. Persons with current valid certification may renew that certification by either providing documentation from a substantially equivalent professional certification program approved by the board or by accumulating recertification credits during the certification period described in Section 5(A)VI according to the following schedule:

- a. **Master level** - 9 credit hours in subject areas applicable to the categories/subcategories in which the licensee is certified.
 - b. **Operator level** - 6 credit hours in subject areas applicable to the categories/subcategories in which the licensee is certified.
- II. Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.
- a. Board staff will review program agendas and assign credit values. Board staff will monitor programs as time permits.
- III. Credit will be allowed for topics including, but not limited to:
- a. Applicable laws and regulations.
 - b. Environmental hazards.
 - c. Calibration and new application techniques.
 - d. Label review.
 - e. Applicator safety.
 - f. Storage and disposal.
 - g. Pest identification and control.
 - h. Integrated pest management.
- IV. Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting with details of the agenda. Board staff will review program agendas and assign credit values.
- a. One credit will be assigned for each 1 hour of presentation on appropriate topics.
 - b. An individual who conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each 1 hour of presentation on appropriate topics.
 - c. An individual who organizes a meeting shall be required to maintain a sign-up sheet and supervise the signing of the sheet by all applicators attending the program. That individual shall submit the signup sheet to the Board at the same time the verification attendance forms are collected and submitted to the Board.
- V. For in state programs, applicants must submit verification of attendance at approved programs to the Board. For out of state programs, applicators must submit verification of attendance; a copy of the agenda or other description of the

presentations attended. The agenda must show the length of each presentation and describe what was covered.

- VI. A person who fails to accumulate the necessary credits during their first three- year certification period will have to retake and pass all exam(s) required for initial certification. If a person fails to accumulate the necessary credits again that person must retake and pass all exam(s) required for initial certification and within one year thereafter, obtain the balance of the recertification credits which that person failed to accumulate during the previous certification period. If that person does not obtain the balance of credits needed, the Board will not renew their license until the make-up credits are accrued.
- VII. Applicants must attend the entire approved program(s) for which recertification credit is sought. No other person may complete or sign a verification form on another applicator's behalf. Any form that is completed or signed by a person other than the applicator will be deemed a fraudulent report and will not be approved by the Board for recertification credit(s). Any credit(s) approved by the Board pursuant to an attendance verification form which is subsequently determined by the Board to have been completed or signed by a person other than the applicator shall be void and may not be counted towards the applicator's recertification requirements; and any recertification issued on the basis of such credits shall be void.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

1. Recertification for Private Applicators.

1. Any person with current valid certification may renew that certification by accumulating 6 recertification credits during the certification period described in Chapter 32; Section 2(A)6.
2. Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.
3. Credit will be allowed for topics including, but not limited to:
 - a. Applicable laws and regulations.
 - b. Environmental hazards.
 - c. Calibration and new application techniques.
 - d. Label review.
 - e. Applicator safety.
 - f. Storage and disposal.
 - g. Pest identification and control.
 - h. Integrated pest management.
4. Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting and submit details of the pesticide topics, including titles and length of time devoted to them. Board staff will review program agendas and assign credit values. Board staff will monitor programs as time permits.

- a. A minimum credit of one hour shall be assigned for each one hour of presentation on appropriate topics.
 - b. An individual conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each 1 hour of presentation on appropriate topics.
5. For in state programs, each participant will complete a form to verify attendance at each program for which credit is allowed at the site. For out of state programs, applicators must notify the Board about attendance and send a registration receipt or other proof of attendance and a copy of the agenda or other description of the presentations attended. The agenda must show the length of each presentation and describe what was covered.
 6. A person who fails to accumulate the necessary credits will have to re-apply to take the exams required for initial certification.

(C)The process the state uses to approve continuing education courses or events, including information about how the state ensures that any continuing education courses or events verify the applicator's successful completion of the course or event.

The criteria for approving courses are in both Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS, and Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS.

Recertification credits will be available through Board-approved meetings including but not limited to industry and trade organization seminars, workshops where pesticide topics are presented and approved home study courses.

Board staff will review program agendas and assign credit values. Board staff will monitor programs as time permits.

Persons organizing meetings for which they want credits awarded must contact the Board in writing at least 15 days in advance of the meeting and submit details of the pesticide topics, including titles and length of time devoted to them. Board staff will review program agendas and assign credit values. Board staff will monitor programs as time permits.

For in state programs, each participant will complete a form to verify attendance at each program for which credit is allowed at the site. For out of state programs, applicators must notify the Board about attendance and send a registration receipt or other proof of attendance and a copy of the agenda or other description of the presentations attended. The agenda must show the length of each presentation and describe what was covered.

Applicants must attend the entire approved program(s) for which recertification credit is sought. No other person may complete or sign a verification form on another applicator's behalf. Any form that is completed or signed by a person other than the applicator will be deemed a fraudulent report and will not be approved by the Board for recertification credit(s). Any credit(s) approved by the Board pursuant to an attendance verification form which is subsequently determined by the Board to have been completed or signed by a person other than the applicator shall be void and may not be counted towards the

applicator's recertification requirements; and any recertification issued on the basis of such credits shall be void.

The recertification course information sent in for approval should include the agenda, program description, speaker bio(s), time frame(s) for topics, and other program information. A recertification course will receive one credit for each hour of presentation on the appropriate topics. For courses that are held in the state and are in person, BPC staff attend as feasible to determine attendance and to ensure coverage of course content. For courses that BPC cannot attend, an MDACF staff is assigned the duty to verify that the applicators were in attendance. For online courses, the program administrator provides applicators with a "final" quiz to ensure that the applicators watched the entire program. The quiz is graded and those achieving a score of 80% or greater receive credit.

The Maine Department of Agriculture, Conservation, and Forestry allows applicators to participate in virtual recertification programs to earn credits. The same standards must be met as outlined in the in- person criteria.

(D) How the state ensures the ongoing quality of the continuing education program.

BPC staff annually review recertification course criteria. If a course does not meet the established criteria, credits are not issued.

For courses that are held in the state and are in person, BPC staff attend when feasible to monitor audience attendance, course content, delivery and awarding of credits. For virtual courses, the program sponsor provides a link for a BPC staff to participate and monitor. For courses BPC staff cannot attend, a MDACF person is assigned the duty to verify that the applicators were in attendance and monitor course content. For online courses, the program administrator provides attendees with a quiz to ensure attendees participated in the entire program and understand the fundamental content. The quiz is graded and those achieving a score of 80 % or greater will receive the credit.

SUMMARY

A certified applicator may be found eligible for recertification upon successfully completing a continuing education program pursuant to the certifying authority's State of Maine's approved certification plan.

- The Board of Pesticides Control ensures that the quantity, content, and quality of a continuing education program to maintain applicator certification and demonstrates the level of competency required by § 171.103 for commercial applicators or § 171.105 for private applicators.
- Any continuing education course or event relied upon for applicator recertification must be approved by the Board of Pesticides Control as being suitable for its purpose in the certifying authority's recertification process.
- The Board of Pesticides Control ensures that any continuing education course or event, including an online or other distance education course or event, relied upon for applicator recertification includes a process to verify the applicator's successful completion of the course or event.

Guidelines for In-Person, Virtual, Taped Video Courses and On-Line Courses that Charge a Fee.

The Board of Pesticides Control (BPC) has established a list of guidelines to help trade organizations, agencies, companies, and educational institutions who are developing and submitting recertification programs. This will include programs that are in person, virtual, taped video presentations, and on-line courses that charge a fee.

The BPC already has standard operating procedures in place that must be followed for programs seeking credit approval. That documentation can be found in Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS and Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS.

STANDARD OPERATING PROCEDURES FOR ALL RECERTIFICATION PROGRAMS

1. All recertification programs must be approved by BPC staff at least 15 days in advance of the program. The details of the program, including an agenda, must be submitted to the BPC in writing, by email, or through the BPC portal (MePERLS). When the BPC approves a program, an individual “CR Number” is assigned to each individual program and sent to the program sponsor for all future correspondence.
2. One credit will be assigned for each hour of presentation on appropriate topics. Appropriate topics are listed in number 5 below.
3. An individual who conducts a meeting for which the Board does assign recertification credits will be eligible for two credits for each one hour of presentation on approved topics.
4. An individual who organizes a meeting shall be required to maintain a sign-up sheet and supervise the signing of the sheet by all applicators attending the program. That individual shall submit that sign-up at the same time as the verification forms are collected in person. If the recertification program is virtual, the sponsor will provide a copy of the applicators signed up for the program to the BPC. The sign-up sheet will be sent to the BPC either in writing, by email, or on the BPC Portal (MePERLS) within two weeks after the program date. The information on the sign-up sheet must include the applicator’s legal name, license number, and email address.
5. Credit will be allowed for topics including, but not limited to:
 - a. Applicable laws and regulations.
 - b. Environmental hazards.
 - c. Calibration and new application techniques.
 - d. Label review.
 - e. Applicator safety.
 - f. Storage and disposal.
 - g. Pest identification and control.
 - h. Integrated pest management.
6. A BPC staff member will not be charged any fee to attend a credit program whether it be in person or virtual.

Applicators must attend the entire approved program(s) for which recertification credit is sought. No other person may complete or sign a verification form on another applicator’s behalf. Any form that is completed or signed by a person other than the applicator will be deemed a fraudulent report and will not be approved by the Board for recertification credit(s). Any credit(s) approved by the Board pursuant to an attendance verification form which is subsequently determined by the Board to have been completed or signed by a person other than the applicator shall be void and may not be counted towards the applicator’s recertification requirements; and any recertification issued on the basis of such credits shall be void.

Additionally, there are specific requirements for each type of recertification program.

IN-PERSON

1. An individual who organizes a meeting shall be required to maintain a sign-up sheet and supervise the signing of the sheet by all applicators attending the program.
2. The sign-up sheet and verification attendance forms will be collected at the end of the program by a BPC staff member or designated individual approved by the BPC. That individual shall submit that sign-up at the same time as the verification forms are collected in person. The sign-up sheet will be sent to the BPC either in writing, by email, or through the BPC portal (MePERLS) within two weeks after the program date. The information on the sign-up sheet must include the applicator's full legal name, license number, and email address.

VIRTUAL

1. At least 15 days before the program, the individual who organizes a meeting must provide the virtual program link for applicators to register for meetings open to the public. This link will be posted on the BPC credit calendar. If the program is not open to the public, a link is still required to allow BPC staff to monitor the program.
2. The individual must be able to verify that the applicators seeking credits watched the entire program by one or both of the following methods:
 1. Offering a quiz after the presentation for which passing score must be 80 percent or greater; OR
 2. Offering poll questions during the presentation. For this verification approach:
 - a. the sponsor will digitally record the answers to the poll questions,
 - b. poll questions will be displayed at least every 15 minutes, and
 - c. attendees seeking credit must answer 75 percent of the poll questions.
3. The individual must provide the BPC with a verified list of applicators which includes each applicator's full legal name, Maine license number(s), and email address of the applicator within two weeks from the program date.

TAPED VIDEOS

1. The individual who organizes a training must provide a copy of the video and a relevant quiz to the BPC for review at least 15 days in advance of offering the training to the public via the BPC credit calendar or to specific trade organizations, agencies, companies, and educational institutions.
2. The individual must be able to verify the applicators seeking credit by requiring completion of a quiz after the video for which the passing score must be 80 percent or greater.
3. An individual who organizes a meeting must maintain a sign-up sheet and must supervise and verify the signing of the sheet by all applicators attending the program. The individual must, within two weeks after the program date, provide the BPC with a sign-up sheet which includes each applicator's full legal name, Maine license number(s), and email address.

4. That individual shall, at the same time, collect and submit the sign-up sheet and completed quizzes* to the BPC.
5. *Where BPC staff members are attending in-person, the required quiz may be replaced with verification attendance forms.

ONLINE COURSES THAT CHARGE A FEE

The Board of Pesticides Control (BPC) offers numerous pre-approved online recertification credit programs. These programs charge a fee which is paid for by the attendee. A list of these programs can be found at: https://www.maine.gov/dacf/php/pesticides/credit_calendar.shtml

1. The persons organizing such trainings must provide, for BPC review, a copy of the video or link to the video and a quiz.
2. The persons organizing the training must be able to verify the applicators seeking credit by offering a quiz after the video for which the passing score needs to be 80 percent or greater
3. The persons organizing the training must provide the BPC with the applicator's full legal name, Maine license number(s), and email address within two weeks of program completion.
4. The organization must provide the date on which the applicator purchased the training video as well as the date on which the applicator successfully completed the quiz.

SECTION 9 . STANDARDS FOR THE DIRECT SUPERVISION OF NONCERTIFIED APPLICATORS. [§ 171. 201]

(a) Option 2: State adopts EPA’s federal standards for direct supervision

40 CFR § 171.201

States must provide documentation that their state standards for the direct supervision of noncertified applicators by certified private and commercial applicators of restricted use pesticides meet or exceed those standards prescribed by the Agency under § 171.201 (and listed in Appendix C). If the state has adopted the Federal standards for direct supervision of noncertified applicators by certified private and/or commercial applicators prescribed by the Agency under § 171.201, then the state must provide a statement that the state has adopted the standards for direct supervision of noncertified applicators by certified private and/or commercial applicators prescribed by the Agency under § 171.201 and a citation of the specific state laws and/or regulations demonstrating that the State has adopted such standards.

State Response: The citation of the specific provisions demonstrating that the state has adopted Federal standards for direct supervision is Chapter 31 for Commercial Applicators and Chapter 32 for Private Applicators.

State Affirmation Statement: The state has adopted the standards for direct supervision of noncertified applicators by certified private and/ or commercial applicators prescribed by the Agency under 40 CFR § 171 .201.

The reference is documented in Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS and, Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS.

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

1. Individual Certification and Company/Agency Licensing Requirements

- B All commercial applicators responsible for the supervision of noncertified applicators of restricted use pesticides must ensure compliance with training, record keeping, and all other requirements as indicated in 40 CFR 171.201(c) “Supervision of Noncertified Applicators” (2017).

To address the direct supervision of non-certified applicators, The State of Maine will adopt 40 CFR 171.201 by reference to Chapter 31.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

To address the direct supervision of non-certified applicators, The State of Maine will adopt 40 CFR 171.201 by reference to Chapter 32.

SECTION 10. CREDENTIALS. [§ 171. 303]

40 CFR§ 171.303

States must provide a description below of the credentials or documents the State certifying authority will issue to each certified applicator verifying certification. If applicable, states must also describe below the limited use certification credential. The limited use credential must clearly state that the applicator is only authorized to purchase and use the specific restricted use pesticide(s) identified in that credential.

State Response: State certification sample of Commercial License is Attachment 10 A.
A sample Private License is located Attachment 10 B.

Chapter 31: CERTIFICATION AND LICENSING PROVISIONS FOR COMMERCIAL APPLICATORS

- J. **Credentials Contact.** Licenses issued under this rule will include the following information:
- I. Full name of applicator
 - II. License number
 - III. Categories
 - IV. Expiration date
 - V. Maine statute under which license is issued.

Chapter 32: CERTIFICATION AND LICENSING PROVISIONS FOR PRIVATE APPLICATORS

3. Licensing

- E. License Issued. Licenses issued under this rule will include the following information.
- Attachment 10B, Sample of Private License
 - I. Full name of applicator
 - II. License number
 - III. Commodities and categories
 - IV. Expiration date
 - II. Maine statute under which license is issued

SECTION 11. RECIPROCITY. [40 CFR § 171.303(a)(9)]

§ 171.303(a)(9)

[Not required to be in state laws or regulations.] A State may waive any or all the procedures specified in §171.103, §171.105, and §171.107 when certifying applicators in reliance on valid current certifications issued by another State, Tribal, or Federal agency under an EPA-approved certification plan. The State must provide an explanation below of whether, and if so, under what circumstances, the State will certify applicators based in whole or in part on their holding a valid current certification issued by another State, Tribe or Federal agency.

States must also provide documentation below with their explanation to demonstrate that reciprocal certifications are subject to all the following conditions:

- A State may rely only on valid current certifications that are issued under an approved State, Tribal or Federal agency certification plan.*
- The State has examined the standards of competency used by the State, Tribe, or Federal agency that originally certified the applicator and has determined that, for each category of certification that will be accepted, they are comparable to its own standards.*
- Any State that chooses to certify applicators based, in whole or in part, on the applicator having been certified by another State, Tribe, or Federal agency, must include in its plan a mechanism that allows the State to terminate an applicator's certification upon notification that the applicator's original certification terminates because the certificate holder has been convicted under section 14(b) of FIFRA or has been subject to a final order imposing a civil penalty under section 14(a) of FIFRA.*
- The State issuing a certification based in whole or in part on the applicator holding a valid current certification issued by another State, Tribe or Federal agency must issue an appropriate State credential or document to the applicator.*

State Response: The State of Maine, Board of Pesticides Control reserves the right to grant reciprocity.

State Affirmation Statement: If the Board of Pesticides Control determines that there is an immediate need, an applicator could be reviewed for reciprocity.

Reciprocity Review

An applicator's current license will need to be evaluated for the following criteria.

1. The license is valid for the state in which it was awarded.
2. The applicator is in good standing with the state where the license was awarded.
3. The competency standards meet or exceed the State of Maine standards for the specific category as outlined in Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS.
4. The certified applicators' reciprocal license is only valid for the calendar year.
5. The applicator is 18 years old or older.
6. The applicator has the appropriate insurance coverage.
7. The specific need for their services is immediate as determined by the BPC, thus, not allowing the applicator time to follow the proper procedures for licensure in Maine.
8. The applicator must abide by all laws and rules of the State of Maine.
9. The applicator will be required to file all of the appropriate reports as required by the BPC.
10. The applicator must pay appropriate licensing fees.
11. The applicator will be provided a copy of the written regulations manual.

In the event that the BPC decides to grant reciprocity, enforcement actions relative to the applicators' certification will be covered at the bi-annual FIFRA meetings with the other New England states. If a certifying authority revokes or terminates a certification, the BPC would review the reason and, if determined necessary, move toward adjudicative process to revoke or terminate the applicator's certification for Maine.

The State of Maine has the right to terminate a reciprocal based on conviction under FIFRA 14(b)/civil order (a). Title 22 M.R.A. Chapter 258-A: BOARD OF PESTICIDES CONTROL

8. Revocation. The District Court may suspend or revoke the certification or license of a licensee or certificate holder upon a finding that the applicant:

A. Is no longer qualified; [PL 1975, c. 397, §2 (NEW).]

B. Has engaged in fraudulent business practices in the application or distribution of pesticides; [PL 1975, c. 397, §2 (NEW).]

C. Used or supervised the use of pesticides applied in a careless, negligent or faulty manner or in a manner which is potentially harmful to the public health, safety or welfare or the environment; [PL 1975, c. 397, §2 (NEW).]

D. Has stored, transported or otherwise distributed pesticides in a careless, faulty or negligent manner or in a manner which is potentially harmful to the environment or to the public health, safety or welfare; [PL 1975, c. 397, §2 (NEW).]

E. Has violated the provisions of this chapter or the rules and regulations issued hereunder; [PL 1975, c. 397, §2 (NEW).]

F. Has made a pesticide recommendation, use or application, or has supervised such use or application, inconsistent with the labelling or other restrictions imposed by the board; [PL 1975, c. 397, §2 (NEW).]

G. Has made false or fraudulent records or reports required by the board under this chapter or under regulations pursuant thereto; [PL 1981, c. 470, Pt. A, §67 (AMD).]

H. Has been subject to a criminal conviction under section 14 (b) of the amended FIFRA or a final order imposing a civil penalty under section 14 (a) of the amended FIFRA; or [PL 1981, c. 470, Pt. A, §67 (AMD).]

I. Has had the license or certificate, which supplied the basis for the Maine license or certification pursuant to subsection 10, revoked or suspended by the appropriate federal or other state government authority. [PL 1977, c. 694, §341 (NEW).]

[PL 1983, c. 819, Pt. A, §49 (AMD); PL 1999, c. 547, Pt. B, §78 (AMD); PL 1999, c. 547, Pt. B, §80 (AFF).]

SECTION 12. REPORTS TO EPA. [40 CFR § 171.303(c)]

§ 171.303(c)

Requirement to submit reports to the Agency. The State must agree to submit the following reports to the Agency in a manner and containing the information that the Agency requires:

- (1) An annual report to be submitted by the State lead agency to the Agency by the date established by the Agency that includes all of the following information:***
 - (i) The number of new general private applicator certifications and recertifications issued during the last 12 month reporting period, and total number of applicators holding a valid general private applicator certification at the end of the last 12 month reporting period.***
 - (ii) For each private applicator category specified in the certification plan, the numbers of new certifications and recertifications issued during the last 12 month reporting period, and the total number holding valid certifications in each category at the end of the last 12 month reporting period.***
 - (iii) The numbers of new commercial applicator certifications and recertifications issued during the last 12 month reporting period, and the total number of applicators certified in at least one commercial applicator certification category at the end of the last 12 month reporting period.***
 - (iv) For each commercial applicator certification category or subcategory specified in the certification plan, the numbers of new certifications and recertifications issued during the last 12 month reporting period, and the total number of commercial applicators holding a valid certification in each category or subcategory at the end of the last 12 month reporting period.***

State Affirmation Statement: The State of Maine will submit the required annual reports to the EPA that the Agency requires. At the time of completion of this plan reports were submitted by BPC through EPA's Certification Plan and Reporting Database (CPARD) system. The State of Maine will submit "Any other reports reasonably required by the Agency in its oversight of restricted use pesticides" as outlined in 171.303(c)(2).

The Director of the BPC will prepare and submit to the EPA administrator an annual report by January 30th detailing the activities of the previous federal fiscal year. The report will contain the following information:

- The number of new general private applicator certifications and recertifications issued during the last 12-month reporting period, and total number of applicators holding a valid general private applicator certification at the end of the last 12-month reporting period.
- For each private applicator category specified in the certification plan, the numbers of new certifications and recertifications issued during the last 12-month reporting period, and the total number holding valid certifications in each category at the end of the last 12-month reporting period.
- The numbers of new commercial applicator certifications and recertifications issued during the last 12-month reporting period,

and the total number of applicators certified in at least one commercial applicator certification category at the end of the last 12-month reporting period.

- For each commercial applicator certification category or subcategory specified in the certification plan, the numbers of new certifications and recertifications issued during the last 12-month reporting period, and the total number of commercial applicators holding a valid certification in each category or subcategory at the end of the last 12-month reporting period.
- A description of any modifications made to the approved certification plan during the last 12-month reporting period that have not been previously evaluated by the Agency under § 171.309(a)(3).
- A description of any proposed changes to the certification plan that the State anticipates making during the next reporting period that may affect the certification program.
- A summary of enforcement activities related to the use of restricted use pesticides during the last 12-month reporting period.

SECTION 13. IMPLEMENTATION TIMEFRAME. [40 CFR § 171. 303(b)(6)(v)]

SUMMARY: Below is a detailed estimate of full implementation of the Maine Certification and Training Plan recognizing the three -year recertification period. The estimated completion of Learning Materials, Exams, & Continuing Education is December 31, 2026. Since all commercial applicator credentials expire on December 31st, conservative estimate for full implementation under the new standards is December 31, 2029.

Full implementation will be December 31, 2029.

Preliminary Actions:

March 3, 2020. Maine's Certification and Training Plan was submitted to the US Region 1 EPA for initial review and comment.

October 4, 2021. Detailed review of Maine's revised plan for certification and training was received.

July 1, 2021. Maine's Certification and Training Plan was submitted to the US Region 1 EPA for review and comment.

September 14, 2022. Reviewed Maine Certification and Training Plan with Andrea Szylvian, EPA Region 1 Project Manager

December 16, 2022. Reviewed Maine Certification and Training Plan with Andrea Szylvian, EPA Region 1 Project Manager and Robert Koethe

May 10, 2023. Reviewed Maine Certification and Training Plan with Andrea Szylvian, EPA Region 1 Project Manager and Robert Koethe

May 15, 2023. Reviewed Maine Certification and Training Plan with Andrea Szylvian, EPA Region 1 Project Manager

Regulatory/Legislative Actions:

Winter, 2024: To address 40 CFR 171.201(b) (2)(i through iii), the State of Maine, Board of Pesticides Control will initiate rulemaking to Chapter 32: CERTIFICATION AND LICENSING PROVISIONS PRIVATE APPLICATORS to address the minimum age requirements for noncertified applicators who are a minimum of 16 years old and who may apply restricted use pesticides under the direct supervision of a private applicator who is an immediate family member. 40 CFR 171.201(b) (2)(i through iii) will be adopted by reference.

State Plan Section 7.

Winter, 2024: To address 40 CFR 171.201(2) (1 to 4), the State of Maine, Board of Pesticides Control will initiate rulemaking to Chapter 32: CERTIFICATION AND LICENSING PROVISIONS PRIVATE APPLICATORS to address the direct supervision of non-certified applicators.

State Plan Section 7.

Winter, 2024: The State of Maine, Board of Pesticides Control will initiate rulemaking to Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS

To distinguish Agricultural Plant Option 3 Agricultural Fumigation category from the 7B Structural Fumigation category, the word “soil” will be added; “Agricultural Plant Option 3 Agricultural Soil Fumigation.”

The Agricultural Plant Option 3 Agricultural Soil Fumigation description will read: “This option includes commercial applicators using or supervising the use of soil fumigant pesticides in the production of crops.”

State Plan Section 3.

Winter, 2024: The State of Maine, Board of Pesticides Control will initiate rulemaking to Chapter 31: Category Standards will be added to Maine Chapter 31:

- Federal Category: “Agricultural Plant”
 - Agricultural Plant 1B-Option 1: Limited Commercial Blueberry
 - Agricultural Plant 1B-Option 2: Chemigation
 - Agricultural Plant 1B-Option 3: Agricultural Soil Fumigation Maine will adopt 40 CFR 171.103(d)(13) Soil Fumigation.
 - Agricultural Plant 1B-Option 4: Post Harvest TreatmentState Plan Sections 3 and 6.
- Federal Category: “Right of Way Pest Control:
 - Maintenance of Public Roads to Maine Vegetation Management-Rights of Way Vegetation Management and,
 - Maine Vegetation Management-General Vegetation ManagementState Plan Sections 3 and 6.
- Federal Category: Non Soil Fumigation; Maine will maintain the term “Fumigation” for the category name. In addition to the stated competencies, commercial applicators obtaining certification in the category must demonstrate practical knowledge of topics indicated in 40 CFR 171.103(d)(14).
State Plan Sections 3 and 6.
- Federal Category: Aerial; Maine will maintain the term Aerial for the category name. In addition to the stated competencies, commercial applicators obtaining certification in the category must demonstrate practical knowledge of topics indicated in 40 CFR 171.103(d)(15).
State Plan Sections 3 and 6.

Winter, 2024: The State of Maine, Board of Pesticides Control will initiate rulemaking to Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS, Competency Standards of Certification of Commercial Applicators, to adopt 40 CFR 171.103(c) (1 through 10).

State Plan Section 6.

Winter, 2024: The State of Maine Board of Pesticides Control will initiate rulemaking to Chapter 32: CERTIFICATION AND LICENSING PROVISIONS PRIVATE APPLICATORS to adopt:

Competency Standards:

- *Soil Fumigation Competency Standards at 40 CFR 171.105(d); adopted by reference in Chapter 32.*
- *Non-Soil Fumigation Competency Standards at 40 CFR 171.105(e); adopted by reference in Chapter 32.*
- *Aerial Pest Control Competency Standards at 40 CFR 171.105(f); adopted by reference in Chapter 32.*

State Plan Section 4

Winter, 2024: The State of Maine Board of Pesticides Control will initiate rulemaking to Chapter 32: CERTIFICATION AND LICENSING PROVISIONS PRIVATE APPLICATORS, Competency Standards for Certification, to adopt 40 CFR 171.105(a) (1 through 11) by reference.

State Plan Sections 4 and 7.

Winter, 2024: The State of Maine Board of Pesticides Control will initiate rulemaking to Chapter 31: CERTIFICATION AND LICENSING PROVISIONS/COMMERCIAL APPLICATORS Standards for Direct Supervision, to adopt 40 CFR 171.201 by reference.

State Plan Section 9.

Winter, 2024: The State of Maine Board of Pesticides Control will initiate rulemaking to Chapter 32: CERTIFICATION AND LICENSING PROVISIONS PRIVATE APPLICATORS, Standards for Direct Supervision, to adopt 40 CFR 171.201 by reference.

State Plan Section 9.

Learning Materials, Exams, & Continuing Education:

Years 2024-2026: Review and as necessary revise University of Maine Cooperative Extension Core Manual, other category manuals and learning materials.

Years 2024-2026: Review and as necessary revise exams.

Attachments

Attachment 1C1; 2023 Board of Pesticides Control Staff

2022 Board of Pesticides Control Staff SLA Personnel		
Position Title	Function	Full Time Employees
Acting Director <i>John Pietroski</i>	Rulemaking, Special Projects, Legislation, General Information, Board Meetings, Variances	1
Manager of Compliance <i>Alex Peacock</i>	Complaints/Incidents, Enforcement, Pesticide Disposal	1
Manager of Pesticide Programs <i>John Pietroski</i>	Licensing, Recertification Programs, Exams, Federal Grants, Pesticide Use	1
Toxicologist <i>Pam Bryer</i>	Food Safety, Health Issues, Pesticide Labels, Pesticide Risks and Human Health	1
Registrar <i>Mary Tomlinson</i>	Pesticide Registrations, Pesticide Labeling, Emergency Registration, Special Local Needs Registration, Experimental Use Permits, Limited Use Permits	0.5
Water Quality Specialist <i>Mary Tomlinson</i>	Water Quality, Endangered Species.	0.5
Policy & Regulations Specialist <i>Karla Boyd</i>	Rulemaking, BPC Portal, BPC Website, Got Pest Website, Yardscaping, School IPM	1
Certification & Licensing Specialist <i>Amanda Couture</i>	Licensing, Recertification Programs, Exams, Manuals Worker Protection Standards, Pesticide Use	1
Office Manager <i>Peggy Lamb</i>	General Information, Licensing Information, Exam Scheduling, Accounts, Applicator Licenses	1
Licensing Clerk <i>Jan Betts</i>	Applicator/Dealer Licenses, Recertification Credits, Pesticide Sales and Use Data, Exam Scheduling	1
Inspector <i>Lucien Saucier</i>	District 2 – Central and Midcoast Maine	1
Inspector <i>Jennie Poisson</i>	District 1 – Southern Maine	0.75
Inspector <i>Heidi Nelson</i>	District 3 – Downeast Maine	0.75
Inspector <i>Shannon Gustafson</i>	District 4 – Northern Central Maine and	0.75
Inspector <i>Keith Brown</i>	District 5 – Northern Maine	0.75

Attachment 1C2; 2023 Board of Pesticides Control – Public Board of Directors

- **Curtis C. Bohlen**, Director, Casco Bay Estuary Partnership, University of Southern Maine, Muskie School of Public Service, Portland (*public member*)
- **Dominic LaJoie**, Van Buren (*agricultural expertise*)
- **Robert Carlton**, Kingfield (*forestry expertise*)
- **John M. Jemison, Jr.**, water quality and soil specialist, University of Maine Cooperative Extension, Orono (*water quality and soil specialist*)
- **Patricia Ianni**, Falmouth (*public member*)
- **Dave Adams**, commercial applicator, Dasco Inc, Presque Isle (*commercial applicator expertise*)
- **Dr. Mark Neavyn**, Medical

CHAPTER 103

SUBCHAPTER 2-A

MAINE PESTICIDE CONTROL ACT OF 1975

§601. Title

This subchapter may be known and cited as the "Maine Pesticide Control Act of 1975." [PL 2005, c. 620, §1 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 2005, c. 620, §1 (AMD).

§602. Enforcing official

This subchapter is administered by the Board of Pesticides Control, referred to in this subchapter as the "board," established in Title 5, section 12004-D, subsection 3 and further described in Title 22, chapter 258-A. [PL 2005, c. 620, §2 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1979, c. 731, §19 (AMD). PL 1989, c. 841, §1 (AMD). PL 1989, c. 878, §E1 (AMD). PL 1993, c. 349, §22 (RPR). PL 2005, c. 620, §2 (AMD).

§603. Declaration of purpose

(REPEALED)

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 2005, c. 382, §A4 (RP).

§604. Definitions

As used in this subchapter, unless the context otherwise indicates, the following terms have the following meanings. [PL 2005, c. 620, §3 (AMD).]

1. Active ingredient. "Active ingredient" means any ingredient that will prevent, destroy, repel, control or mitigate pests or that will act as a plant regulator, defoliant or desiccant.

[PL 2005, c. 620, §3 (AMD).]

2. Adulterated. "Adulterated," as applied to a pesticide, means that:

A. The pesticide's strength or purity falls below the standard of quality as expressed on the labeling under which it is sold; [PL 2005, c. 620, §3 (NEW).]

B. A substance has been substituted wholly or in part for the pesticide; or [PL 2005, c. 620, §3 (NEW).]

C. A valuable constituent of the pesticide has been wholly or in part abstracted. [PL 2005, c. 620, §3 (NEW).]

[PL 2005, c. 620, §3 (AMD).]

3. Animal. "Animal" means all vertebrate and invertebrate species, including but not limited to humans and other mammals, birds, fish and shellfish.

[PL 2005, c. 620, §3 (AMD).]

4. Beneficial insects. "Beneficial insects" means those insects that, during their life cycle, are effective pollinators of plants, are parasites or predators of pests or are otherwise beneficial.

[PL 2005, c. 620, §3 (AMD).]

5. Commissioner.

[PL 2005, c. 620, §3 (RP).]

6. Defoliant. "Defoliant" means any substance or mixture of substances intended for causing the leaves or foliage to drop from a plant, with or without causing abscission.

[PL 1975, c. 382, §3 (NEW).]

7. Desiccant. "Desiccant" means any substance or mixture of substances intended for artificially accelerating the drying of plant tissue.

[PL 1975, c. 382, §3 (NEW).]

8. Device. "Device" means any instrument or contrivance, other than a firearm, that is intended for trapping, destroying, repelling or mitigating any pest or any other form of plant or animal life, other than a human being and other than a bacterium, virus or other microorganism on or in a living human being or other living animal. "Device" does not include equipment used for the application of pesticides when sold separately from pesticides.

[PL 2005, c. 620, §3 (AMD).]

9. Distribute. "Distribute" means to offer for sale, hold for sale, sell, barter, ship, deliver for shipment or receive and, having so received, deliver or offer to deliver pesticides in this State.

[PL 2005, c. 620, §3 (AMD).]

10. Environment. "Environment" includes water, air and land and all plants and human beings and other animals living therein and the interrelationships that exist among these.

[PL 2005, c. 620, §3 (AMD).]

11. EPA. "EPA" means the United States Environmental Protection Agency.

[PL 1975, c. 382, §3 (NEW).]

12. FIFRA. "FIFRA" means the Federal Insecticide, Fungicide and Rodenticide Act.

[PL 1975, c. 382, §3 (NEW).]

13. Fungi. "Fungi" means all nonchlorophyll-bearing thallophytes, that is, all nonchlorophyll-bearing plants of a lower order than mosses and liverworts, including but not limited to rusts, smuts, mildews, molds, yeasts and bacteria, except those on or in living human beings or other living animals, and except those in or on processed food, beverages or pharmaceuticals.

[PL 2005, c. 620, §3 (AMD).]

14. Highly toxic pesticide. "Highly toxic pesticide" means any pesticide determined to be a highly toxic pesticide under FIFRA, Section 25(c)(2) or by the board under section 610, subsection 1, paragraph B.

[PL 2005, c. 620, §3 (AMD).]

15. Imminent hazard. "Imminent hazard" means a situation that exists when the continued use of a pesticide during the time required for cancellation proceedings pursuant to section 609 would likely result in unreasonable adverse effects on the environment or will involve unreasonable hazard to the survival of a species declared endangered by the United States Secretary of the Interior under United States Public Law 91-135.

[PL 2005, c. 620, §3 (AMD).]

16. Inert ingredient. "Inert ingredient" means an ingredient that is not an active ingredient.

[PL 2005, c. 620, §3 (AMD).]

17. Ingredient statement. "Ingredient statement" means a statement of the following:

A. The name and percentage of each active ingredient together with the total percentage of the inert ingredients in the pesticide; and [PL 2005, c. 620, §3 (NEW).]

B. If the pesticide contains arsenic in any form, the percentages of total and water-soluble arsenic, each calculated as elemental arsenic. [PL 2005, c. 620, §3 (NEW).]

[PL 2005, c. 620, §3 (AMD).]

18. Insect. "Insect" means any of the numerous small invertebrate animals generally having the body more or less obviously segmented, for the most part belonging to the class insecta, comprising 6-legged, usually winged forms, including but not limited to beetles, bugs, bees and flies, and to other allied classes or arthropods whose members are wingless and usually have more than 6 legs, including but not limited to spiders, mites, ticks, centipedes and wood lice.

[PL 2005, c. 620, §3 (AMD).]

19. Label. "Label" means the written, printed or graphic matter on, or attached to, the pesticide or device or any of its containers or wrappers.

[PL 1975, c. 382, §3 (NEW).]

20. Labeling. "Labeling" means the label and all other written, printed or graphic matter:

A. Accompanying the pesticide or device at any time; or [PL 2005, c. 620, §3 (NEW).]

B. To which reference is made on the label or in literature accompanying the pesticide or device, except current official publications of EPA, the United States Department of Agriculture, the United States Department of the Interior, the United States Department of Health and Human Services, a state experiment station, a state agricultural college or other similar federal or state institutions or agencies authorized by law to conduct research in the field of pesticides. [PL 2005, c. 620, §3 (NEW).]

[PL 2005, c. 620, §3 (AMD).]

21. Land. "Land" means all land and water areas, including airspace, and all plants, animals, structures, buildings, contrivances and machinery appurtenant thereto or situated thereon, fixed or mobile, including any used for transportation.

[PL 1975, c. 382, §3 (NEW).]

22. Nematode. "Nematode" means invertebrate animals of the phylum nemathelminthes and class nematoda, that is, unsegmented roundworms with elongated fusiform or sac-like bodies covered with cuticle, and inhabiting soil, water, plants or plant parts; nematodes may also be called nemas or eelworms.

[PL 2005, c. 620, §3 (AMD).]

23. Person. "Person" means any individual, partnership, association, fiduciary, corporation or any organized group of persons whether incorporated or not.

[PL 1975, c. 382, §3 (NEW).]

24. Pest. "Pest" means any insects, rodents, nematodes, fungi, weeds, and other forms of terrestrial or aquatic plant or animal life or viruses, bacteria or other microorganisms, except viruses, bacteria or other microorganisms on or in living human beings or other living animals, that the commissioner declares to be a pest under section 610, subsection 1, paragraph A.

[PL 2005, c. 620, §3 (AMD).]

25. Pesticide. "Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pests and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant. "Pesticide" includes "highly toxic pesticide."

[PL 2005, c. 620, §3 (AMD).]

25-A. Plant-incorporated protectant. "Plant-incorporated protectant" means a pesticidal substance that is produced and used in a living plant through genetic engineering and the genetic material necessary for the production of the pesticidal substance.

[PL 2007, c. 484, §1 (NEW).]

26. Plant regulator. "Plant regulator" means any substance or mixture of substances intended through physiological action for accelerating or retarding the rate of growth or rate of maturation or for otherwise altering the behavior of plants or the produce thereof. "Plant regulator" does not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants or soil amendments.

[PL 2005, c. 620, §3 (AMD).]

27. Protect health and the environment. "Protect health and the environment" means to protect against any unreasonable adverse effects on the environment.

[PL 2005, c. 620, §3 (AMD).]

28. Registrant. "Registrant" means a person who has registered any pesticide pursuant to the provisions of this subchapter.

[PL 1975, c. 382, §3 (NEW).]

29. Registration. "Registration" includes reregistration.

[PL 2005, c. 620, §3 (AMD).]

30. Restricted use pesticide. "Restricted use pesticide" means any pesticide or pesticide use classified for restricted use by the EPA Administrator.

[PL 2005, c. 620, §3 (AMD).]

31. Rodent. "Rodent" means any member of the animal group of the order rodentia, including but not limited to rats, mice, gophers, porcupines and squirrels.

[PL 2005, c. 620, §3 (AMD).]

32. Unreasonable adverse effects on the environment. "Unreasonable adverse effects on the environment" means any unreasonable risk to human beings or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide.

[PL 2005, c. 620, §3 (AMD).]

33. Weed. "Weed" means any plant that grows where it is not wanted.

[PL 2005, c. 620, §3 (AMD).]

34. Wildlife. "Wildlife" means all living things that are neither human, domesticated nor, as defined in this subchapter, pests, including but not limited to mammals, birds and aquatic life.

[PL 1975, c. 382, §3 (NEW).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1979, c. 731, §19 (AMD). PL 1989, c. 878, §E2 (AMD). PL 2005, c. 620, §3 (AMD). PL 2007, c. 484, §1 (AMD).

§605. Misbranded

The term "misbranded": [PL 2005, c. 620, §4 (AMD).]

1. False, misleading or inconspicuous labeling. As applied to any pesticide subject to this subchapter means that:

A. Its labeling bears any statement, design or graphic representation relative to the pesticide or to its ingredients that is false or misleading in any particular; [PL 2005, c. 620, §4 (AMD).]

B. It is an imitation of or is distributed under the name of another pesticide; or [PL 2005, c. 620, §4 (AMD).]

C. Any word, statement or other information required to appear on the label or labeling is not prominently placed thereon with such conspicuousness, as compared with other words, statements, designs or graphic matter, in the labeling and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use; or [PL 2005, c. 620, §4 (AMD).]

[PL 2005, c. 620, §4 (AMD).]

2. Lack of certain information. As applied to any pesticide means that:

A. The labeling does not contain a statement of the use classification under which the product is registered; [PL 2005, c. 620, §4 (AMD).]

B. The labeling accompanying it does not contain directions for use that are necessary for effecting the purpose for which the product is intended and that, if complied with, together with any requirements imposed under FIFRA, Section 3(d), are adequate to protect health and the environment; [PL 2005, c. 620, §4 (AMD).]

B-1. The label does not contain a warning or caution statement that may be necessary and that, if complied with, together with any requirements imposed under FIFRA, Section 3(d), would be adequate to protect the health and environment; [PL 2005, c. 620, §4 (NEW).]

B-2. The label does not bear an ingredient statement on that part of the immediate container, and on the outside container and wrapper of the retail package, if there is one, through which the ingredient statement on the immediate container cannot be clearly read, which is presented or displayed under customary conditions of purchase. The pesticide is not misbranded if the ingredient statement appears prominently on another part of the container as permitted pursuant to FIFRA, Section 2(q)(2)(A) if the size or form of the container makes it impracticable to place it on the part of the retail package that is presented or displayed under customary conditions of purchase; [PL 2005, c. 620, §4 (NEW).]

C. There is not affixed to its container, and to the outside container or wrapper of the retail package, if there is one, through which the required information on the immediate container cannot be clearly read, a label bearing:

(1) The name, brand or trademark under which the pesticide is sold;

(4) The net weight or measure of the content;

(5) The name and address of the manufacturer, registrant or person for whom manufactured; and

(6) The EPA registration number assigned to each establishment in which it was produced and the EPA registration number assigned to the pesticide, if required by regulations under FIFRA; [PL 2005, c. 620, §4 (AMD).]

D. The pesticide contains any substance or substances in quantities highly toxic to human beings unless the label bears, in addition to other label requirements:

(1) The skull and crossbones;

(2) The word "POISON" in red prominently displayed on a background of distinctly contrasting color; and

(3) A statement of a practical treatment, including first aid or otherwise, in case of poisoning by the pesticide; or [PL 2005, c. 620, §4 (AMD).]

E. The pesticide container does not bear a registered label or the label does not contain all the information required by this subchapter or the rules adopted under this subchapter. [PL 2005, c. 620, §4 (AMD).]

[PL 2005, c. 620, §4 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 2005, c. 620, §4 (AMD).

§606. Prohibited acts

1. Unlawful distribution. A person may not distribute in the State any of the following:

A. A pesticide that has not been registered pursuant to the provisions of this subchapter; [PL 2005, c. 620, §5 (AMD).]

B. A pesticide if any of the claims made for it or any of the directions for its use or other labeling differs from the representations made in connection with its registration, or if the composition of a pesticide differs from its composition as represented in connection with its registration; a change in the labeling or formulation of a pesticide may be made within a registration period without requiring reregistration of the product if the registration is amended to reflect that change and if that change will not violate any provision of FIFRA or this subchapter; [PL 2005, c. 620, §5 (AMD).]

C. A pesticide unless it is in the registrant's or the manufacturer's unbroken immediate container and there is affixed to the container, and to the outside container or wrapper of the retail package, if there is one, through which the required information on the immediate container cannot be clearly read, a label bearing the information required in this subchapter and rules adopted under this subchapter; [PL 2005, c. 620, §5 (AMD).]

D. A pesticide that has not been colored or discolored pursuant to section 610, subsection 1, paragraph D; [PL 2005, c. 620, §5 (AMD).]

E. A pesticide that is adulterated or misbranded or any device that is misbranded; [PL 2021, c. 105, §1 (AMD).]

F. A pesticide in containers that are unsafe due to damage; or [PL 2021, c. 105, §2 (AMD).]

G. Beginning January 1, 2022, a pesticide containing chlorpyrifos as an active ingredient. [PL 2021, c. 105, §3 (NEW).]

[PL 2021, c. 105, §§1-3 (AMD).]

2. Unlawful alteration, misuse, divulging of formulas, transportation, disposal and noncompliance. A person may not:

A. Detach, alter, deface or destroy, wholly or in part, any label or labeling provided for in this subchapter or rules adopted under this subchapter; [PL 2005, c. 620, §5 (AMD).]

A-1. Add any substance to or take any substance from a pesticide in a manner that may defeat the purpose of this subchapter or rules adopted under this subchapter; [PL 2005, c. 620, §5 (NEW).]

B. Use or cause to be used any pesticide in a manner inconsistent with its labeling or with rules of the board, if those rules further restrict the uses provided on the labeling; [PL 2005, c. 620, §5 (AMD).]

C. Use for that person's own advantage or reveal, other than to the board or proper officials or employees of the state or federal executive agencies, to the courts of this State or of the United States in response to a subpoena, to physicians, or in emergencies to pharmacists and other qualified persons for use in the preparation of antidotes, any information relative to formulas of products acquired by authority of section 607 or any information judged by the board to contain or relate to trade secrets or commercial or financial information obtained by authority of this subchapter and marked as privileged or confidential by the registrant; [PL 2005, c. 620, §5 (AMD).]

D. Handle, transport, store, display or distribute pesticides in such a manner as to endanger human beings or their environment or to endanger food, feed or any other products that may be transported, stored, displayed or distributed with such pesticides; [PL 2005, c. 620, §5 (AMD).]

E. Dispose of, discard or store any pesticides or pesticide containers in such a manner as may cause injury to humans, vegetation, crops, livestock, wildlife or beneficial insects or pollute any water supply or waterway; [PL 2005, c. 620, §5 (AMD).]

F. Refuse or otherwise fail to comply with the provisions of this subchapter, the rules adopted under this subchapter, or any lawful order of the board; or [PL 2005, c. 620, §5 (AMD).]

G. Apply pesticides in a manner inconsistent with rules for pesticide application adopted by the board. [PL 2005, c. 620, §5 (AMD).]

[PL 2005, c. 620, §5 (AMD).]

3. Unlawful use. A person may not apply glyphosate or dicamba within 75 feet of school grounds. This subsection does not apply to residential property or land used for commercial farming.

For purposes of this subsection, unless the context otherwise indicates, the following terms have the following meanings:

A. "Commercial farming" has the same meaning as in section 52, subsection 3; [PL 2021, c. 197, §1 (NEW).]

B. "Residential property" means real property located in this State that is used for residential dwelling purposes; [PL 2021, c. 197, §1 (NEW).]

C. "School" means any public, private or tribally funded elementary school as defined in Title 20-A, section 1, subsection 10, secondary school as defined in Title 20-A, section 1, subsection 32 or a nursery school that is part of an elementary or secondary school; and [PL 2021, c. 197, §1 (NEW).]

D. "School grounds" means:

(1) Land associated with a school building including playgrounds and athletic fields used by students or staff of a school. "School grounds" does not include land used for a school farm; and

(2) Any other outdoor area used by students or staff including property owned by a municipality or a private entity that is regularly used for school activities by students and staff but not including land used primarily for nonschool activities, such as golf courses, farms and museums. [PL 2021, c. 197, §1 (NEW).]

[PL 2021, c. 197, §1 (NEW).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1983, c. 558, §§1,2 (AMD). PL 1983, c. 761, §§1,2 (AMD). PL 1985, c. 506, §A6 (AMD). PL 1989, c. 878, §§E3,4 (AMD). PL 2005, c. 620, §5 (AMD). PL 2021, c. 105, §§1-3 (AMD). PL 2021, c. 197, §1 (AMD).

§607. Registration

1. Conditions requiring registration. A pesticide may not be distributed in this State unless it is registered with the board in accordance with the provisions of this subchapter, except that registration is not required if:

A. A pesticide is shipped from one plant or warehouse to another plant or warehouse operated by the same person and is used solely at that plant or warehouse as a constituent part to make a pesticide that is registered under the provisions of this subchapter; or [PL 2005, c. 620, §6 (NEW).]

B. A pesticide is distributed under the provisions of an experimental use permit issued by EPA. [PL 2005, c. 620, §6 (NEW).]

[PL 2005, c. 620, §6 (AMD).]

2. Contents of statement made by applicant. The applicant for registration shall file a statement with the board, which must include:

A. The name and address of the applicant and the name and address of the person whose name will appear on the label, if other than applicant's; [PL 1975, c. 382, §3 (NEW).]

B. The name of the pesticide; [PL 1975, c. 382, §3 (NEW).]

C. Other necessary information required by the board; and [PL 2005, c. 620, §6 (AMD).]

D. A complete copy of the labeling accompanying the pesticide and a statement of all claims to be made for it, including the directions for use and the use classification as provided for in FIFRA. [PL 1975, c. 382, §3 (NEW).]

[PL 2005, c. 620, §6 (AMD).]

3. Submission of formula. The board, when it determines it necessary in the administration of this subchapter, may require the submission of the complete formula of any pesticide, including the active and inert ingredients.

[PL 2005, c. 620, §6 (AMD).]

4. Test results. The board may require a full description of all tests made and the results of those tests on any pesticide not registered pursuant to FIFRA, Section 3 or on any pesticide on which restrictions are being considered by the board. In the case of renewal of registration, the board may require a statement only with respect to test result information that is different from that furnished when the pesticide was registered or last reregistered.

[PL 2005, c. 620, §6 (AMD).]

5. Power to require other information. The board may by rules adopted under section 610 require the submission of other necessary information.

[PL 2005, c. 620, §6 (AMD).]

5-A. Confidentiality. Notwithstanding Title 1, section 402, data submitted pursuant to subsections 3, 4 and 5 that have been determined confidential by the Administrator of the United States Environmental Protection Agency in accordance with 7 United States Code, Section 136h (2007) are confidential and may not be available for public inspection.

[PL 2007, c. 597, §8 (AMD).]

6. Registration fee; programs funded. The applicant desiring to register a pesticide must pay an annual registration fee of \$160 for each pesticide registered for that applicant. Annual registration periods expire on December 31st or in a manner consistent with Title 5, section 10002, whichever is later.

The board shall monitor fee revenue and expenditures under this subsection to ensure that adequate funds are available to fund board and related department programs and, to the extent funds are available, to provide grants to support stewardship programs. The board shall use funds received under this subsection to provide:

A. An annual grant of no less than \$135,000 to the University of Maine Cooperative Extension, on or about April 1st, for development and implementation of integrated pest management programs; [PL 2019, c. 243, §1 (AMD).]

B. Funding for public health-related mosquito monitoring programs or other pesticide stewardship and integrated pest management programs, if designated at the discretion of the board, as funds allow after expenditures under paragraph A. The board may seek the advice of the Integrated Pest Management Council established in section 2404 in determining the most beneficial use of the funds, if available, under this subsection; and [PL 2019, c. 243, §1 (AMD).]

C. An annual grant of not less than \$65,000 to the University of Maine Cooperative Extension, on or about April 1st, for the development and revision of training manuals for applicator certification, licensing and recertification and to perform other aspects of pesticide education programs. The University of Maine Cooperative Extension may seek the advice of the board in establishing the pesticide education programs and shall submit an annual report on the use of the funds under this paragraph, no later than January 15th,

to the board and the joint standing committee of the Legislature having jurisdiction over pesticide education and certification matters. [PL 2019, c. 243, §1 (NEW).]

The University of Maine may not charge overhead costs against grants under this subsection.

By February 15th annually, the board shall submit a report to the joint standing committee of the Legislature having jurisdiction over agriculture, conservation and forestry matters detailing the grants funded by the fee under this subsection. The annual report must include a recommendation by the board as to whether the amount of the fee is adequate to fund the programs described in this subsection. The joint standing committee may report out a bill to the Legislature based on the board's recommendations.

[PL 2019, c. 243, §1 (AMD).]

7. Renewal of registration. Registrations must be renewed annually prior to January 1st. The board shall mail forms for reregistration to registrants at least 30 days prior to the due date.

[PL 2005, c. 620, §6 (AMD).]

8. Approval of application for registration.

[PL 2005, c. 620, §6 (RP).]

8-A. Approval of application for registration. The processing of an application for registration is governed by this subsection.

A. The board shall consider the required information set forth under subsections 2, 3, 4 and 5 and shall register a pesticide if it determines that:

- (1) Its composition warrants the proposed claims for it;
- (2) Its labeling and other material required to be submitted comply with the requirements of this subchapter;
- (3) It will perform its intended function without unreasonable adverse effects on the environment;
- (4) When used in accordance with widespread and commonly recognized practice, it will not generally cause unreasonable adverse effects on the environment; and
- (5) A need for the pesticide exists. [PL 2005, c. 620, §6 (NEW).]

B. If, within 180 days from the date the completed application for registration is submitted, the board fails to act upon an application for registration of a pesticide that has been certified by EPA, the pesticide is deemed registered under this chapter unless the board issues a written statement containing the reasons for the failure to act upon the application. The statement of the board is deemed a refusal to register pursuant to section 609. [PL 2005, c. 620, §6 (NEW).]

C. Paragraphs A and B do not apply if the registrant fails to provide any information required to be submitted under this subchapter or does not provide other information requested by the board in order to determine whether the pesticide should be registered.

Nothing in this paragraph affects the rights of the board to make further inquiry regarding the registration of a pesticide or to refuse reregistration, to suspend or revoke registration or to otherwise restrict or condition the use of pesticides in order to protect public health and the environment. [PL 2005, c. 620, §6 (NEW).]

D. Prior to registering a pesticide for a special local need, the board shall classify the uses of the pesticide for general or restricted use in conformity with FIFRA, Section 3(d). The board may not make any lack of essentiality a criterion for denying registration of any pesticide. When 2 pesticides meet the requirements of this paragraph, the board may not register one in preference to the other. [PL 2005, c. 620, §6 (NEW).]

E. The board may establish such other requirements by rule in accordance with section 610 as are necessary to carry out the provisions of this subsection. [PL 2005, c. 620, §6 (NEW).]

[PL 2005, c. 620, §6 (NEW).]

9. Adverse environmental effects. If, at any time after the registration of a pesticide, the registrant has additional factual information regarding unreasonable adverse effects of a pesticide on the environment, the registrant shall submit that information to the board.

[PL 2005, c. 620, §6 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §§52-55 (AMD). PL 1979, c. 644, §1 (AMD). PL 1981, c. 9 (AMD). PL 1983, c. 568, §1 (AMD). PL 1985, c. 592 (AMD). PL 1985, c. 627, §1 (AMD). PL 1987, c. 310, §1 (AMD). PL 1987, c. 723, §1 (AMD). PL 1989, c. 878, §E5 (AMD). PL 1993, c. 410, §S1 (AMD). PL 2001, c. 498, §1 (AMD). PL 2003, c. 282, §1 (AMD). PL 2005, c. 585, §1 (AMD). PL 2005, c. 620, §6 (AMD). PL 2007, c. 466, Pt. A, §25 (AMD). PL 2007, c. 597, §8 (AMD). PL 2013, c. 290, §1 (AMD). PL 2013, c. 290, §4 (AFF). PL 2019, c. 243, §1 (AMD).

§607-A. Review or reregistration

1. Review required. The board shall review chemical pesticides used in this State in accordance with the requirements of this section. The board shall select 2 pesticides for review each year with priority given to pesticides that have patterns of use in this State that differ from prevalent use patterns nationally or regionally. The board may select additional pesticides for review as the board determines need and as resources allow.

[PL 2005, c. 620, §7 (AMD).]

2. Review process. In cooperation with technical personnel of the Department of Environmental Protection; the Department of Inland Fisheries and Wildlife; the Department of Health and Human Services; the Department of Marine Resources; and the Department of Agriculture, Conservation and Forestry, specifically the Maine Forest Service, the board shall conduct a review consisting of the following or portions of the following as the board determines relevant:

A. An environmental risk assessment to determine the effects of pesticides on the ecosystem. This assessment is to be based on available literature. The board shall request data that it determines necessary to carry out the purpose of this chapter; or [PL 2005, c. 620, §7 (AMD).]

B. A health risk assessment, based on a literature search of laboratory, clinical and epidemiological data available within and without the State. The board shall request data it determines necessary to carry out the purpose of this chapter. [PL 2005, c. 620, §7 (AMD).]

C. [PL 2005, c. 620, §7 (RP).]

[PL 2005, c. 620, §7 (AMD); PL 2011, c. 657, Pt. W, §5 (REV).]

2-A. Water residue surveys. The board shall conduct a water residue survey at least once every 6 years to establish a representative sample of a number of wells or bodies of water, selected at random, in areas of possible contamination or at other locations to be described by the board, for the purpose of testing these waters and preparing a profile of the kinds and amounts of pesticides present.

[PL 2005, c. 620, §7 (NEW).]

3. Effect of review on reregistration. If the reviews in this section demonstrate that the impact of the pesticide on the ecosystem warrants additional health or environmental safeguards, the board shall require implementation of those safeguards prior to reregistration. The board may not refuse to renew a pesticides registration based solely on its inability to conduct a review in accordance with this section.

[PL 2005, c. 620, §7 (AMD).]

SECTION HISTORY

PL 1983, c. 558, §3 (NEW). PL 1989, c. 878, §E6 (AMD). RR 1997, c. 2, §26 (COR). PL 2003, c. 689, §B6 (REV). PL 2005, c. 620, §7 (AMD). PL 2011, c. 657, Pt. W, §5 (REV).

§608. Experimental use permits

(REPEALED)

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §§56-58 (AMD). PL 1989, c. 878, §E7 (AMD). PL 1999, c. 547, §B78 (AMD). PL 1999, c. 547, §B80 (AFF). PL 2005, c. 620, §8 (RP).

§609. Refusal to register; cancellation; suspension; legal recourse

1. Procedure. The following provisions govern the board when refusing to register a pesticide, refusing to renew a pesticide registration, canceling a pesticide registration or suspending a pesticide registration.

A. If it does not appear to the board that a pesticide warrants the proposed claims for it or if the pesticide and its labeling and other material required to be submitted do not comply with the provisions of this subchapter or rules adopted under this subchapter, the board shall notify the applicant of the manner in which the pesticide, labeling or other material required to be submitted fails to comply with the provisions of this subchapter so as to afford the applicant an opportunity to make the necessary corrections. [RR 2005, c. 2, §7 (COR).]

B. When the board determines that a pesticide or its labeling does not comply with the provisions of this subchapter or rules adopted under this subchapter, the board may cancel or refuse to renew the registration of a pesticide or change its classification, after notice and opportunity for hearing has been provided in a manner consistent with the Maine Administrative Procedure Act. [PL 2005, c. 620, §9 (AMD).]

C. When the board determines that there is an imminent hazard, it may, on its own motion, suspend the registration of a pesticide in accordance with Title 5, section 10004. [PL 2005, c. 620, §9 (AMD).]

D. When the board becomes cognizant of any possible hazard or violation involving a registered product, it shall cause notice of the possible hazard or violation to be delivered by registered mail, return receipt requested, to the registrant and may cancel or refuse to renew the registration of the pesticide or change its classification after notice and opportunity for hearing has been provided in a manner consistent with the Maine Administrative Procedure Act. [PL 2005, c. 620, §9 (AMD).]

E. [PL 2005, c. 620, §9 (RP).]

[RR 2005, c. 2, §7 (COR).]

2. Federally registered pesticides. If the board determines that any federally registered pesticide, with respect to the use of such pesticide within this State, does not warrant the claims for it, or might cause unreasonable adverse effects on the environment, the board may refuse to register the pesticide as required in section 607 or, if the pesticide is registered under section 607, may cancel or suspend the registration in accordance with subsection 1. If the board believes the pesticide does not comply with the provisions of FIFRA or the regulations adopted by EPA pursuant to FIFRA, it shall advise EPA of the manner in which the pesticide, labeling or other material required to be submitted fails to comply with the provisions of FIFRA and suggest necessary corrections.

[PL 2005, c. 620, §9 (AMD).]

3. Person adversely affected by board action. Any person adversely affected by a final action of the board under this section may obtain judicial review thereof by filing in the District Court, within 60 days after the entry of that final action, a petition praying that the action be set aside in whole or in part. A copy of the petition must be forthwith transmitted by the clerk of the court to the board and upon receipt the board shall file in the court the record of the proceedings on which it based its final action. The court has

jurisdiction to affirm or set aside the final action complained of in whole or in part. The findings of the board with respect to questions of fact must be sustained if supported by substantial evidence when considered on the record as a whole. Upon application, the court may remand the matter to the board to take further testimony if there are reasonable grounds for the failure to adduce the evidence in the prior hearing. The board may modify its findings and final action by reason of the additional evidence and shall file the additional record and any modification of the findings or final action with the clerk of the court.

[PL 2005, c. 620, §9 (NEW).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §§59-61 (AMD). PL 1989, c. 878, §E8 (AMD). RR 2005, c. 2, §7 (COR). PL 2005, c. 620, §9 (AMD).

§610. Determinations; rules; restricted use pesticides; uniformity

1. Determinations. The board may by rule:

A. Declare as a pest any form of plant or animal life, except viruses, bacteria or other microorganisms on or in living human beings or other living animals, that is injurious to health or the environment; [RR 2005, c. 2, §8 (COR).]

B. Determine whether pesticides registered under the authority of FIFRA, Section 24(c) are highly toxic to human beings. [PL 2005, c. 620, §10 (AMD).]

C. Determine whether pesticides or quantities of substances contained in pesticides are injurious to the environment. The board must be guided by EPA regulations in this determination; and [PL 2005, c. 620, §10 (AMD).]

D. Require any pesticide to be colored or discolored if it determines that such a requirement is feasible and is necessary for the protection of health and the environment. [PL 2005, c. 620, §10 (AMD).]

[RR 2005, c. 2, §8 (COR).]

2. Rule-making powers. The board may adopt other rules that it determines necessary to carry out the provisions of this subchapter. The board's rule-making authority includes, but is not limited to, rules:

A. Providing for the collection, examination and reporting of samples of pesticides or devices; [PL 2005, c. 620, §10 (AMD).]

B. Providing for the safe handling, transportation, storage, display, distribution and disposal of pesticides and their containers; [PL 2005, c. 620, §10 (AMD).]

C. Establishing requirements of all pesticides required to be registered under provisions of this subchapter, provided that such rules do not impose any requirements for federally registered labels in addition to or different from those required pursuant to FIFRA; [PL 2005, c. 620, §10 (AMD).]

D. Specifying classes of devices that are subject to the provisions of section 605, subsection 1; [PL 2005, c. 620, §10 (AMD).]

E. Governing pesticide application, including, but not limited to, rules:

(1) Designed to minimize pesticide drift to the maximum extent practicable under currently available technology;

(2) Prescribing procedures to be used for the application of pesticides, including the time, place, manner and method of that application;

(3) Restricting or prohibiting the use of pesticides in designated areas or during specified periods of time; and

(4) Prescribing tolerance levels for pesticide residues in off-target areas; [PL 2005, c. 620, §10 (NEW).]

F. Prescribing the submission of information necessary for the board to undertake its responsibilities under this subchapter; [PL 2005, c. 620, §10 (NEW).]

G. Prescribing requirements as necessary to carry out the provisions of section 607; [PL 2005, c. 620, §10 (NEW).]

H. Governing the registration and the cancellation and suspension of registration of pesticides pursuant to section 609; and [PL 2005, c. 620, §10 (NEW).]

I. For the purpose of achieving uniformity of requirements between the states and the Federal Government, provided the rules are in conformity with the primary pesticide standards, particularly as to labeling, registration requirements and criteria for classifying pesticides for restricted use, as established by EPA or other federal or state agencies. [PL 2005, c. 620, §10 (NEW).]

[PL 2005, c. 620, §10 (AMD).]

3. Uniformity of requirements; restricted uses.

[PL 2005, c. 620, §10 (RP).]

4. Designation of rules. Rules adopted under this subchapter are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A unless otherwise specified or designated in accordance with subsection 5.

[PL 2005, c. 620, §10 (NEW).]

5. Review of regulatory agenda; designation as major substantive rules. Notwithstanding Title 5, section 8060, subsection 2, the due date for the submission of a regulatory agenda by the board under section 8060 is January 15th. The board shall annually submit a regulatory agenda complying with Title 5, section 8060, subsection 1 to the joint standing committee of the Legislature having jurisdiction over pesticides regulation. The legislative committee of jurisdiction shall complete its review of the board's regulatory agenda no later than February 15th of each year. The committee may report out legislation no later than February 20th to designate any rule on the board's regulatory agenda as a major substantive rule subject to legislative review under Title 5, chapter 375, subchapter 2-A.

[PL 2005, c. 620, §10 (NEW).]

6. Major substantive rules. Rules proposed for adoption by the board after July 1, 2007 that pertain to topics specified in paragraphs A to E are major substantive rules as defined in Title 5, chapter 375, subchapter 2-A. Rules in effect on July 1, 2007 that pertain to topics specified in paragraphs A to E continue in effect, except that proposed amendments to those rules are major substantive rules and must be reviewed and approved prior to final adoption in accordance with Title 5, section 8072. Rules proposed for adoption by the board after March 1, 2008 that pertain to topics specified in paragraphs F and G are major substantive rules as defined in Title 5, chapter 375, subchapter 2-A. Rules in effect on March 1, 2008 that pertain to topics specified in paragraph G continue in effect, except that proposed amendments to those rules are major substantive rules and must be reviewed and approved prior to final adoption in accordance with Title 5, section 8072. Topics governed by this subsection are:

A. Drift from outside spraying; [PL 2007, c. 145, §1 (NEW).]

B. Notification requirements for outside spraying; [PL 2007, c. 145, §1 (NEW).]

C. Pesticides applications in occupied buildings; [PL 2007, c. 145, §1 (NEW).]

D. A notification registry for indoor applications of pesticides; [PL 2007, c. 484, §2 (AMD).]

E. Buffers from shorelines for broadcast applications of pesticides; [PL 2007, c. 484, §2 (AMD).]

F. Use of organophosphate pesticides adjacent to occupied areas; and [PL 2007, c. 484, §2 (NEW).]

G. Distribution and use of plant-incorporated protectants. [PL 2007, c. 484, §2 (NEW).]

[PL 2007, c. 484, §2 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §§62,63 (AMD). PL 1989, c. 878, §E9 (AMD). RR 2005, c. 2, §8 (COR). PL 2005, c. 620, §10 (AMD). PL 2007, c. 145, §1 (AMD). PL 2007, c. 484, §2 (AMD).

§611. Enforcement

1. Board powers. Notwithstanding any other provision of law, the sampling and examination of pesticides or devices for the purpose of determining whether they comply with the requirements of this subchapter must be done under the direction of the board. The board may, upon presentation of proper identification, enter any distributor's premises, including any vehicle of transport, at all reasonable times in order to have access to labeled pesticides or devices packaged for distribution, may open any case, package or other container and may, upon tendering the market price, take samples for analysis. If it appears from such an examination that a pesticide or device fails to comply with the provisions of this subchapter or rules adopted under this subchapter, and the board contemplates instituting criminal proceedings against any person, the board shall cause appropriate notice to be given to that person in a manner consistent with the Maine Administrative Procedure Act. The board shall provide any person so notified an opportunity for a hearing in a manner consistent with the Maine Administrative Procedure Act's provisions governing adjudicatory proceedings. If in the opinion of the board it appears that the provisions of this subchapter or rules adopted under this subchapter have been violated by that person, the board shall refer a copy of the results of the analysis or the examination of such pesticide or device to the attorney for the district in which the violation occurred.

[RR 2005, c. 2, §9 (COR).]

2. Minor violations. Nothing in this subchapter may be construed as requiring the board to report minor violations of this subchapter for prosecution or for the institution of condemnation proceedings when the board believes that the public interest will be served best by a suitable notice of warning in writing.

[PL 2005, c. 620, §11 (AMD).]

3. Repeated violations. The board shall record all violations of this subchapter and Title 22, chapter 258-A, including the name of the owner of the land on which the pesticides were intended to be applied, the name of the licensed pesticides applicator and the name of the person who contracted the pesticide application services. The board shall identify persons who repeatedly violate provisions relating to pesticide use and recommend to the Attorney General methods to prevent further violations by those persons.

[PL 2005, c. 620, §11 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §64 (AMD). PL 1983, c. 558, §4 (AMD). PL 1989, c. 878, §E10 (AMD). RR 2005, c. 2, §9 (COR). PL 2005, c. 620, §11 (AMD).

§612. "Stop sale, use or removal" order

When the board has reasonable cause to believe a pesticide or device is being distributed, stored, transported or used in violation of any of the provisions of this subchapter or of any of the rules adopted pursuant to this subchapter, it may issue and serve a written "stop sale, use or removal" order upon the owner or custodian of that pesticide or device. If the owner or custodian is not available for service of the order, the board may attach the order to the pesticide or device and notify the owner or custodian and the registrant. The pesticide or device may not be sold, used or removed until the provisions of this subchapter have been complied with and the pesticide or device has been released in writing under conditions specified by the board or the violation has been otherwise disposed of as provided in this subchapter by a court of competent jurisdiction. The issuance of such an order is not a licensing or an

adjudicatory proceeding as defined by the Maine Administrative Procedure Act. [PL 2005, c. 620, §12 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §65 (AMD). PL 1989, c. 878, §E11 (AMD). PL 2005, c. 620, §12 (AMD).

§613. Judicial action after "stop sale, use or removal" order

The following provisions govern judicial actions concerning a "stop sale, use or removal" order by the board. [PL 2005, c. 620, §13 (NEW).]

1. Filing action; adjudication. After service of a "stop sale, use or removal" order is made upon any person, either that person, the registrant or the board may file an action in a court of competent jurisdiction in the district in which the violation is alleged to have occurred for an adjudication of the alleged violation. The court may issue temporary or permanent injunctions, mandatory or restraining, and any intermediate orders it determines necessary or advisable. The court may order condemnation of any pesticide or device that does not meet the requirements of this subchapter or rules adopted under this subchapter.

[PL 2005, c. 620, §13 (AMD).]

2. Disposition of condemned pesticide; costs and fees. If the court orders that a pesticide or device is condemned, the court shall direct that the pesticide or device be disposed of by destruction or sale. If the pesticide or device is directed to be sold, the proceeds less costs, including legal costs, must be paid to the Treasurer of State as provided in section 621. A pesticide or device may not be sold contrary to the provisions of this subchapter or rules adopted under this subchapter. When a decree of condemnation is entered against a pesticide or device, the court shall charge court costs, fees, storage and other proper expenses against the person, if any, appearing as claimant of the pesticide. The court may direct that the pesticide or device be delivered to the owner, upon payment of costs and execution and delivery of a good and sufficient bond conditioned on the pesticide or device not being disposed of unlawfully, for relabeling, reprocessing or otherwise bringing the product into compliance.

[PL 2005, c. 620, §13 (AMD).]

3. Award of court costs and fees.

[PL 2005, c. 620, §13 (RP).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1989, c. 878, §E12 (AMD). PL 2005, c. 620, §13 (AMD).

§614. Denial, suspension, revocation of license

(REPEALED)

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 694, §66 (AMD). PL 1989, c. 878, §E13 (AMD). PL 1999, c. 547, §B78 (AMD). PL 1999, c. 547, §B80 (AFF). PL 2005, c. 620, §14 (RP).

§615. Subpoenas

The board may issue subpoenas to compel the attendance of witnesses and the production of books, documents and records in the State in any hearing affecting the authority or privilege granted by a license, registration or permit issued under the provisions of this subchapter. [PL 1989, c. 878, Pt. E, §14 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1989, c. 878, §E14 (AMD).

§616. Penalties

(REPEALED)

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 696, §65 (AMD). PL 1989, c. 841, §2 (RP). PL 1989, c. 878, §E15 (AMD). PL 2005, c. 620, §15 (RP).

§616-A. Penalties

1. Informal hearing. When the staff of the board proposes that the board take action on a possible violation, the board shall notify the alleged violator before discussing the alleged violation. The alleged violator may choose to address the board and may also choose to be represented by legal counsel. This requirement does not constitute and is not subject to the same procedures as an adjudicatory hearing under the Maine Administrative Procedure Act.

[PL 2005, c. 620, §16 (AMD).]

2. Civil violations. The following violations are civil violations.

A. A person may not violate this subchapter or a rule adopted pursuant to this subchapter or Title 22, chapter 258-A or a rule adopted pursuant to Title 22, chapter 258-A. Except as provided in paragraph B, the following penalties apply to violations of this paragraph.

(1) A person who violates this paragraph commits a civil violation for which a fine of not more than \$1,500 may be adjudged.

(2) A person who violates this paragraph after having previously violated this paragraph within the previous 4-year period commits a civil violation for which a fine of not more than \$4,000 may be adjudged. [PL 2003, c. 452, Pt. B, §6 (RPR); PL 2003, c. 452, Pt. X, §2 (AFF).]

B. A private applicator, as defined in Title 22, section 1471-C, may not violate a rule regarding records maintained pursuant to section 606, subsection 2, paragraph G. The following penalties apply to violations of this paragraph.

(1) A person who violates this paragraph commits a civil violation for which a fine of not more than \$500 may be adjudged.

(2) A person who violates this paragraph after having previously violated this paragraph within the previous 4-year period commits a civil violation for which a fine of not more than \$1,000 may be adjudged. [PL 2011, c. 510, §1 (AMD).]

[PL 2011, c. 510, §1 (AMD).]

2-A. Criminal violation. A person may not intentionally or knowingly violate this subchapter or Title 22, chapter 258-A, a rule adopted under this subchapter or Title 22, chapter 258-A or a restriction of a registration issued pursuant to this subchapter. A person who violates this subsection commits a Class E crime. Notwithstanding Title 17-A, section 1604, subsection 1 and sections 1704 and 1705, the court may impose a sentencing alternative of a fine of not more than \$7,500 or a term of imprisonment of not more than 30 days, or both, for each violation. Prosecution under this subsection is by summons and not by warrant. A prosecution under this subsection is separate from an action brought pursuant to subsection 2.

[PL 2019, c. 113, Pt. C, §1 (AMD).]

3. Continuation. Each day that the violation continues is considered a separate offense.

[PL 1989, c. 841, §3 (NEW).]

4. Exceptions.

[PL 2003, c. 452, Pt. B, §8 (RP); PL 2003, c. 452, Pt. X, §2 (AFF).]

5. Criminal violations.

[PL 2003, c. 452, Pt. B, §8 (RP); PL 2003, c. 452, Pt. X, §2 (AFF).]

6. Other relief. Notwithstanding Title 22, section 1471-D, subsections 6 to 8 and in addition to other sanctions provided under this section, the court may order that a violator obtain recertification credits through board-approved meetings or courses as a condition of retaining, maintaining or renewing a certification or license required under Title 22, chapter 258-A.

[PL 1989, c. 841, §3 (NEW).]

7. Considerations. In setting a penalty under this section, the court shall consider, without limitation:

A. Prior violations by the same party; [PL 1989, c. 841, §3 (NEW).]

B. The degree of harm to the public and the environment; [PL 1989, c. 841, §3 (NEW).]

C. The degree of environmental damage that has not been abated or corrected; [PL 1989, c. 841, §3 (NEW).]

D. The extent to which the violation continued following the board's notice to the violator; [PL 1989, c. 841, §3 (NEW).]

E. The importance of deterring the same person or others from future violations; and [PL 1989, c. 841, §3 (NEW).]

F. The cause and circumstances of the violation, including:

(1) The foreseeability of the violation;

(2) The standard of care exercised by the violator; and

(3) Whether or not the violator reported the incident to the board. [PL 1989, c. 841, §3 (NEW).]

[PL 1989, c. 841, §3 (NEW).]

8. Injunction. The board may bring an action to enjoin the violation or threatened violation of any provision of this subchapter or any rule made pursuant to this subchapter in a court of competent jurisdiction of the district in which the violation occurs or is about to occur.

[PL 1989, c. 841, §3 (NEW).]

9. No damages from administrative action if probable cause exists. A court may not allow the recovery of damages from administrative action taken, or for a stop sale, use or removal order, if the court finds that there was probable cause for the administrative action.

[PL 1989, c. 841, §3 (NEW).]

10. Sunset.

[PL 1991, c. 829, §1 (RP).]

SECTION HISTORY

PL 1989, c. 841, §3 (NEW). PL 1991, c. 829, §1 (AMD). PL 2003, c. 452, §§B6-8 (AMD). PL 2003, c. 452, §X2 (AFF). PL 2005, c. 620, §16 (AMD). PL 2011, c. 510, §1 (AMD). PL 2019, c. 113, Pt. C, §1 (AMD).

§617. Exemptions

1. Exemptions from penalties. The penalties provided for violations of section 606, subsection 1, paragraphs A, B, C, D and E do not apply to:

A. Any carrier while lawfully engaged in transporting a pesticide within this State if the carrier, upon request, permits the board to copy all records showing the transactions in and movement of the pesticides or devices; [PL 2005, c. 620, §17 (AMD).]

B. Public officials of this State and the Federal Government while engaged in the performance of their official duties in administering state or federal pesticide laws or regulations; [PL 1975, c. 382, §3 (NEW).]

C. The manufacturer, shipper or other distributor of a pesticide for experimental use only, provided that person holds or is covered by a valid experimental use permit issued by EPA, and provided further that the permit covers the conduct in question; or [PL 2005, c. 620, §17 (AMD).]

D. Any person who ships a substance or mixture of substances being put through tests the purpose of which is only to determine the value of the substance or mixture for pesticide purposes or to determine its toxicity or other properties and from the use of which the user does not expect to receive any benefit in pest control. [PL 2005, c. 620, §17 (AMD).]

[PL 2005, c. 620, §17 (AMD).]

2. Exemption from this subchapter; pesticides for export. A pesticide or device may not be found to be in violation of this subchapter if the pesticide or device is intended solely for export to a foreign country and is prepared or packed according to the specifications or directions of the purchaser. If the pesticide or device is not so exported, all the provisions of this subchapter apply.

[PL 2005, c. 620, §17 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1989, c. 878, §E16 (AMD). PL 2005, c. 620, §17 (AMD).

§618. Publication of information

The board may publish, at least annually and in such form as it determines proper, results of analyses based on official samples as compared with the guaranteed analyses and information concerning the distribution of pesticides. The board may not publish individual distribution information, and that information is not a public record under Title 1, section 402. [PL 2005, c. 620, §18 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1989, c. 878, §E17 (AMD). PL 2005, c. 620, §18 (AMD).

§619. Delegation of duties

All authority vested in the board under this subchapter may, with like force and effort, be executed by employees of the board to whom the board from time to time delegates such authority. [PL 2005, c. 620, §19 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1989, c. 878, §E18 (AMD). PL 2005, c. 620, §19 (AMD).

§620. Cooperation

The board may cooperate with, receive grants-in-aid from and enter into cooperative agreements with any agency of the Federal Government or of this State or its subdivisions, or with any agency of another state, in order to implement this subchapter, including but not limited to taking such actions to: [PL 2005, c. 620, §20 (AMD).]

1. Uniformity. Secure uniformity of regulations;

[PL 1975, c. 382, §3 (NEW).]

2. Cooperative agreements with EPA. Prepare and submit state plans and enter into cooperative agreements with EPA to register pesticides under the authority of this subchapter and FIFRA;

[PL 1975, c. 382, §3 (NEW).]

3. Use of state and federal facilities. Cooperate in the enforcement of the federal pesticide control laws through the use of state or federal personnel, or both, and facilities and to implement cooperative enforcement programs including, but not limited to, the registration and inspection of establishments;

[PL 1975, c. 382, §3 (NEW).]

4. Contracts for monitoring pesticides. Enter into contracts for monitoring pesticides for the national plan; and

[PL 1975, c. 382, §3 (NEW).]

5. Preparation of state plans. Prepare and submit state plans to meet federal certification standards for issuing experimental use permits.

[PL 1975, c. 382, §3 (NEW).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1989, c. 878, §E19 (AMD). PL 2005, c. 620, §20 (AMD).

§621. Disposition of funds

All money received by the board under this subchapter must be deposited in the State Treasury to the credit of a special fund to be used for carrying out the provisions of this subchapter and Title 22, chapter 258-A, Board of Pesticides Control, and for such other expenses related to insect and pest management as provided by law. Positions that are allocated to the fund but that do not perform functions specifically assigned to the board in this subchapter and Title 22, chapter 258-A remain under supervision and management of the Department of Agriculture, Conservation and Forestry. [PL 2005, c. 620, §21 (AMD); PL 2011, c. 657, Pt. W, §5 (REV).]

The State Controller is authorized to advance up to \$500,000 from the Board of Pesticides Control account to the Animal Welfare Fund during any state fiscal year if requested in writing by the commissioner. The funds must be used to meet expenditures of the animal welfare program within the department. The funds must be returned to the account before the close of the state fiscal year in which the advance was made. [PL 2007, c. 702, §1 (NEW).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1979, c. 644, §§2,8 (AMD). PL 1989, c. 878, §E20 (AMD). PL 1993, c. 410, §S2 (AMD). PL 2005, c. 620, §21 (AMD). PL 2007, c. 702, §1 (AMD). PL 2011, c. 657, Pt. W, §5 (REV).

§622. Separability

(REPEALED)

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 2005, c. 620, §22 (RP).

§623. Prior liability

The enactment of this subchapter does not have the effect of terminating or in any way modifying any liability, civil or criminal, in existence on October 1, 1975. [PL 2005, c. 620, §23 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1977, c. 78, §25 (AMD). PL 2005, c. 620, §23 (AMD).

§624. Repealers

Jurisdiction in all matters pertaining to the registration, distribution and disposal of pesticides and devices is by this subchapter vested exclusively in the board. [PL 1989, c. 878, Pt. E, §21 (AMD).]

SECTION HISTORY

PL 1975, c. 382, §3 (NEW). PL 1975, c. 623, §§5-A (AMD). PL 1989, c. 878, §E21 (AMD).

§625. Right-of-way spraying; no-spray agreements

Any public utility, or the Department of Transportation, that maintains a right-of-way through a municipality shall offer a no-spray agreement, with reasonable provisions, for the municipality to consider

if it desires. Any agreement negotiated may include, but is not limited to, the responsibilities of the parties, the allocation of costs and the rights and remedies of the parties in the event of default and may apply to all or any part of the right-of-way within the municipality. Any agreement reached under this section must be negotiated in good faith, written and signed by all parties. As part of the no-spray agreement, the municipality may either perform the vegetation control work to standards as provided in the agreement or contract with the public utility or the Department of Transportation to conduct the work. [PL 2005, c. 620, §24 (AMD).]

If a reasonable no-spray agreement is offered to a municipality and an agreement is not reached within 90 days after the date of the offer, the public utility or the Department of Transportation at its own option may apply pesticides in its right-of-way or use other methods to control the vegetation. If the municipality agrees to perform vegetation control work but does not perform it by the agreed-upon date, the public utility or the Department of Transportation, after 90 days' written notice to the municipality, at its own option may apply pesticides in its right-of-way or use other methods to control the vegetation. [PL 2005, c. 620, §24 (AMD).]

It is the intent of the Legislature that this section make available to municipalities an alternative to right-of-way maintenance procedures that use pesticides. This section does not affect municipal authority to enact ordinances nor the authority of public utilities or the Department of Transportation to maintain its right-of-way clear of unwanted vegetation in the absence of an agreement. [PL 2005, c. 620, §24 (AMD).]

SECTION HISTORY

PL 1987, c. 702, §1 (NEW). PL 2005, c. 620, §24 (AMD).

CHAPTER 258-A

BOARD OF PESTICIDES CONTROL

§1471-A. Purpose and policy

For the purpose of assuring to the public the benefits to be derived from the safe, scientific and proper use of chemical pesticides while safeguarding the public health, safety and welfare, and for the further purpose of protecting natural resources of the State, it is declared to be the policy of the State of Maine to regulate the sale and application of chemical insecticides, fungicides, herbicides and other chemical pesticides. [PL 2011, c. 510, §2 (AMD).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1983, c. 542, §§1,3 (AMD). PL 2011, c. 510, §2 (AMD).

§1471-B. Board of Pesticides Control

1. Board established. The Board of Pesticides Control is established by Title 5, section 12004-D, subsection 3, within the Department of Agriculture, Conservation and Forestry. Except as provided in this chapter, the board must be composed of 7 members, appointed by the Governor, subject to approval by the joint standing committee of the Legislature having jurisdiction over agricultural matters and confirmation by the Senate. To provide the knowledge and experience necessary for carrying out the duties of the board, the board must consist of the following members: one person with practical experience and knowledge regarding the agricultural use of chemicals; one person who has practical experience and knowledge regarding the use of chemicals in forest management; one person from the medical community; a scientist from the University of Maine System specializing in agronomy, entomology or plant pathology having practical experience and expertise in integrated pest management; one commercial applicator; and 2 persons appointed to represent the public. The 2 members appointed to represent the public must have a demonstrated interest in environmental protection. A member appointed to represent the public may not have a financial interest in activities regulated by the board and may not be an individual who has been or is licensed, certified or given a permit in this State or any other state for activities regulated by the board. The term must be for 4 years, except that of the initial appointees, 2 serve 4-year terms, 2 serve 3-year terms, 2 serve 2-year terms and one serves a one-year term. Any vacancy must be filled by an appointment for the remainder of the unexpired term. [PL 2021, c. 179, §1 (AMD).]

2. Organization of the board. The board shall elect a chair and any other officers it determines necessary from among the membership. The board shall meet at the call of the chair or at the request of any 3 members. Four members constitute a quorum and, except as otherwise provided in this subsection, any action requires the affirmative vote of the greater of either a majority of those present and voting or at least 2 members. Any action by the board requesting that the Attorney General pursue a court action against an alleged violator of any law or rule requires an affirmative vote by 3 members or a majority of those present and voting, whichever is greater. The chair and any other officers shall serve in those capacities for a period of one year following their elections.

[PL 1989, c. 841, §4 (AMD).]

3. Compensation of the board. Each public member shall be compensated according to the provisions of Title 5, chapter 379.

[PL 1983, c. 812, §120 (RPR).]

4. Director. The commissioner shall appoint a director, with the approval of the board. The director shall be the principal administrative, operational and executive employee of the board. The director shall attend and participate in all meetings of the board, but may not vote. The director, with the approval of the commissioner and the board, may hire whatever competent professional personnel and other staff he deems necessary. All employees of the board shall be subject to Title 5, Part 2. The director may obtain office space, goods and services as required.

[PL 1979, c. 644, §3 (NEW).]

5. Staff. The board must establish standards for the delegation of its authority to the director and staff. Any person aggrieved by a decision of the director and staff has a right to a review of the decision by the board. The Commissioner of Agriculture, Conservation and Forestry shall provide the board with administrative services of the department, including assistance in the preparation of the board's budget. The commissioner may require the board to reimburse the department for these services.

[PL 1989, c. 841, §5 (AMD); PL 2011, c. 657, Pt. W, §6 (REV).]

6. Registration of pesticides.

[PL 1981, c. 112, §1 (RP).]

7. State contracts. Notwithstanding any other provisions of law, members of the board are eligible to contract with the State when the contracts are awarded in accordance with normal bidding procedures of the Department of Administrative and Financial Services. Members also are eligible to receive grants when grants are awarded in accordance with normal state procedures. A member may not vote on the award of a contract or grant for which that member has submitted a bid or proposal.

[PL 2007, c. 466, Pt. A, §40 (RPR).]

8. Meetings. The board shall periodically meet in various geographic regions of the State. When considering an enforcement action, the board shall attempt to meet in the geographic region where the alleged violation occurred.

[PL 1989, c. 841, §6 (NEW).]

SECTION HISTORY

PL 1975, c. 293, §4 (AMD). PL 1975, c. 397, §2 (NEW). PL 1977, c. 696, §181 (AMD). PL 1979, c. 644, §3 (RPR). PL 1979, c. 731, §19 (AMD). PL 1981, c. 112, §1 (AMD). PL 1981, c. 470, §A66 (AMD). PL 1981, c. 632, §§1,2 (AMD). PL 1983, c. 309 (AMD). PL 1983, c. 812, §§119,120 (AMD). PL 1985, c. 779, §60 (AMD). PL 1985, c. 785, §A95 (AMD). PL 1987, c. 702, §2 (AMD). PL 1989, c. 503, §B83 (AMD). PL 1989, c. 841, §§4-6 (AMD). PL 1991, c. 376, §45 (AMD). PL 2007, c. 466, Pt. A, §40 (AMD). PL 2007, c. 466, Pt. B, §17 (AMD). PL 2011, c. 119, §1 (AMD). PL 2011, c. 119, §2 (AFF). PL 2011, c. 657, Pt. W, §§5, 6 (REV). PL 2019, c. 192, §1 (AMD). PL 2021, c. 179, §1 (AMD).

§1471-C. Definitions

As used in this chapter, the following words have the following meanings. [PL 1983, c. 819, Pt. A, §40 (NEW).]

1. Agricultural commodity. "Agricultural commodity" means any plant, or part thereof, or animal or animal product produced by a person, including farmers, ranchers, vineyardists, plant propagators, Christmas tree growers, aquaculturists, floriculturists, orchardists, foresters or other comparable persons, primarily for sale, consumption, propagation or other use by humans or animals.

[PL 1975, c. 397, §2 (NEW).]

2. Aircraft. "Aircraft" means any machine or device used or designed for navigation of, or flight in, the air.

[PL 1975, c. 397, §2 (NEW).]

3. Board. "Board" means the Board of Pesticides Control as established in section 1471-B.

[RR 2019, c. 1, Pt. A, §20 (COR).]

4. Certified applicator. "Certified applicator" means any person who is certified pursuant to section 1471-D and authorized to use or supervise the use of any pesticides.

[PL 1975, c. 644, §1 (AMD).]

5. Commercial applicator. "Commercial applicator" means any person, whether or not the person is a private applicator with respect to some uses, who uses or supervises the use of any limited or restricted-use pesticides on any property other than as provided by subsection 22, or who uses general-use pesticides in custom application on such property. "Commercial applicator" also includes individuals who apply any pesticides in connection with their duties as officials or employees of federal, state or local governments.

[PL 2015, c. 58, §2 (AMD).]

5-A. Custom application. "Custom application" means an application of a pesticide:

A. Under contract or for which compensation is received; [PL 2007, c. 245, §2 (NEW).]

B. To a property open to use by the public; or [PL 2007, c. 245, §2 (NEW).]

C. In a food establishment licensed under chapter 551 or an eating establishment licensed under chapter 562, except that "custom application" does not include a pesticides application at a licensed food or eating establishment when:

(1) The establishment is ancillary to the production of an agricultural commodity;

(2) The owner or an employee of that establishment is certified as a private applicator under section 1471-D, subsection 2; and

(3) The property is not open to the public. [PL 2007, c. 245, §2 (NEW).]

[PL 2007, c. 245, §2 (AMD).]

6. Defoliant. The term "defoliant" means any substance or mixture of substances intended for causing the leaves or foliage to drop from a plant, with or without causing abscission.

[PL 1975, c. 397, §2 (NEW).]

7. Desiccant. The term "desiccant" means any substance or mixture of substances intended for artificially accelerating the drying of plant tissue.

[PL 1975, c. 397, §2 (NEW).]

8. Distribute. "Distribute" means to offer for sale, hold for sale, sell, barter, ship, deliver for shipment or receive and, having so received, deliver or offer to deliver pesticides in this State.

[PL 1975, c. 397, §2 (NEW).]

9. FIFRA. "FIFRA" means the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. 135 et seq., PL 92-516.

[PL 1975, c. 397, §2 (NEW).]

10. Fungi. "Fungi" means all nonchlorophyll-bearing thallophytes, that is, all nonchlorophyll-bearing plants, of a lower order than mosses and liverworts, including but not limited to rusts, smuts, mildews and molds, except those on or in living man or other animals or those on or in processed food, beverages or pharmaceuticals.

[PL 1975, c. 397, §2 (NEW).]

11. Fungicide. "Fungicide" means any substance or mixture of substances intended for destroying or repelling any fungi or mitigating or preventing damage by any fungi.

[PL 1975, c. 397, §2 (NEW).]

11-A. Government pesticide supervisor.

[PL 2015, c. 58, §3 (RP).]

11-B. General use pesticide. "General use pesticide" means any pesticide that is required to be registered by the board pursuant to Title 7, chapter 103, subchapter 2-A and that is not a restricted use or limited use pesticide, as defined in this section. Pesticides restricted or limited by the board are listed by the board.

[PL 2017, c. 59, §1 (AMD).]

11-C. General use pesticide dealer. "General use pesticide dealer" means any person who distributes general use pesticides.

[PL 1987, c. 723, §2 (NEW).]

12. Ground equipment. "Ground equipment" means any machine or device, other than aircraft, for use on land or water, designed for, or adaptable to, use in applying pesticides as sprays, dusts, aerosols, fogs, or in other forms.

[PL 1975, c. 397, §2 (NEW).]

13. Herbicides. "Herbicides" means any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any weed.

[PL 1975, c. 397, §2 (NEW).]

13-A. Household use pesticide product. "Household use pesticide product" means any general use pesticide product that contains no more than 3% active ingredients and that is applied undiluted by homeowners to control pests in and around the family dwelling and associated structures. For the purposes of this definition and section 1471-W, subsection 5, petroleum solvents are not considered active ingredients.

[PL 2017, c. 475, Pt. A, §28 (AMD).]

14. Insect. "Insect" means any of the numerous small invertebrate animals generally having the body more or less obviously segmented, for the most part belonging to the class insecta, comprising 6-legged, usually winged forms, including but not limited to beetles, bugs, bees, flies and other allied classes of arthropods whose members are wingless and usually have more than 6 legs, including but not limited to mites, ticks, centipedes and wood lice.

[PL 1975, c. 397, §2 (NEW).]

15. Insecticide. "Insecticide" means any substance or mixture of substances intended for destroying or repelling any insect, or mitigating or preventing damage by any insects.

[PL 1975, c. 397, §2 (NEW).]

16. Limited use pesticide. "Limited use pesticide" means any pesticide or pesticide use classified for limited use by the board.

[PL 1975, c. 397, §2 (NEW).]

16-A. Major forest insect aerial spray application. "Major forest insect aerial spray application" means a project to apply pesticides against a forest insect pest by aerial application over an area containing at least 1,000 acres in the aggregate.

[PL 1983, c. 819, Pt. A, §41 (NEW).]

16-B. Minor forest insect aerial spray application. "Minor forest insect aerial spray application" means a project to apply pesticides against a forest insect pest by aerial application over an area containing less than 1,000 acres in the aggregate.

[PL 1983, c. 819, Pt. A, §41 (NEW).]

16-C. Monitor.

[PL 2015, c. 58, §4 (RP).]

17. Person. "Person" means any individual, partnership, association, fiduciary, corporation, governmental entity or any organized group of persons whether incorporated or not.

[PL 1975, c. 397, §2 (NEW).]

18. Pest. The term "pest" means any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacteria or other micro-organism, except viruses, bacteria or other micro-organisms on or in living man or other living animals, which the commissioner declares to be a pest.

[PL 1975, c. 397, §2 (NEW).]

19. Pesticide. The term "pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant.

[PL 1975, c. 397, §2 (NEW).]

20. Pesticide dealer. "Pesticide dealer" means any person who distributes limited or restricted use pesticides.

[PL 1975, c. 397, §2 (NEW).]

21. Plant regulator. The term "plant regulator" means any substance or mixture of substances intended, through physiological action, for accelerating or retarding the rate of growth or rate of maturation, or for otherwise altering the behavior of plants or the produce thereof, but shall not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants and soil amendments. Also, the term "plant regulator" shall not be required to include any of such of those nutrient mixtures or soil amendments as are commonly known as vitamin hormone horticultural products, intended for improvement, maintenance, survival, health and propagation of plants, and as are not for pest destruction and are nontoxic and nonpoisonous in the undiluted packaged concentration.

[PL 1975, c. 397, §2 (NEW).]

22. Private applicator. "Private applicator" means any person who uses or supervises the use of any pesticide which is classified for restricted or limited use for purposes of producing any agricultural commodity on property owned or rented by him or his employer or, if applied without compensation other than trading of personal services between producers of agricultural commodities, on the property of another person.

[PL 1975, c. 644, §3 (AMD).]

22-A. Private applicator of general use pesticides. "Private applicator of general use pesticides" means a person who uses or supervises the use of general use pesticides for purposes of producing agricultural commodities on property owned or rented by that person or that person's employer when:

A. The agricultural commodities produced are plants or plant products intended for human consumption as food; and [PL 2011, c. 169, §1 (NEW).]

B. The person applying the pesticides or the employer of the person applying the pesticides derives \$1,000 or more in annual income from the sale of those commodities. [PL 2011, c. 169, §1 (NEW).]

[PL 2011, c. 169, §1 (NEW).]

23. Restricted use pesticide. "Restricted use pesticide" means any pesticide or pesticide use classified for use only by or under the direct supervision of a certified applicator by the Administrator of the United States Environmental Protection Agency or by the Commissioner of Agriculture, Conservation and Forestry.

[PL 1979, c. 731, §19 (AMD); PL 2011, c. 657, Pt. W, §6 (REV).]

23-A. Spotter.

[PL 2015, c. 58, §4 (RP).]

23-B. Spray contracting firm. "Spray contracting firm" means a person, as defined in this section, employed or contracted to conduct a public or private pesticide application. This term does not include the owner or lessee of land to be sprayed, employees of that landowner or lessee, the Bureau of Forestry, the employees of the Bureau of Forestry or individuals who are certified as commercial applicators.

[PL 1985, c. 122, §1 (AMD); PL 2011, c. 657, Pt. W, §7 (REV); PL 2013, c. 405, Pt. A, §23 (REV).]

23-C. Spray period.

[PL 2015, c. 58, §4 (RP).]

24. Under the direct supervision of a certified applicator. "Under the direct supervision of a certified applicator," unless otherwise prescribed by its labeling, means the act or process by which a pesticide is applied by a competent person acting under the instructions and control of a certified applicator who is available, if and when needed, even though such certified applicator is not physically present at the time and place the pesticide is applied. In the case of an application made by a commercial applicator, the certified applicator must be physically present at the time and on the site of the application.

[PL 1987, c. 243, §3 (AMD).]

25. Weed. "Weed" means any plant which grows where not wanted.

[PL 1975, c. 397, §2 (NEW).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1975, c. 644, §§1-3 (AMD). PL 1977, c. 20, §§1, 2 (AMD). PL 1979, c. 731, §19 (AMD). PL 1981, c. 374, §§1, 2 (AMD). PL 1983, c. 819, Pt. A, §§40, 41 (AMD). PL 1985, c. 122, §1 (AMD). PL 1987, c. 243, §§1-3 (AMD). PL 1987, c. 723, §§2, 3 (AMD). PL 2007, c. 245, §§1, 2 (AMD). PL 2011, c. 169, §1 (AMD). PL 2011, c. 657, Pt. W, §§6, 7 (REV). PL 2013, c. 405, Pt. A, §23 (REV). PL 2015, c. 58, §§2-4 (AMD). PL 2017, c. 59, §1 (AMD). PL 2017, c. 475, Pt. A, §28 (AMD). RR 2019, c. 1, Pt. A, §20 (COR).

§1471-D. Certification and licenses

1. Certification required; commercial applicators and spray contracting firms. Certification is required for commercial applicators and spray contracting firms as follows.

A. No commercial applicator may use or supervise the use of any pesticide within the State without prior certification from the board, provided that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator; and [PL 1983, c. 819, Pt. A, §42 (NEW).]

B. No spray contracting firm may use or supervise the use of any pesticide within the State without prior certification from the board. [PL 1985, c. 122, §2 (AMD).]

[PL 1985, c. 122, §2 (AMD).]

2. Certification required, private applicators. No private applicator shall use or supervise the use of any limited or restricted use pesticide without prior certification from the board, provided, that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator.

[PL 1975, c. 397, §2 (NEW).]

2-A. Certification required; government pesticide supervisor.

[PL 2015, c. 58, §5 (RP).]

2-B. Certification required; spotters and monitors.

[PL 2015, c. 58, §6 (RP).]

2-C. Exemptions or reduced licensing requirements for certain commercial or custom applications. The board may by rule provide for exemptions from licensing requirements and for reduced licensing requirements for classes of commercial applicators of general-use pesticides applied by hand or nonpowered equipment if the board finds that applications by those classes do not pose a significant risk to health or the environment and the requirement of licensing does not serve a meaningful public purpose.

Notwithstanding Title 7, section 610, subsection 6, rules adopted pursuant to this section to provide exemptions from licensing or reduced licensing requirements are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

[PL 2007, c. 245, §3 (NEW).]

2-D. Certification required; private applicator of general use pesticides for food production. A private applicator of general use pesticides may not use or supervise the use of general use pesticides for food production without prior certification from the board, except that a competent person who is not certified may use such a pesticide under the direct supervision of a certified applicator. Additional certification under this section is not required for a person certified as a commercial applicator or a private applicator under subsection 1 or 2, respectively.

[PL 2011, c. 169, §2 (NEW); PL 2011, c. 169, §6 (AFF).]

3. License required, pesticide dealers. No pesticide dealer shall:

A. Distribute any limited or restricted use pesticide without a distributor's license from the board; or [PL 1975, c. 397, §2 (NEW).]

B. Distribute limited or restricted use pesticides to any person who is not licensed or certified by the board. [PL 1975, c. 397, §2 (NEW).]

[PL 1975, c. 397, §2 (NEW).]

4. Application. Application for licenses or certification shall be accompanied by such a reasonable fee as the board may establish by regulation. The applicant shall provide such information regarding the applicant's qualifications and proposed operations and other relevant matters as required by the board. Commercial applicators and spray contracting firms shall be required by the board to provide proof of financial responsibility in custom application as to such amounts as the board may, by regulation, designate; private applicators may also be required to provide such proof. All applicants to the board for certification or licensing shall be required to comply with such standards of competency as are established by the board concerning adequate knowledge of pesticide distribution or use and the related dangers and necessary precautions; provided that, in the case of applicants for commercial certification and pesticide dealers' licenses, such compliance shall be demonstrated by written examination in addition to such other criteria, including performance testing, as the board may establish.

[PL 1983, c. 819, Pt. A, §44 (AMD).]

5. Issuance. A license or certification may not be issued by the board unless the board determines that the standards for licensing and certification have been met as to those categories for which the applicant has applied and qualified. If a license or certification is not issued as applied for, the board shall provide written notice to the applicant of the reasons therefor. The license or certificate may be issued upon such terms and conditions as the board considers necessary for the protection of the public health, safety and welfare, and for enforcement and administration of this chapter and the rules adopted pursuant to this chapter.

[PL 2015, c. 58, §7 (AMD).]

6. Renewal. Licenses for commercial applicators, spray contracting firms, pesticide dealers and private applicators are valid for such period as prescribed by the board by rule. Application for renewal must be accompanied by such reasonable fee as the board may by rule require. The board

may, by rule, require that such renewal application include reexamination or other procedures designed to assure a continuing level of competence to distribute, use or supervise the use of pesticides safely and properly.

If the board fails to renew a license upon application of the licensee or certificate holder, it shall afford the licensee or certificate holder an opportunity for a hearing in conformity with Title 5, chapter 375, subchapter 4.

[PL 2015, c. 58, §8 (AMD).]

7. Suspension.

A. If the board determines that there may be grounds for revocation of a license or certificate, it may temporarily suspend said license or certificate pending inquiry and opportunity for hearing, provided that such suspension shall not extend for a period longer than 45 days. [PL 1975, c. 397, §2 (NEW).]

B. The board shall notify the licensee or certificate holder of the temporary suspension, indicating the basis therefor and informing the licensee or certificate holder of the right to request a public hearing. [PL 1983, c. 819, Pt. A, §47 (AMD).]

C. If the licensee or certificate holder fails to request a hearing within 20 days of the date of suspension, such right shall be deemed waived. If the licensee or certificate holder requests such a hearing, notice shall be given at least 20 days prior to the hearing to the licensee or certificate holder and to appropriate federal and state agencies. In addition, public notice shall be given by publication in a newspaper of general circulation in the State and such other publications as the board deems appropriate. [PL 1983, c. 819, Pt. A, §48 (AMD).]

D. This subsection is not governed by the provisions of Title 4, chapter 5 or Title 5, chapter 375. [PL 1999, c. 547, Pt. B, §39 (AMD); PL 1999, c. 547, Pt. B, §80 (AFF).]

[PL 1999, c. 547, Pt. B, §39 (AMD); PL 1999, c. 547, Pt. B, §80 (AFF).]

8. Revocation. The District Court may suspend or revoke the certification or license of a licensee or certificate holder upon a finding that the applicant:

A. Is no longer qualified; [PL 1975, c. 397, §2 (NEW).]

B. Has engaged in fraudulent business practices in the application or distribution of pesticides; [PL 1975, c. 397, §2 (NEW).]

C. Used or supervised the use of pesticides applied in a careless, negligent or faulty manner or in a manner which is potentially harmful to the public health, safety or welfare or the environment; [PL 1975, c. 397, §2 (NEW).]

D. Has stored, transported or otherwise distributed pesticides in a careless, faulty or negligent manner or in a manner which is potentially harmful to the environment or to the public health, safety or welfare; [PL 1975, c. 397, §2 (NEW).]

E. Has violated the provisions of this chapter or the rules and regulations issued hereunder; [PL 1975, c. 397, §2 (NEW).]

F. Has made a pesticide recommendation, use or application, or has supervised such use or application, inconsistent with the labelling or other restrictions imposed by the board; [PL 1975, c. 397, §2 (NEW).]

G. Has made false or fraudulent records or reports required by the board under this chapter or under regulations pursuant thereto; [PL 1981, c. 470, Pt. A, §67 (AMD).]

H. Has been subject to a criminal conviction under section 14 (b) of the amended FIFRA or a final order imposing a civil penalty under section 14 (a) of the amended FIFRA; or [PL 1981, c. 470, Pt. A, §67 (AMD).]

I. Has had the license or certificate, which supplied the basis for the Maine license or certification pursuant to subsection 10, revoked or suspended by the appropriate federal or other state government authority. [PL 1977, c. 694, §341 (NEW).]

[PL 1983, c. 819, Pt. A, §49 (AMD); PL 1999, c. 547, Pt. B, §78 (AMD); PL 1999, c. 547, Pt. B, §80 (AFF).]

9. State, federal and local government employees. Individuals who apply pesticides in connection with their duties as officials or employees of federal, state or local governments are subject to the provisions of this chapter concerning licenses and certification, but are exempt from the payment of any fee.

[PL 1975, c. 397, §2 (NEW).]

10. Nonresident licenses. The board may issue a license or certificate without examination to nonresidents who are licensed or certified by another state or the Federal Government substantially in accordance with the provisions of this chapter. Licenses or certificates issued pursuant to this subsection may be suspended or revoked in the same manner and on the same grounds as other licenses or certificates issued pursuant to this chapter. Licenses and certificates issued pursuant to this subsection may be suspended or revoked pursuant to subsection 8, paragraph I.

[PL 1977, c. 694, §342 (AMD).]

11. Arborists. In the case of persons licensed under Title 7, chapter 404, subchapter II, the board may waive the application fee and may consider the arborist license as prima facie evidence of qualification to use pesticides in the categories of use provided by Title 7, chapter 404.

[PL 1999, c. 84, §4 (AMD).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1977, c. 20, §3 (AMD). PL 1977, c. 694, §§338-342 (AMD). PL 1981, c. 374, §§3-7 (AMD). PL 1981, c. 470, §A67 (AMD). PL 1983, c. 819, §§A42-A49 (AMD). PL 1985, c. 122, §2 (AMD). PL 1997, c. 454, §8 (AMD). PL 1999, c. 84, §4 (AMD). PL 1999, c. 547, §§B39,78 (AMD). PL 1999, c. 547, §B80 (AFF). PL 2007, c. 245, §3 (AMD). PL 2011, c. 169, §2 (AMD). PL 2011, c. 169, §6 (AFF). PL 2015, c. 58, §§5-8 (AMD).

§1471-E. Aquatic application, permit required

No person shall apply or cause to be applied a pesticide to the waters of the State without obtaining a waste discharge license from the Department of Environmental Protection pursuant to Title 38, chapter 3, subchapter I, Article 2. [PL 1979, c. 281, §1 (RPR).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1977, c. 20, §4 (AMD). PL 1979, c. 281, §1 (RPR).

§1471-F. Critical areas

No person shall apply pesticides to any area of the State which the board has determined to be a critical area, except to the extent such application is within the limits prescribed by the board in establishing the area. [PL 1975, c. 397, §2 (NEW).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW).

§1471-G. Reports

1. Pesticide dealers to maintain certain records. All pesticide dealers shall maintain records of pesticide distribution for a period of at least 2 years and shall provide such reports and information as the board may, by regulation, require.

[PL 1975, c. 397, §2 (NEW).]

2. Applicators and firms to maintain certain records. All commercial applicators and spray contracting firms shall maintain, for a period of at least 2 years, records indicating the type and amount of pesticide used, the area of use and such other information as the board may require. Said applicators and firms shall provide such information, notification and reports as the board, by regulation, may require.

[PL 1983, c. 819, Pt. A, §50 (AMD).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1983, c. 819, §A50 (AMD).

§1471-H. Inspection

Upon presentation of appropriate credentials, the chair or any member of the board or any authorized employee or consultant of the board may enter upon any public or private premises at reasonable times for the purpose of inspecting any equipment, device or apparatus used in applying pesticides; inspecting storage and disposal areas; inspecting or investigating complaints of injury to persons or land from pesticides; observing the use and application of pesticides; sampling pesticides in use or storage; and sampling pesticide residues on crops, foliage, soil, water or elsewhere in the environment. Upon denial of access to the board or its agents, the board or its agents may seek an appropriate search warrant in a court of competent jurisdiction. Notwithstanding other provisions of this section, a board member or any authorized employee or consultant of the board may enter public or private premises without notification if an emergency exists. The need to take a residue sample in a timely manner constitutes an emergency under this section. [PL 1989, c. 841, §7 (AMD).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1989, c. 841, §7 (AMD).

§1471-I. Enforcement

(REPEALED)

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1979, c. 644, §4 (RP).

§1471-J. Penalties

A person who violates any provision of this chapter or any order, rule, decision, certificate or license issued by the board or commits any act constituting a ground for revocation, except acts punishable under section 1471-D, subsection 8, paragraphs A and H, commits a civil violation subject to the penalties established in Title 7, section 616-A. [PL 1989, c. 841, §8 (AMD).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1975, c. 623, §26A (AMD). PL 1975, c. 770, §§91,92 (RPR). PL 1989, c. 841, §8 (AMD).

§1471-K. Appeal

Any person aggrieved by any action of the board may obtain a review thereof by filing in the Superior Court, within 30 days of notice of the action, a written petition praying that the action of the board be set aside. A copy of such petition shall forthwith be delivered to the board, and within 30 days thereafter the board shall certify and file in the court a transcript of evidence received, whereupon the court shall have jurisdiction to affirm, set aside or modify the action of the board, except that the findings of the board as to the facts, if supported by substantial evidence, shall be conclusive. [PL 1975, c. 397, §2 (NEW).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW).

§1471-L. Subpoenas

The board may issue subpoenas to compel the attendance of witnesses and production of such books, documents and records anywhere in the State in any hearing affecting the authority or privilege granted by a license or permit issued under this chapter, as may be relevant to proceedings of the board. If any person refuses to obey a subpoena issued by the board under this section, the board may apply to any Justice of the Superior Court for an order compelling such person to comply with the requirements of the subpoena. Such justice may issue such order and may punish failure to obey the same as a contempt thereof. [PL 1975, c. 397, §2 (NEW).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW).

§1471-M. Powers of board

1. Establishment of categories and standards. The board shall, by regulation promulgated in conformity with Title 5, chapter 375, subchapter II:

A. Establish categories, and where applicable subcategories, of commercial pesticide applicators depending upon the nature and extent of the pesticide use, the type of pesticide equipment, the degree of knowledge or skill required in their application and such other factors as the board considers relevant, as long as such categories are consistent with, but not limited to, the categories established by the United States Environmental Protection Agency; [PL 2015, c. 58, §9 (AMD).]

B. Establish competency standards for the established categories for the certification and renewal of certification of commercial applicators. Such standards shall require, as a minimum, that the applicant demonstrate, by written examination and, as appropriate, performance testing, knowledge of pests, formulation and labelling of pesticides, equipment and application techniques, safety precautions, potential harmful effects on the environment, and applicable federal and state laws and regulations. [PL 1975, c. 397, §2 (NEW).]

C. Establish standards for the certification and renewal of certification of private applicators. Such standards shall require that the private applicator indicate satisfactory knowledge of pest problems and pest control practices, including as a minimum the ability to recognize common pests and the damage they cause, to understand the pesticide label, to apply pesticides in accordance with label instructions and warnings, to recognize local environmental situations that must be considered to avoid contamination, to recognize poisoning symptoms and corrective procedures, and to understand applicable federal and state laws and regulations. [PL 1975, c. 397, §2 (NEW).]

C-1. Establish standards for the certification and renewal of certification of private applicators of general use pesticides. Such standards must require that the private applicator of general use pesticides indicate satisfactory knowledge of pest problems and pest control practices, including as a minimum the ability to recognize common pests and the damage they cause, to understand the pesticide label and to apply pesticides in accordance with label instructions and warnings. [PL 2011, c. 169, §3 (NEW).]

D. Establish the standards for issuance and renewal of licenses of pesticide dealers. These standards shall include, but not be limited to, requirements concerning transportation of pesticides, the applicant's knowledge of applicable federal and state statutes and regulations, and the applicant's understanding of the dangers involved and the precautions necessary for the safe storage and distribution of pesticides; [PL 1983, c. 819, Pt. A, §51 (AMD).]

E. Establish guidelines and requirements for reporting of information by commercial applicators, pesticide dealers and spray contracting firms to the board; and [PL 2015, c. 58, §10 (AMD).]

F. [PL 2015, c. 58, §11 (RP).]

G. [PL 2015, c. 58, §12 (RP).]

H. Establish standards for the certification and renewal of certification of spray contracting firms. [PL 1983, c. 819, Pt. A, §53 (NEW).]

[PL 2015, c. 58, §§9-12 (AMD).]

2. Designation of critical areas; cooperation; promulgation of rules and regulations. The board may:

A. [PL 1987, c. 702, §3 (RP).]

B. Cooperate with any other agency of this State or its subdivisions, or with any agency of any other state or the Federal Government for the purpose of administering this chapter and of securing uniformity of regulations; [PL 1975, c. 397, §2 (NEW).]

C. On its own or in cooperation with other agencies or persons, publish such information as it deems appropriate, including information concerning injury which might result from improper application or handling of pesticides, and methods and precautions designed to prevent the injury; and [PL 1987, c. 702, §4 (AMD).]

D. Promulgate such other rules and regulations and take such other actions as it deems appropriate to control the use and distribution of pesticides within the State and to otherwise provide that the purposes and policies of this chapter are insured. [PL 1975, c. 397, §2 (NEW).]

[PL 1987, c. 702, §§3, 4 (AMD).]

3. Hazard communication and community right to know. The board shall assist the Director of the Bureau of Labor Standards in providing education and training to aid agricultural employers in complying with the federal Occupational Safety and Health Administration requirements for hazard communication and shall assist the responsible state agencies in providing education and training to aid agricultural employers in complying with the federal requirements for emergency and hazardous chemical inventory forms and community right-to-know reporting.

[PL 1999, c. 57, Pt. B, §2 (RPR).]

4. Designation of critical areas. The board may designate critical areas which shall include, but not be limited to, areas where pesticide use would jeopardize endangered species or critical wildlife habitat, present an unreasonable threat to quality of the water supply, be contrary to a master plan for the area where such area is held or managed by an agency of the State or Federal Government, or would otherwise result in unreasonable adverse effects on the public health, welfare or the environment of the area. The designation of a critical area may prohibit pesticide use or may include such limitations on such use as the board deems appropriate. The proceedings to designate a critical area under this section shall conform to Title 5, chapter 375, subchapter II.

The board, by rule, shall establish criteria for designation of critical areas by March 1, 1989.

In addition to the provisions of the Maine Administrative Procedure Act, Title 5, section 8001, any municipality and, for the purpose of representing unorganized territory, any county may petition the board for establishment of a critical area within their boundaries. If the board designates a critical area, the board shall develop a pesticide management plan for that area after receiving comments from the municipality or, for unorganized territory, the county; the volunteer medical advisory panel as established through the board; local applicators; owners of land within the critical area; and other interested parties and agencies.

[PL 1989, c. 502, Pt. A, §67 (AMD).]

5. Disclosure of rights. When issuing a license, the board shall provide to each licensee a written statement outlining the enforcement process and the process of negotiating agreements in lieu of court action that may occur in the event enforcement action is pursued. The Department of the Attorney General and the Department of Agriculture, Conservation and Forestry shall assist the board in developing an appropriate written statement. The board shall make this information available to all existing licensees within 30 days of the effective date of this section.

[PL 1989, c. 841, §9 (NEW); PL 2011, c. 657, Pt. W, §5 (REV).]

6. Notification. Whenever the board or its staff investigates a complaint alleging a violation of rules adopted pursuant to Title 7, section 606, subsection 2, paragraph G, the staff shall make all reasonable efforts to notify the alleged violator, if identity is known, prior to collecting samples.

[PL 1989, c. 841, §9 (NEW).]

7. Data collection; report. The board shall implement a system of record keeping, reporting, data collection and analysis that provides information on the quantity of product and brand names of pesticides sold. The board, in cooperation with the University of Maine Cooperative Extension Service, shall study ways to improve pesticide information data bases and to optimize the useful analysis of reported information.

Before April 1, 2002, the board shall submit a report on pesticide activities during the previous calendar year to the joint standing committee of the Legislature having jurisdiction over pesticide control matters. The report must contain sales information on quantities of pesticides sold listed by the common name of the active ingredient.

The board shall also include in the report aggregate data on pesticide use based on reports submitted to the board by commercial applicators and other persons required to submit reports under this chapter and rules adopted pursuant to this chapter. The board shall provide the data by sector of use whenever possible. The board shall provide the data by category of pesticide, including data for herbicides, insecticides, fungicides and other major categories. In addition, the board shall include in the report a summary of survey results or other information published by the University of Maine Cooperative Extension Service or the United States Department of Agriculture relating to pesticides use in the State.

The board shall develop a measure to estimate sales and types of pesticides commonly used by homeowners and track trends in the quantities and types of pesticides used by homeowners.

The board shall provide historical information on pesticide use and sales in the report when the information available is appropriate for comparison.

[PL 2001, c. 355, §1 (AMD).]

SECTION HISTORY

PL 1975, c. 397, §2 (NEW). PL 1977, c. 694, §§343,344 (AMD). PL 1981, c. 374, §§8,9 (AMD). PL 1981, c. 470, §§A68,A69 (AMD). PL 1983, c. 568, §2 (AMD). PL 1983, c. 819, §§A51-A53 (AMD). PL 1987, c. 660, §1 (AMD). PL 1987, c. 702, §§3-5 (AMD). PL 1989, c. 502, §A67 (AMD). PL 1989, c. 841, §9 (AMD). PL 1997, c. 389, §1 (AMD). PL 1999, c. 57, §B2 (AMD). PL 1999, c. 724, §1 (AMD). PL 2001, c. 355, §1 (AMD). PL 2011, c. 169, §3 (AMD). PL 2011, c. 657, Pt. W, §5 (REV). PL 2015, c. 58, §§9-12 (AMD).

§1471-N. Chemical control of vertebrate animals

(REPEALED)

SECTION HISTORY

PL 1977, c. 65 (NEW). PL 1979, c. 187 (AMD). PL 2009, c. 393, §8 (RP).

§1471-O. Exercise of powers by Board of Pesticides Control

The powers established under the Maine Pesticide Control Act of 1975, Title 7, chapter 103, subchapter II-A, shall be exercised by the Board of Pesticides Control established by section 1471-B. [PL 1981, c. 112, §2 (NEW).]

SECTION HISTORY

PL 1981, c. 112, §2 (NEW).

§1471-P. Storage of illegal and obsolete pesticides

1. Board to accept illegal and obsolete pesticides. Within the limits of resources made available to it for the storage or disposal of illegal and obsolete pesticides purchased for use in Maine, the board shall accept, store and dispose of pesticides from persons who purchased them with the intent of applying them.

[PL 1981, c. 705, Pt. S, §1 (NEW).]

2. Board may adopt rules and fees. The board may adopt any rules necessary to implement this section, including rules limiting the quantity and nature of pesticides it accepts for storage or disposal. The board may adopt and charge fees for storage or disposal of pesticides presented to it where the amount of pesticides, or special treatments necessary for safe storage or disposal, will require a substantial cost to the board; provided, that the fees charged are close to the actual cost incurred by the board.

[PL 1981, c. 705, Pt. S, §1 (NEW).]

SECTION HISTORY

PL 1981, c. 705, §S1 (NEW).

§1471-Q. Return and disposal of limited and restricted use pesticide containers
(REPEALED)

SECTION HISTORY

PL 1983, c. 542, §§2,3 (NEW). PL 1985, c. 54, §1 (AMD). PL 2011, c. 510, §3 (RP).

§1471-R. Notification and monitoring
(REPEALED)

SECTION HISTORY

PL 1983, c. 819, Pt. A, §54 (NEW). PL 2011, c. 657, Pt. W, §7 (REV). PL 2013, c. 405, Pt. A, §23 (REV). PL 2015, c. 58, §13 (RP).

§1471-S. Requirement for spotters and monitors
(REPEALED)

SECTION HISTORY

PL 1983, c. 819, §A54 (NEW). PL 2015, c. 58, §14 (RP).

§1471-T. Exemption
(REPEALED)

SECTION HISTORY

PL 1983, c. 819, §A54 (NEW). PL 2015, c. 58, §14 (RP).

§1471-U. Municipal ordinances

1. Centralized listing. The Board of Pesticides Control shall maintain for informational purposes, for the entire State, a centralized listing of municipal ordinances that specifically apply to pesticide storage, distribution or use.

[PL 1989, c. 93, §1 (RPR).]

2. Existing ordinances. The clerk of any municipality which, on the effective date of this section, has an ordinance to be listed under subsection 1 shall file a copy of that ordinance with the board by December 31, 1988.

[PL 1989, c. 93, §1 (RPR).]

3. New ordinances. The clerk of the municipality shall provide the board with notice and a copy of any ordinance to be listed under subsection 1 at least 7 days prior to the meeting of the legislative body or the public hearing at which adoption of the ordinance will be considered. The clerk shall notify the board within 30 days after adoption of the ordinance.

[PL 1989, c. 93, §1 (RPR).]

4. Intent. It is the intent of this section to provide information on municipal ordinances. This section shall not affect municipal authority to enact ordinances.

[PL 1989, c. 93, §1 (RPR).]

5. Failure to file. For any ordinance which is not filed with the board, with notice given to the board in accordance with this section, which is otherwise valid under the laws of this State, any provision that specifically applies to storage, distribution or use of pesticides shall be considered void and of no effect after the deadline for filing and until the board is given proper notice and the ordinance is filed with the board.

[PL 1989, c. 93, §1 (RPR).]

SECTION HISTORY

PL 1987, c. 702, §6 (NEW). PL 1987, c. 723, §§4,6 (NEW). PL 1989, c. 93, §1 (RPR).

§1471-V. Local participation

1. Representation. When the board, under section 1471-M, considers the designation of a critical area or the establishment of a pesticide management plan for a critical area, the municipal officers of any affected municipality, or county commissioners in the case of unorganized territories, shall be given the opportunity to select a local representative to serve as an additional board member. For a given action, there shall be only one local representative who shall represent the affected municipality or unorganized territory.

[PL 1987, c. 702, §6 (NEW).]

2. Participation and voting procedure. A local representative appointed under this section may participate officially and vote in deliberations on the designation of a critical area or on the establishment of a pesticide management plan only for a critical area which is in the municipality or unorganized territory represented. A local representative may participate on the board until final designation of the critical area or final establishment of the pesticide management plan, including any administrative or judicial appeals. When the board considers a proposed critical area or pesticide management plan that affects more than one municipality, the board shall take separate action on the portion in each municipality.

[PL 1987, c. 702, §6 (NEW).]

3. Compensation. Local representatives shall be reimbursed only for expenses as regular board members during the period of their service, to be paid by the board.

[PL 1987, c. 702, §6 (NEW).]

SECTION HISTORY

PL 1987, c. 702, §6 (NEW).

§1471-W. General use pesticide dealers

1. License required. Unless exempted under subsection 5, no person may distribute general use pesticides without a license.

[PL 1989, c. 93, §2 (NEW).]

2. Issuance of license. The Board of Pesticides Control shall issue a license to distribute general use pesticides to any person upon payment of a fee of \$20 for a calendar year or any part of a calendar year. The Board of Pesticide Control may issue a license for a one-year, 2-year or 3-year period. Licenses for a period in excess of one year may only be issued with the agreement of or at the request of the applicant. The fee for a 2-year license is 2 times the annual fee. The fee for a 3-year license is 3 times the annual fee. Any person licensed to distribute restricted use pesticides is considered licensed to distribute general use pesticides without any additional fee. All fees collected under this section are deposited in the Board of Pesticides Control Special Fund.

[PL 1997, c. 454, §9 (AMD).]

3. Records; reporting. Any person who distributes general use pesticides to licensed general use pesticide dealers in the State shall keep and maintain records of these sales for annual reporting purposes. These annual reports must include the names of all licensed general use pesticide dealers to whom general use pesticides were distributed, the names of the pesticides, the United States Environmental Protection Agency registration number and the quantity sold. These records must be kept for 2 years after the end of the calendar year. For the purposes of this subsection, "distributes" means sells, ships or delivers general use pesticides to a licensed general use pesticide dealer engaged in retail sales. The board may adopt rules to further clarify who is responsible for reporting under this subsection. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter II-A.

[PL 1997, c. 139, §1 (RPR).]

4. Violations; penalty.

[PL 1989, c. 93, §2 (NEW); PL 1989, c. 841, §10 (RP).]

5. Exemptions. The following situations are exempt from the provisions of this section.

A. Any person may distribute the following products without a general use pesticide dealer license:

- (1) Household use pesticide products with no more than 3% active ingredients;
- (2) The following products, which have limited percentages of active ingredients:
 - (a) Dichlorovos (DDVP) impregnated strips with concentrations not more than 25% in resin strips and pet collars;
- (3) The following products with unlimited percentages of active ingredients:
 - (a) Pet supplies such as shampoos, tick and flea collars and dusts;
 - (b) Disinfectants, germicides, bactericides and virucides;
 - (c) Insect repellents;
 - (d) Indoor and outdoor animal repellents;
 - (e) Moth flakes, crystals, cakes and nuggets;
 - (f) Indoor aquarium supplies;
 - (g) Swimming pool supplies;
 - (h) Pediculocides and mange cure on man;
 - (i) Aerosol products; and
 - (j) General use paints, stains, and wood preservatives and sealants. [PL 1989, c. 93, §2 (NEW).]

B. The board may promulgate rules to exempt the sale of additional general use pesticide products from the dealer licensing provisions of this section. [PL 1989, c. 93, §2 (NEW).]

[PL 1989, c. 93, §2 (NEW).]

SECTION HISTORY

PL 1989, c. 93, §2 (NEW). PL 1989, c. 841, §10 (AMD). PL 1997, c. 139, §1 (AMD). PL 1997, c. 454, §9 (AMD).

§1471-X. State policy; public and private initiatives to minimize reliance on pesticides

It is the policy of the State to work to find ways to use the minimum amount of pesticides needed to effectively control targeted pests in all areas of application. The agencies of the State involved in the regulation or use of pesticides shall promote the principles and the implementation of integrated pest management and other science-based technology to minimize reliance on pesticides while recognizing that outbreaks of disease, insects and other pests will necessitate

fluctuations in pesticide use. These agencies, in cooperation with private interest groups, shall work to educate pesticide users and the general public in the proper use of pesticides and to determine other actions needed to accomplish the state policy. [PL 1997, c. 389, §2 (NEW).]

SECTION HISTORY

PL 1997, c. 389, §2 (NEW).

§1471-Y. Notification of outdoor pesticides application using aircraft or air-carrier equipment (REPEALED)

SECTION HISTORY

PL 2009, c. 378, §1 (NEW). PL 2009, c. 584, §1 (RP).

§1471-Z. Registry of property requiring notification for pesticides applications (REPEALED)

SECTION HISTORY

PL 2009, c. 378, §2 (NEW). PL 2009, c. 584, §2 (AMD). PL 2011, c. 332, §1 (RP).

§1471-AA. Awareness of outdoor pesticides applications; role of the board (REPEALED)

SECTION HISTORY

PL 2009, c. 584, §3 (NEW). PL 2011, c. 332, §2 (RP).

§1471-BB. Refund of deposits (REPEALED)

SECTION HISTORY

PL 2011, c. 510, §4 (NEW). MRSA T. 22 §1471-BB (RP).

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01 DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

026 BOARD OF PESTICIDES CONTROL

Chapter 10: DEFINITIONS AND TERMS

SUMMARY: These definitions and terms are defined as they specifically relate to the use of pesticides, the certification and licensing of pesticide applicators and dealers, and other areas as regulated by the Board in succeeding chapters.

Section 1. Consistent with Statute

All terms used in these Chapters shall be defined as indicated in Title 22 M.R.S.A., Chapter 258-A unless specifically provided herein.

Section 2. Definitions

- A. "Aerial applicator" means all persons who dispense pesticides by means of any machine or device used or designed for navigation of or flight in the air.
- B. "Agricultural pesticide application" means any application of a pesticide upon an agricultural commodity which is performed by or for a commercial agricultural producer.
- C. "Air-carrier application equipment" means any application equipment that utilizes a mechanically generated airstream to propel the spray droplets.
- D. "Applicant" means a person or persons who apply for a certification, license, or permit authorized in 22 M.R.S.A. §1471-D or §1471-N.
- E. "Branch office" means:
 - 1. any home, store, or other business location where an employee of a spray contracting firm directly accepts requests for pest control services from clients through mail, telephone, or walk-in inquiries, and
 - 2. any government or university office where employees receive regular direction to apply pesticides in connection with their duties.
 - 3. It does not include the home of an employee who receives work assignments and directions from a branch office with a master applicator.
- F. "Calibration of equipment" means measurement of dispersal or output of application equipment and adjustment of such equipment to control the rate of dispersal, and droplet or particle size of a pesticide dispersed by the equipment.
- G. "Certification" means the recognition by the Board that an applicant has successfully fulfilled all the appropriate competency criteria as set forth in these Chapters.
- H. "Commercial agricultural producer" means, for the purposes of Chapter 50, any person who produces an agricultural commodity for commercial purposes.

- I. "Commercial applicator" means any person, unless exempted in I(4) hereunder, whether or not the person is a private applicator with respect to some uses, who:
1. Uses or supervises the use of any limited or restricted use pesticide other than as a private applicator; or
 2. Makes or supervises a custom application of a general use pesticide; or
 3. Applies a pesticide in connection with their duties as an official or an employee of federal, state, county, university or local government.
 4. The following classes of applicators are exempt from commercial certification/licensing requirements. Applications not listed below must be performed under the direct on-site supervision of a licensed commercial applicator Master and/or Operator.
 - a. Persons applying ready-to-use general use pesticides by hand or with non-powered equipment:
 - i. to control stinging insects when there is an urgent need to mitigate or eliminate a pest that is a threat to health or safety; or
 - ii. to repel biting insects on patients and other persons under their care or supervision who are unable to apply the material to themselves; or
 - iii. to repel biting insects on minors, such as students and campers, provided that a parent or legal guardian has authorized the application of insect repellents.
 - b. Persons applying general use antimicrobial products by hand or with non-powered equipment to interior or exterior surfaces and furnishings of buildings during the course of routine cleaning procedures.
 - c. Persons applying general use paints, stains or wood preservatives, except for the treatment of standing utility poles.
 - d. Persons installing hardware such as doorknobs and pushplates.
- J. "Commercial applicator/Master" means a commercial applicator who, unless exempted in Chapter 31, Section 1(Company/Agency Licensing Requirements), is responsible for the major pest control decisions including, but not limited to, identifying unusual pests and choosing the appropriate pest control strategies and techniques. This person is also responsible for establishing policies relating to the operating practices of others applying pesticides within the company or agency. Such practices may include equipment maintenance and calibration, employee training, safety and hygiene, pesticide and container disposal, accident mitigation and ensuring that applications are conducted in compliance with all state and federal laws and regulations.
- K. "Commercial applicator/Operator" means a commercial applicator who:
1. applies or directs the application of a pesticide according to the instructions of the master when a master is required according to Chapter 31, Section 1 (Company /Agency Licensing Requirements); or
 2. applies or directs the application of a pesticide and performs the function of the master applicator when a separate master is not required according to Chapter 31, Section 1(Company/Agency Licensing Requirements).

- L. "Compact urban line" means that delineation made by the Maine Department of Transportation which denotes a section of the highway where structures are nearer than 200 feet apart for a distance of one-quarter of a mile.
- M. "Compatibility" means that property of a pesticide that permits its use with other chemicals without undesirable results being caused by the combination.
- N. "Competent" means properly qualified to perform functions associated with pesticide application, the degree of capability required being directly related to the nature of the activity and the associated responsibility.
- O. "Common exposure route" means a likely way (oral, dermal, respiratory) by which a pesticide may reach and/or enter an organism.
- P. "Custom application" means an application of a pesticide:
1. Under contract or for which compensation is received;
 - a. For the purposes of this definition, "under contract" includes verbal or written agreements to provide services which include the use of any pesticide; i.e., private or commercial rental agreements, pest control service agreements, landscape maintenance agreements, etc.
 - b. For purposes of this definition, compensation is deemed to have been received for a pesticide application where any form of remuneration has been or will be exchanged, including payment of cash, rent, or other financial consideration, or by the exchange of goods and/or services. This also includes any agreements where crops grown on rented land will be sold to the landowner or are otherwise grown for the benefit of the land owner.
 2. To a property open to use by the public;
 - a. For purposes of this definition, property is deemed to be open to use by the public where its owner, lessee or other lawful occupant operates, maintains or holds the property open or allows access for routine use by members of the public. Persons are considered to be members of the public even though they may pay a fee or other compensation in order to make use of the property or may visit the property for a commercial purpose.
 - b. Property open to use by the public includes but is not limited to: shopping centers, office and store space routinely open to the public (i.e. rest rooms, self-service areas and display aisles), common areas of apartment buildings, occupied apartments, public pools and water parks, schools and other institutional buildings, public roads, organized recreational facilities, golf courses, campgrounds, parks, parking lots, ornamental and turf areas around condominiums, apartment buildings, stores malls and retail areas of greenhouses and nurseries if the public is allowed access before the pesticide restricted-entry or re-entry interval elapses.
 - c. Examples of property not open to use by the public include without limitation: farms, forest lands, and private residential or commercial property which is not routinely operated or maintained for use by the public or otherwise held open to public use.
 - d. Notwithstanding this definition, property shall not be deemed to be open for use by the public in the following cases:

- i. where the property is devoted primarily to agricultural, forest, ornamental tree or plant production, but this exception shall not apply to campgrounds, leased inholdings or roads within such property which are open for use by the public;
 - ii. where the public has not been permitted upon the property at any time within seven days of when the property received a pesticide application;
 - iii. forestry rights of way where the property has been closed during the time of spraying or during the label restricted entry interval or re-entry period, whichever is greater.
 - iv. where the public has not been permitted on the treated portion of privately held recreational land within seven days of a pesticide application for vegetation management.
- 3. In a food establishment licensed under M.R.S. 22, Chapter 551, or an eating establishment licensed under M.R.S. 22, Chapter 562, except that “custom application” does not include a pesticide application at a licensed food or eating establishment when:
 - a. The establishment is ancillary to the production of an agricultural commodity;
 - b. The owner or an employee of that establishment is certified as a private applicator under section 1471-C, subsection 2; and
 - c. The property is not open to the public.
- 4. A pesticide application shall not be deemed a custom application where it is undertaken by a licensed private applicator on property owned or rented by him or his employer or in trade for personal agricultural services between producers of agricultural commodities.
- Q. "Distribute" means to offer for sale, hold for sale, sell, barter, ship, deliver for shipment or receive and, having so received, deliver or offer to deliver pesticides in this state. This also means giving free samples of unregistered products to any person. Sales of hardware, such as doorknobs and pushplates, shall not be considered distribution for the purposes of this definition.
- R. “Environment” means water, air, land, and all plants and man and other animals living therein, and the interrelationships that exist among them.
- S. "Forest" means a concentration of trees and related vegetation managed primarily for the production of forest agricultural commodities such as timber, fiber or other wood products, including other similar areas managed for recreation or resource conservation.
- T. For the purposes of 22 M.R.S. §1471-D (9), “Government Employee” means a person who is employed full- or part-time as a regular employee of any governmental or quasi-governmental organization including federal, state, county and municipal governments and public universities.
- U. “Hazard” means a probability that a given pesticide will have an adverse effect on man or the environment in a given situation, the relative likelihood of danger or ill effect being dependent on a number of interrelated factors present at any given time.
- V. “Host” means any plant or animal on or in which another lives for nourishment, development, or protection.

- W. "Integrated Pest Management" (IPM) means the selection, integration and implementation of pest damage prevention and control based on predicted socioeconomic and ecological consequences, including: (1) understanding the system in which the pest exists, (2) establishing dynamic economic or aesthetic injury thresholds and determining whether the organism or organism complex warrants control, (3) monitoring pests and natural enemies, (4) when needed, selecting the appropriate system of cultural, mechanical, genetic, including resistant cultivars, biological or chemical prevention techniques or controls for desired suppression, and (5) systematically evaluating the pest management approaches utilized.
- X. "Integrated Pest Management Coordinator" means the lead person in a school system or school who is knowledgeable about integrated pest management and is designated by each school to implement the school pest management policy.
- Y. "License" means a commercial applicator license, a private applicator certification, a dealer license, a permit to chemically control vertebrate animals, or a permit to apply limited use pesticides.
- Z. "Licensing" means the issuance by the Board of a document signifying that the applicant has been certified and has met all applicable employee, fee, insurance and reporting requirements.
- AA. "Major application project" means any pesticide application contract that requires the applicator to apply pesticides to more than 1000 acres in the aggregate within a given year. This does not include repeat applications to the same site.
- BB. "Major pesticide storage facility" means any fixed-site, totally enclosed building or portion of such building owned and/or operated by a pesticide distributor where pesticides are held in storage and which meets one of the following criteria:
1. contains at any one time an amount greater than or equal to 6,000 pounds of dry pesticide product, other than dry formulations of products listed in Chapter 24, Section 2, "Exempted Products," or
 2. contains at any one time an amount greater than or equal to 600 gallons of liquid pesticide product, other than liquid formulations of products listed in Chapter 24, Section 2, "Exempted Products," or
 3. contains liquid pesticides in containers that are thirty (30) gallons or greater in size, other than liquid formulations of products listed in Chapter 24, Section 2, "Exempted Products."
- CC. "Minor pesticide storage facility" means any fixed-site, totally enclosed building or portion of such building owned and/or operated by a pesticide distributor where pesticides are held in storage and which meets one of the following criteria:
1. contains at any one time an amount greater than 100 pounds but less than 6,000 pounds of dry pesticide product, other than dry formulations of products listed in Chapter 24, Section 2, "Exempted Products," or
 2. contains at any one time an amount greater than 50 gallons but less than 600 gallons of liquid pesticide, other than liquid formulations of products listed in Chapter 24, Section 2, "Exempted Products," or
 3. contains liquid pesticides in containers greater than three (3) gallons but less than thirty (30) gallons in size, other than liquid formulations of products listed in Chapter 24, Section 2, "Exempted Products."
- DD. "Non-agricultural pesticide application" means any application of a pesticide that is not an agricultural pesticide application.

- EE. "Non-powered equipment" means pesticide spray equipment which pumps and disperses pesticides without utilization of an electric, gasoline, wind-driven or other motorized power source. By way of example, non-powered equipment includes manual pump spray equipment and self-contained aerosol spray cans or bottles but does not include equipment which employs a motor, except one powered only by hand.
- FF. "Non-target organism" means a plant or animal other than the one against which the pesticide is applied.
- GG. "Off-target direct discharge of pesticides" means the direct application of pesticides onto property beyond the boundaries of the target area intended to be treated. Presence of off-target direct discharge of pesticides may be determined by any evidence, through observation, residue samples or other techniques, that an off-target area has received substantially the same dose of pesticide as a target area.
- HH. "Off-target drift of pesticides" means the drifting of pesticides by air currents or diffusion with resulting deposition of pesticides onto property beyond the boundaries of the target area intended to be treated. The detection of pesticides beyond the boundaries of the target area intended to be treated shall be presumed to be as a result of off-target drift unless there is evidence of off-target direct discharge of pesticides.
- II. "Ornamental plant" means shrubs, trees and related vegetation in and around habitation generally, but not necessarily, located in urban and suburban areas, including residences, parks, streets, retail outlets, and industrial and institutional buildings.
- JJ. "Other forest pests" means forest pests, other than insects and include, but are not limited to, weeds, mites, nematodes, fungi, bacteria, and viruses.
- KK. "Owner" means sole proprietor, partner or stockholder.
- LL. "Person" means any individual, partnership, fiduciary, corporation, governmental entity, association or public or private organization of any character, other than the Board.
- MM. "Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest; any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant; and any nitrogen stabilizer. It does not include multicellular biological controls such as mites, nematodes, parasitic wasps, snails or other biological agents not regulated as pesticides by the U.S. Environmental Protection Agency.
- NN. "Pesticide dealer" means any person who distributes limited or restricted-use pesticides, including but not limited to sales personnel in an outlet, field salesmen, and manufacturers' representatives selling pesticides directly to the consumer or who accept orders for pesticides.
- OO. "Pesticide distributor" means any person required to be licensed to distribute general, restricted or limited use pesticides.
- PP. "Pesticide storage facility" means any fixed-site, totally enclosed building or portion of such building where pesticides are held for storage.
- QQ. "Practical knowledge" means the possession of pertinent facts and comprehension together with the ability to use them in dealing with specific problems and situations.
- RR. "Principal place of business" means the principal location, either residence or office, in the State in which an individual, partnership, or corporation applies pesticides.

- SS. "Private Applicator" means any person who uses or supervises the use of any pesticide which is classified for restricted or limited use for purposes of producing any agricultural commodity on property owned or rented by him or his employer or, if applied without compensation other than the trading of personal services between producers of agricultural commodities, on the property of another person. In situations where the applicator is applying pesticides to crops on rented land, there must be a written contract showing that the grower/applicator retains control over the property as well as the disposition or sale of the harvested crop.
- TT. "Private domestic well" means any well used for drinking water other than one which serves a public water system.
- UU. "Project" means, for the purposes of Chapter 51, the aerial application of pesticides to control an individual forest insect pest complex provided by:
1. Any number of applicator businesses for a single person, or
 2. One applicator business on contiguous parcels of land.
- VV. "Public precautions" means those statements which appear on the pesticide label directed towards the non-applicator public. Public precautions may include, but are not limited to, re-entry intervals.
- WW. "Public water system" means any water supply system that provides water to at least 15 service connections or serves water to at least 25 individuals daily for at least 30 days a year.
- XX. "Regulated pest" means a specific organism considered by a State or Federal agency to be a pest requiring regulatory restrictions, regulations, or control procedures in order to protect the host, man and/or his environment.
- YY. "School" means any public or private elementary or secondary school, kindergarten or nursery school that is part of an elementary or secondary school or a tribally funded school.
- ZZ. "School Building" means any structure used or occupied by students or staff of any school.
- AAA. "School Grounds" means:
1. land associated with a school building including playgrounds, athletic fields and agricultural fields used by students or staff of a school, and
 2. any other outdoor area used by students or staff that is under the control of a school.
- BBB. "Self-service sales area" means any area within or immediately outside a retail or wholesale business in which members of the public have direct access to pesticide products. For the purposes of this chapter, self-service sales areas shall be limited to those pesticide products which require a pesticide dealer to be licensed under 22 M.R.S.A. §1471-W, "General Use Pesticide Dealers."
- CCC. "Sensitive area" means any of the following, except where the area involved is the intended target of the pesticide application:
1. Apiaries, the location of which is registered with the Department of Agriculture, Conservation and Forestry pursuant to 7 M.R.S.A. §2701;
 2. Critical areas designated by the Board pursuant to 22 M.R.S.A. §1471-M(2);
 3. Public wells, drinking water springs used by the public, and public water supply intake points, provided the location of the same is known or should reasonably be known to the pesticide applicator;

4. Private sources of drinking water, where the owner or legal user thereof has given prior notice of the location of such source to the landowner or lessee of the area which will be subject to a pesticide application;
5. Water bodies, including streams, brooks, rivers, ponds, lakes, estuaries and marine waters, provided that any such water body contains water at the time of the pesticide application and is known to the spray applicator or is reasonably detectable from visual observation, reasonably available maps or reasonable inquiry. This term shall not include: (a) in the case of forest aerial spray programs, streams and brooks that are neither shown on reasonably available maps nor visible from an aircraft operating at 1000 feet in elevation above ground level; and (b) waters that are confined and retained completely upon the property of the person conducting or contracting for spray services, and that do not drain into or connect with any other water body;
6. Wetlands of Special Significance.
7. Cleared areas where livestock are contained or pastured, cultivated land, cropland or gardens.
8. A "Sensitive Area Likely to Be Occupied" is an area where humans are likely to be present including the following:
 - a. Residential buildings, together with any associated maintained areas likely to be occupied by humans, such as lawns, gardens, recreational areas and livestock management and housing areas;
 - b. School buildings, together with any associated maintained areas that are areas likely to be occupied by humans, such as playgrounds, athletic fields or courts;
 - c. Commercial, institutional, or other structures likely to be occupied by humans, together with any associated maintained areas such as lawns, gardens, parking and recreational areas;
 - d. Maintained recreational areas likely to be occupied by humans including campgrounds, picnic areas, marked roadside rest areas, marked hiking trails, park and recreation facilities, athletic fields, and other areas for organized sports or recreation. This definition does not include trails located on privately owned lands which are used by permission of the landowner.

DDD. "Spray application" means, for the purposes of Chapter 51, the dispensing of pesticides in any manner from an aircraft.

EEE. "Spray contracting firm" means any person, including a corporation, employed or contracted to conduct a public or private custom application of one or more pesticides. This term does not include:

1. the owner or lessee of land to be sprayed and employees of that landowner or lessee,
2. the Division of Forestry and the employees of the Division of Forestry,
3. individuals who are certified as commercial applicators providing that individual does not have in his/her employment one or more others to undertake pesticide applications; or
4. persons who perform custom applications of pesticides solely on or within a premises which they own or lease.

5. persons and corporations that subcontract for pesticide applications, but do not maintain any control over the pesticide application including which pesticides are applied, when they are applied or how they are applied.
- FFF. "Spray period report" means a written description of the spray activity certifying the date and time, the area usually sprayed, the pesticide used, and including a description of the weather conditions during spray activity. The report must also include a map showing where spray booms were turned on and off, with notation of any non-target areas that were sprayed.
- GGG. "Standard" means the measure of knowledge and ability that must be demonstrated as a requirement for certification.
- HHH. "Storage" means holding pesticides for distribution in locations other than self-service sales areas.
- III. "Susceptibility" means the degree to which an organism is affected by a pesticide at a particular level of exposure.
- JJJ. "Toxicity" means the property of a pesticide to cause any adverse physiological effects.
- KKK. "Uncertified person" means any person who is not holding a currently valid certification document indicating that he is certified under section 4 of FIFRA in the category of the restricted use pesticide made available for use.
- LLL. "Wetlands of Special Significance" means all coastal wetlands and great ponds. In addition, certain freshwater wetlands are considered wetlands of special significance if they have one or more of the following characteristics.
1. **Critically imperiled or imperiled community.** The freshwater wetland contains a natural community that is critically imperiled (S1) or imperiled (S2) as defined by the Natural Areas Program.
 2. **Significant wildlife habitat.** The freshwater wetland contains significant wildlife habitat as defined by 38 M.R.S.A. §480-B(10).
 3. **Location near coastal wetland.** The freshwater wetland area is located within 250 feet of a coastal wetland.
 4. **Location near GPA great pond.** The freshwater wetland area is located within 250 feet of the normal high water line, and within the same watershed, of any lake or pond classified as GPA under 38 M.R.S.A. §465-A.
 5. **Aquatic vegetation, emergent marsh vegetation or open water.** The freshwater wetland contains under normal circumstances at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, unless the 20,000 or more square foot area is the result of an artificial ponds or impoundment.
 6. **Wetlands subject to flooding.** The freshwater wetland area is inundated with floodwater during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Management Agency or other site-specific information.
 7. **Peatlands.** The freshwater wetland is or contains peatlands, except that the Department of Environmental Protection may determine that a previously mined peatland, or portion thereof, is not a wetland of special significance.

7. **River, stream or brook.** The freshwater wetland area is located within 25 feet of a river, stream or brook.

STATUTORY AUTHORITY: 22 M.R.S.A., Chapter 258-A

EFFECTIVE DATE:
July 6, 1979

AMENDED:
April 27, 1988
May 21, 1996
August 17, 1996
October 2, 1996

EFFECTIVE DATE (ELECTRONIC CONVERSION):
March 1, 1997

AMENDED:
April 14, 1998 -inserted definitions for “Agricultural pesticide application” and “Non-agricultural pesticide application”; renumbered; converted to MS Word.
March 5, 2003

NON-SUBSTANTIVE CORRECTION:
February 17, 2004 - cross reference in Section 2.H

AMENDED:
January 4, 2005 – filing 2004-602
March 4, 2007 – Section 2(I)(4)(c), filing 2007-64
July 16, 2009 – filing 2009-251 (major substantive final adoption)
January 29, 2013 – filing 2013-014

CORRECTIONS:
February 2014 – agency names, formatting

AMENDED:
July 23, 2019 – Section 2(A), (P)(2)(d), filing 2019-130

1. Informal hearing. When the staff of the board proposes that the board take action on a possible violation, the board shall notify the alleged violator before discussing the alleged violation. The alleged violator may choose to address the board and may also choose to be represented by legal counsel. This requirement does not constitute and is not subject to the same procedures as an adjudicatory hearing under the Maine Administrative Procedure Act.

[PL 2005, c. 620, §16 (AMD).]

2. Civil violations. The following violations are civil violations.

A. A person may not violate this subchapter, or a rule adopted pursuant to this subchapter or Title 22, chapter 258-A or a rule adopted pursuant to Title 22, chapter 258-A. Except as provided in paragraph B, the following penalties apply to violations of this paragraph.

(1) A person who violates this paragraph commits a civil violation for which a fine of not more than \$1,500 may be adjudged.

(2) A person who violates this paragraph after having previously violated this paragraph within the previous 4-year period commits a civil violation for which a fine of not more than \$4,000 may be adjudged. [PL 2003, c. 452, Pt. B, §6 (RPR); PL 2003, c. 452, Pt. X, §2 (AFF).]

B. A private applicator, as defined in Title 22, section 1471-C, may not violate a rule regarding records maintained pursuant to section 606, subsection 2, paragraph G. The following penalties apply to violations of this paragraph.

(1) A person who violates this paragraph commits a civil violation for which a fine of not more than \$500 may be adjudged.

(2) A person who violates this paragraph after having previously violated this paragraph within the previous 4-year period commits a civil violation for which a fine of not more than \$1,000 may be adjudged. [PL 2011, c. 510, §1 (AMD).]

[PL 2011, c. 510, §1 (AMD).]

2-A. Criminal violation. A person may not intentionally or knowingly violate this subchapter or Title 22, chapter 258-A, a rule adopted under this subchapter or Title 22, chapter 258-A or a restriction of a registration issued pursuant to this subchapter. A person who violates this subsection commits a Class E crime. Notwithstanding Title 17-A, section 1604, subsection 1 and sections 1704 and 1705, the court may impose a sentencing alternative of a fine of not more than \$7,500 or a term of imprisonment of not more than 30 days, or both, for each violation. Prosecution under this subsection is by summons and not by warrant. A prosecution under this subsection is separate from an action brought pursuant to subsection 2.

[PL 2019, c. 113, Pt. C, §1 (AMD).]

3. Continuation. Each day that the violation continues is considered a separate offense.

[PL 1989, c. 841, §3 (NEW).]

4. Exceptions.

[PL 2003, c. 452, Pt. B, §8 (RP); PL 2003, c. 452, Pt. X, §2 (AFF).]

5. Criminal violations.

[PL 2003, c. 452, Pt. B, §8 (RP); PL 2003, c. 452, Pt. X, §2 (AFF).]

6. Other relief. Notwithstanding Title 22, section 1471-D, subsections 6 to 8 and in addition to other sanctions provided under this section, the court may order that a violator obtain recertification credits through board-approved meetings or courses as a condition of retaining, maintaining or renewing a certification or license required under Title 22, chapter 258-A.

[PL 1989, c. 841, §3 (NEW).]

7. Considerations. In setting a penalty under this section, the court shall consider, without limitation:

A. Prior violations by the same party; [PL 1989, c. 841, §3 (NEW).]

B. The degree of harm to the public and the environment; [PL 1989, c. 841, §3 (NEW).]

C. The degree of environmental damage that has not been abated or corrected; [PL 1989, c. 841, §3 (NEW).]

D. The extent to which the violation continued following the board's notice to the violator; [PL 1989, c. 841, §3 (NEW).]

E. The importance of deterring the same person or others from future violations; and [PL 1989, c. 841, §3 (NEW).]

F. The cause and circumstances of the violation, including:

(1) The foreseeability of the violation;

(2) The standard of care exercised by the violator; and

(3) Whether or not the violator reported the incident to the board. [PL 1989, c. 841, §3 (NEW).]

[PL 1989, c. 841, §3 (NEW).]

8. Injunction. The board may bring an action to enjoin the violation or threatened violation of any provision of this subchapter or any rule made pursuant to this subchapter in a court of competent jurisdiction of the district in which the violation occurs or is about to occur.

[PL 1989, c. 841, §3 (NEW).]

9. No damages from administrative action if probable cause exists. A court may not allow the recovery of damages from administrative action taken, or for a stop sale, use or removal order, if the court finds that there was probable cause for the administrative action.


[PL 1989, c. 841, §3 (NEW).]

10. Sunset.

[PL 1991, c. 829, §1 (RP).]

SECTION HISTORY

PL 1989, c. 841, §3 (NEW). PL 1991, c. 829, §1 (AMD). PL 2003, c. 452, §§B6-8 (AMD). PL 2003, c. 452, §X2 (AFF). PL 2005, c. 620, §16 (AMD). PL 2011, c. 510, §1 (AMD). PL 2019, c. 113, Pt. C, §1 (AMD).




State of Maine
Maine Department of Agriculture, Conservation and Forestry
BOARD OF PESTICIDES CONTROL

License Number: COA-7928
JOHN T PIETROSKI
DEPT OF ACF-BOARD OF PESTICIDES CONTROL
Has qualified as required by 22 MRSA Chapter 258-A as:
Commercial Operator
Categories: 2, 7E

ISSUE DATE: 6/3/2022 EXPIRATION DATE: 12/31/2024

State of Maine Maine Department of Agriculture, Conservation and Forestry BOARD OF PESTICIDES CONTROL	BOARD OF PESTICIDES CONTROL 28 State House Station Augusta, Maine 04333-0028 www.thinkfirstspraylast.org 207-287-2731
License Number: COA-7928 - (BPC#56056) JOHN T PIETROSKI 10 Stagecoach Rd Liberty, ME 04949 DEPT OF ACF-BOARD OF PESTICIDES CONTROL Commercial Operator Categories: 2, 7E EXPIRATION DATE: 12/31/2024	EMERGENCY PHONE NUMBERS: Poison Center 1-800-222-1222 National Pesticides Info Center 1-800-858-7378 Board of Pesticides Control 1-207-287-2731 DEP Spill Response Number 1-800-482-0777



State of Maine
Maine Department of Agriculture, Conservation and Forestry
BOARD OF PESTICIDES CONTROL

License Number: PPA-334
JOHN T PIETROSKI

Has qualified as required by 22 MRSA Chapter 258-A as:
Private Applicator

ISSUE DATE: 3/19/2023 EXPIRATION DATE: 10/31/2025

State of Maine Maine Department of Agriculture, Conservation and Forestry BOARD OF PESTICIDES CONTROL	BOARD OF PESTICIDES CONTROL 28 State House Station Augusta, Maine 04333-0028 www.thinkfirstspraylast.org 207-287-2731
License Number: PPA-334 JOHN T PIETROSKI 10 STAGECOACH RD. LIBERTY, ME 04949 BPC# 56056	EMERGENCY PHONE NUMBERS: Poison Center 1-800-222-1222 National Pesticides Info Center 1-800-858-7378 Board of Pesticides Control 1-207-287-2731 DEP Spill Response Number 1-800-482-0777
Private Applicator EXPIRATION DATE: 10/31/2025	

Appendix

APPENDIX A

Examination standards at §171.103(a)(2)

Requirements of the certifying authority:

- All examinations will be presented and answered in writing.
- All persons serving as proctors will be prohibited from taking an examination for which they are proctoring if they are also seeking pesticide applicator certification.
- All persons seeking certification will be required to present at the time of examination a valid, government-issued photo identification.
- All proctors and certification authority personnel will be required to keep exams secure before, during and after the exam period so candidates have access to the exam only in the presence of a proctor.
- Prohibit the use of reference materials not approved by this certifying authority.
- Notify all candidates of his or her examination results.

Requirements for proctors:

- Give instructions on examination procedures to candidates before beginning examinations.
- Monitor examination candidates throughout examination periods.
- Prohibit any verbal or nonverbal communication between candidates and anyone other than the proctor during the examination period.
- Prohibit examination or reference materials from being copied or retained by any person not authorized by this certifying authority.
- Provide and collect certifying authority-approved reference materials for use during the examination.
- Examine reference materials after the examination is complete for portions that may have been removed, altered or destroyed.
- Report to the certifying authority any inconsistencies or irregularities such as cheating, use of unauthorized materials, and attempts to copy or retain materials.
- Conduct examination sessions in accordance with the following exam administration requirements required by this certifying authority: (Maine Board of Pesticides Control).

APPENDIX B
Recertification standards at §171.107

(a) Maintenance of continued competency.

- Each commercial and private applicator must recertify every five years or less from the date of certification.
- The recertification period for commercial applicators is:
- The recertification period for private applicators is:

(b) Process for recertification.

(1) By written examination.

- A certified applicator is found eligible for recertification upon passing a written examination designed to evaluate the level of competency that conforms to the examination standards in §171.103(a)(2).
- Examinations for commercial applicators demonstrate the level of competency required by §171.103.
- Examinations for private applicators demonstrate the level of competency required by §171.105.

(2) By continuing education programs.

- A certified applicator may be found eligible for recertification upon successfully completing a continuing education program pursuant to the certifying authority's EPA-approved certification plan.
 - The quantity, content, and quality of a continuing education program to maintain applicator certification must be sufficient to ensure the applicator continues to demonstrate the level of competency required by § 171.103 for commercial applicators or § 171.105 for private applicators.
 - (ii) Any continuing education course or event relied upon for applicator recertification must be approved by the certifying authority as being suitable for its purpose in the certifying authority's recertification process.
 - (iii) A certifying authority must ensure that any continuing education course or event, including an online or other distance education course or event, relied upon for applicator recertification includes a process to verify the applicator's successful completion of the course or event.

APPENDIX C
Standards for the Direct Supervision of Noncertified
Applicators at §171.201

(b) General requirements.

(1) Requirements for the certified applicator.

- (i) The certified applicator must have a practical knowledge of applicable Federal, State and Tribal supervisory requirements, including any requirements on the product label and labeling, regarding the use of restricted use pesticides by noncertified applicators.
- (ii) The certified applicator must be certified in each category applicable to the supervised pesticide use.

(2) Requirements for the noncertified applicator. The certified applicator must ensure that each noncertified applicator using a restricted use pesticide under his or her direct supervision meets all of the following requirements before using a restricted use pesticide:

- (i) The noncertified applicator has satisfied the qualification requirements under paragraph (c) of this section.
- (ii) The noncertified applicator has been instructed within the last 12 months in the safe operation of any equipment he or she will use for mixing, loading, transferring, or applying pesticides.
- (iii) The noncertified applicator has met the minimum age required to use restricted use pesticides under the supervision of a certified applicator.
 - o A noncertified applicator must be at least 18 years old, except that a noncertified applicator must be at least 16 years old if all of the following requirements are met:
 - (A) The noncertified applicator is using the restricted use pesticide under the direct supervision of a private applicator who is an immediate family member.
 - (B) The restricted use pesticide is not a fumigant, sodium cyanide, or sodium fluoroacetate.
 - (C) The noncertified applicator is not applying the restricted use pesticide aerially.

(3) Use-specific conditions that must be met in order for a noncertified applicator to use a restricted use pesticide. The certified applicator must ensure that all of the following requirements are met before allowing a noncertified applicator to use a restricted use pesticide under his or her direct supervision:

- (i) The certified applicator must ensure that the noncertified applicator has access to the applicable product labeling at all times during its use.
- (ii) Where the labeling of a pesticide product requires that personal protective equipment be worn for mixing, loading, application, or any other use activities, the certified applicator must ensure that any noncertified applicator has clean, labeling-required personal protective equipment in proper operating condition and that the personal protective equipment is worn and used correctly for its intended purpose.
- (iii) The certified applicator must provide to each noncertified applicator before use of a restricted use pesticide instructions specific to the site and pesticide used. These instructions must include labeling directions, precautions, and requirements applicable to the specific use and site, and how the characteristics of the use site (e.g., surface and ground water, endangered species, local population) and the conditions of application (e.g., equipment, method of application, formulation) might increase or decrease the risk of adverse effects. The certified applicator must provide this information in a manner that the noncertified applicator can understand.
- (iv) The certified applicator must ensure that before each day of use equipment used for mixing, loading, transferring, or applying pesticides is in proper operating condition as intended by the manufacturer, and can be used without risk of reasonably foreseeable adverse effects to the noncertified applicator, other persons, or the environment.

- (v) The certified applicator must ensure that a means to immediately communicate with the certified applicator is available to each noncertified applicator using restricted use pesticides under his or her direct supervision.
- (vi) The certified applicator must be physically present at the site of the use being supervised when required by the product labeling.
- (vii) If the certified applicator is a commercial applicator, the certified applicator must create or verify the existence of the records required by paragraph (e) of this section.

(c) Noncertified applicator qualifications. Before any noncertified applicator uses a restricted use pesticide under the direct supervision of the certified applicator, the supervising certified applicator must ensure that the noncertified applicator has met at least one of the following qualifications:

- (1) The noncertified applicator has been trained in accordance with paragraph (d) [the “noncertified applicator training program” explained below] of this section within the last 12 months.
- (2) The noncertified applicator has met the training requirements for an agricultural handler under (Worker Protection Standard -WPS regulations) 40 CFR 170.501 of this title within the last 12 months.
- (3) The noncertified applicator has met the requirements established by a certifying authority that meet or exceed the standards in §171.201(c)(1) [The “noncertified applicator training program” explained below in (d)].
- (4) The noncertified applicator is currently a certified applicator but is not certified to perform the type of application being conducted or is not certified in the jurisdiction where the use will take place.

(d) Noncertified applicator training program.

- (1) General noncertified applicator training must be presented to noncertified applicators either orally from written materials or audio visually. The information must be presented in a manner that the noncertified applicators can understand, such as through a translator. The person conducting the training must be present during the entire training program and must respond to the noncertified applicators’ questions.
 - (2) The person who conducts the training must meet one of the following criteria:
 - (i) Be currently certified as an applicator of restricted use pesticides under this part.
 - (ii) Be currently designated as a trainer of certified applicators or pesticide handlers by EPA, the certifying authority, or a State, Tribal, or Federal agency having jurisdiction.
 - (iii) Have completed an EPA-approved pesticide safety train-the-trainer program for trainers of handlers under (WPS) 40 CFR part 170.

(3) Content of noncertified applicator training

materials. (e) Recordkeeping.

(1) Commercial applicators must create or verify the existence of records documenting that each noncertified applicator has the qualifications required in paragraph (c) Training for noncertified applicators or WPS handler training within last 12 months, requirements of certifying authority, or certified applicator of this section. For each noncertified applicator, the records must contain the information appropriate to the method of qualification as provided in paragraphs (e)(1)(i) through (e)(1)(iv).

(i) If the noncertified applicator was trained in accordance with paragraph (c)(1) of this section, the record must contain the following information:

- (A) The noncertified applicator’s printed name and signature.
- (B) Date training requirement was met.
- (C) The name of the trainer.
- (D) The title or a description of the training provided.

(ii) If the noncertified applicator was trained as an agricultural handler under 40 CFR 170.501 in

accordance with paragraph (c)(2) of this section, the record must contain all of the information required at 40 CFR 170.501(d)(1).

- (iii) If the noncertified applicator qualified by satisfying the requirements established by the certifying authority, the record must contain the information required by the certifying authority.
- (iv) If the noncertified applicator is a certified applicator who is not certified to perform the type of application being conducted or not certified in the jurisdiction where the use will take place, as described in paragraph (c)(4) of this section, the record must include all of the following information:
 - (A) The noncertified applicator's name.
 - (B) The noncertified applicator's certification number.
 - (C) The expiration date of the noncertified applicator's certification.
 - (D) The certifying authority that issued the certification.

- (2) The commercial applicator supervisor must create or verify the existence of the record containing the information in paragraph (e)(1) [method of qualification, etc.] of this section before allowing the noncertified applicator to use restricted use pesticides under his or her direct supervision.
- (3) The commercial applicator supervisor must have access to records documenting the information required in paragraph (e)(1) of this section at the commercial applicator's principal place of business for two years from the date the noncertified applicator used the restricted use pesticide.

(f) Exceptions. The requirements in §171.201 do not apply to the following persons:

- (1) Persons conducting laboratory research involving restricted use pesticides.
- (2) Doctor of Medicine and Doctor of Veterinary Medicine applying restricted use pesticides to patients during the course of ordinary practice of those professions.

APPENDIX D
STATE PROCEDURES FOR RECIPROCITY at
§171.303(a)(9)

The certifying authority will:

- (i) rely only on valid current certifications that are issued under other approved State, Tribal or Federal agency certification plan.
- (ii) will examine the standards of competency used by the State, Tribe, or Federal agency that originally certified the applicator and will determine that, for each category of certification that will be accepted, they are comparable to its own standards.
- (iii) have a mechanism to terminate an applicator's certification upon notification that the applicator's original certification terminates because of a conviction under section 14(b) of FIFRA or was subject to a final order imposing a civil penalty under section 14(a) of FIFRA.
- (iv) issue an appropriate State credential or document to the applicator.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I**

5 Post Office Square Suite 100
Boston, MA 02109-3912

OFFICE OF THE
REGIONAL ADMINISTRATOR

8/18/2023

Megan L. Patterson, Director
Maine Department of Agriculture, Conservation and Forestry
Bureau of Agriculture, Food, and Rural Resources
Division of Animal and Plant Health
28 State House Station
Augusta, Maine 04333

Dear Ms. Patterson:

I am pleased to inform you that the Environmental Protection Agency (EPA) has approved the Maine Department of Agriculture, Conservation and Forestry Board of Pesticides Control (ME BPC) pesticide applicator certification plan (Plan), modified in response to the 2017 revisions to the Certification of Pesticide Applicators regulation at 40 C.F.R. Part 171. Section 11 of the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) requires certifying authorities to have an EPA-approved certification plan to certify applicators of Restricted Use Pesticides (RUPs). The ME BPC's modified certification plan was submitted to EPA by March 4, 2020, the regulatory deadline, and subsequently amended in response to EPA feedback. Its final version, dated July 24, 2023, meets or exceeds the standards of 40 C.F.R. Part 171. Upon receipt of this letter, ME BPC may certify pesticide applicators and continue with certification implementation per the modified plan.

In its Plan, ME BPC states that it "has environmental regulatory authority and jurisdiction statewide, including in Indian country, for all environmental regulatory purposes, including for the purposes of carrying out all functions of the State of Maine Certification Plan prepared for the United States Environmental Protection Agency in accordance with 40 C.F.R. § 171.303." Because of the significant time and resources needed to address the State's assertion of authority to regulate activities on Indian country under FIFRA, EPA is not making a determination on such authority as part of this decision. Consistent with EPA's approach to the State's assertion of jurisdiction under other environmental regulatory programs recently, EPA will continue working to address the State's assertion of authority through potential measures including but not limited to, consultation with the federally recognized Indian tribes in Maine, consistent with Executive Order 13175 (Nov. 6, 2000) and EPA's Policy on Consultation and Coordination with Indian Tribes (May 4, 2011). This approach allows EPA to move forward with approval of the Plan without interruption to certification and training of applicators while it continues to work on the State's assertion of jurisdiction in Indian country.

FIFRA § 11(c) requires EPA and states to make integrated pest management (IPM) instructional materials available upon request in coordination with the Pesticide Safety Education Programs (PSEPs) but prohibits certifying authorities from requiring instruction, or that any individual be shown to be

competent, with respect to IPM techniques. Therefore, EPA approves this Plan except for any requirement on IPM instruction or competency standards and with the understanding that the ME BPC will coordinate with the state PSEP to make IPM instructional materials available upon request. No further action is required on your part.

EPA approves and expects the ME BPC to implement the plan according to the schedule in Section 13 of the plan, including the commitments to complete all statutory and regulatory changes. Certified applicators will be brought into compliance as they recertify, no later than December 31, 2029. EPA Region 1 is available to provide technical assistance to the ME BPC in response to questions or the need for additional plan modifications.

Thank you very much for all your effort on this undertaking. EPA looks forward to continuing to work with you in the coming years to meet our shared goal of protecting applicators, the public, and the environment from the risks associated with the use of RUPs.

Sincerely,

David W. Cash
EPA Regional Administrator
EPA Region 1

cc:

Amanda Beal, DACF Commissioner
John Pietroski, Manager, BCP Pesticide Program
Karen McGuire, Region 1 Deputy Administrator
Nancy Barmakian, LCRD Division Director
Dr. Michal Freedhoff, OCSPP Assistant Administrator
Ed Messina, OPP Director
Mary Elissa Reaves, OPP Pesticide Re-evaluation Division Director



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

5

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

Memorandum

To: Board of Pesticides Control
From: John Pietroski, Acting Director
Subject: LD 1770: Resolve, Directing the Board of Pesticides Control to Transition to Electronic Submission of Pesticides Sales and Use Data

September 1, 2023

Background:

On June 23, 2023, LD 1770 “Resolve, Directing the Board of Pesticides Control to Transition to Electronic Submission of Pesticides Sales and Use Data” was signed by the governor. This resolve directs BPC to conduct rulemaking requiring electronic submission of annual commercial applicator reports and pesticide dealer reports. The Board is also obligated to submit a report to the legislature by March 2024 that reports on the progress made on the implementation of this resolve.

L.D. 1770 Resolve, Directing the Board of Pesticides Control to Transition to Electronic Submission of Pesticides Sales and Use Data

Sec. 1. Board of Pesticides Control; pesticides sales and use data. Resolved: That, pursuant to the Maine Revised Statutes, Title 22, section 1471-M, subsection 2, paragraph D, the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control shall adopt any rules necessary to implement the transition from paper to electronic format of reports required to be submitted to the board as required by Title 22, section 1471-G. The board shall implement a system of electronic data collection that is efficient for those required to submit reports to the board under Title 22, section 1471-G and useful to the board and members of the public. Rules adopted pursuant to this section are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

Sec. 2. Report. Resolved: That, no later than March 1, 2024, the director of the Board of Pesticides Control within the Department of Agriculture, Conservation and Forestry shall submit a report regarding rulemaking and implementation of electronic reporting under section 1 to the Joint Standing Committee on Agriculture, Conservation and Forestry,

MEGAN PATTERNSON, DIRECTOR
90 BLOSSOM LANE, DEERING BUILDING



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which may report out a bill to the Second Regular Session of the 131st Legislature based on the report.

Below are considerations that staff have identified to transition requiring electronic reports.

Software Changes

Currently, BPC has the capacity to electronically collect annual summary report information from commercial applicators. Commercial applicators enter their summarized information into the Maine Pesticide Enforcement, Registration and Licensing Software (MEPERLS) on an annual basis as part of renewing their license. Renewal of licenses requires submission of this data; data may be entered electronically or paper copies may be sent. Information currently collected electronically for commercial applicator use includes: pesticide trade name, EPA registration number, total gallons/pounds of undiluted formulation, crop site, and total area treated. Dealers of restricted use, and general use pesticides must also submit summaries of pesticides sold annually. Within BPC dealer reports are categorized and compiled as General Use Pesticide Dealers (GUP) and Restricted Use Pesticide Dealers (RUP). The MePERLS system is also currently programmed to allow for GUPs to enter their sales data electronically. Currently, RUP sales data can be uploaded as a static document and is collated on an Excel spreadsheet when temporary staff time can be allocated to the task.

To implement this new law, the Board may want to consider what records applicators must keep for adjuvants. When adjuvants were classified as pesticides in 2022 with the passing of LD 2019 all regulations relevant to pesticides became applicable to adjuvant products. Currently in MePERLS, EPA registration number entry auto fills active ingredients and product name and allows the system to flag for unregistered pesticides and other errors. FIFRA 25(b) minimum risk products do not have EPA registration numbers and are entered by selecting a radio button for product type and manually entering data. Given that adjuvants are not registered by EPA, adjuvants also do not have EPA registration numbers. New functionality will need to be developed in MePERLS to capture adjuvant product use summaries.

Potential Rulemaking

The Board may need to engage in rulemaking to implement LD 1770 in Chapter 50: Recordkeeping & Reporting. The Board may want to consider:

1. Adding language that makes reports submitted electronically through a portal
2. Creating a timeline for implementation and start year that electronic reports will be required; and
3. Additional language for the transition from paper to electronic reports, especially for individuals that do not have computer or broadband access.

Notice to constituents

In accordance with the Administrative Procedures Act (M.R.S.A 5 §8001) constituents will be informed of rulemaking once it is officially initiated. Additionally, public comment regarding the rule change will also be collected and integrated into rule if possible. However, given that not all applicators and dealers are engaged with the BPC rulemaking process, additional notifications will need to be sent to commercial applicators, spray contracting firms, general use pesticide dealers, and restricted use pesticide dealers to ensure transition compliance. These notifications will take place in the form of direct and GovDelivery emails, presentations at recertification meetings, reminders at Board meetings regarding implementation, etc.

Reminders for annual summary reports are typically sent out in the fall, and this information will be attached to any licensing renewal reminders that staff submit to these parties.



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
PLANT HEALTH PROGRAM
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

6

AMANDA E. BEAL
COMMISSIONER

To: Board of Pesticides Control
From: Hillary Peterson, Integrated Pest Management Specialist
Re: Request for Funding
Date: August 23, 2023

The Integrated Pest Management Program is requesting funds to assist with ongoing efforts for the advancement of IPM in Maine. The Maine IPM Program works closely with the BPC to educate and promote IPM across the entire State of Maine, including giving talks annually for applicator credits across several categories, updating the GotPests Website with new factsheets and research, and referring to the BPC website in all presentations and educational materials.

Over the past two years, the program has been funded through various means including some BPC funding, general plant health funding, and using only leftover materials from the past IPM program. Materials are running out, and to run a more consistent IPM program, funding needs to be secured for the 2024 calendar year. While the program has secured a total of \$54,000 in grant funding for three new IPM programs (Biological Control of Black Swallowwort, \$15,000, USDA NIFA; Biological Control of Spotted Wing Drosophila, \$20,000, USDA NIFA; Augmentative Biological Control Working Group, NE IPM Center, \$19,920), the full IPM program cannot function without additional funds for the other established programs. Other programs that require funding include: Greenhouse IPM (estimated at \$1,110 annually), outreach specific to the IPM council and its mission (estimated at \$2,550 annually), funds for travel to provide education and outreach on various IPM topics, often for CEU Credits (estimated at \$9,471 annually), the School IPM Program (estimated at \$1,500 annually), structural IPM programs (namely, the Rodent Academy, which maintains a relationship with the world-renowned Rodentologist Bobby Corrigan, estimated at \$10,000 annually), and the mosquito monitoring program (estimated at \$11,0000 annually). The IPM program is requesting a total budget of \$35,621 for the 2024 program. Please see the following pages for a breakdown of costs, along with expenditures for the end of 2022 and 2023 as examples of program costs.

Sincerely,

Hillary Peterson,
IPM Entomologist
Maine Department of Agriculture, Conservation and Forestry

GARY FISH, STATE HORTICULTURIST
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2024 Maine IPM Program Budget Breakdown

The following table demonstrates funding needed for the 2024 Maine IPM Program, broken down by month and sub-category (topic). This table does not include the entirety of the Maine IPM Program, which otherwise is funded by three grants (currently) and several virtual presentations which are anticipated but do not come at a travel cost. Materials are included in this budget as the IPM Program has now worked through a backlog of left-over materials left by the previous Maine IPM Specialist, Kathy Murray.

Month	Topic	Program	Description of Needs	Cost Estimate
January	Outreach & Education	Entomological Society of America Annual Membership Fee	Membership Fee	\$ 161.00
January	Outreach & Education	Agricultural Trades Show	Materials, table fee	\$ 500.00
January	IPM Council	Grow ME Green Expo	Materials, table fee	\$ 500.00
January	Outreach & Education	Attending Tri-State Workshop	Hotel, per diem	\$ 300.00
January	Outreach & Education	Various Presentations & Workshops	Materials, hotel	\$ 500.00
February	School IPM	School IPM Comprehensive Training	Folders, printing, binders, items for hands-on activities, hotel if	\$ 300.00
February	Greenhouse IPM	Greenhouse Best Practices Workshop	Materials, catering, honorarium	\$ 1,100.00
February	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
March	IPM Council	Ag Day in the Legislature	Materials, table fee	\$ 50.00
March	IPM Council	Maine Invasive Species Network Meeting	Materials, table fee	\$ 50.00
March	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
April	School IPM	School IPM Comprehensive Training	Folders, printing, binders, items for hands-on activities, hotel if	\$ 300.00
April	IPM Council	Maine Arborist Association Meeting	Materials, table fee	\$ 300.00
April	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
May	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
June	Vector Responsibilities	Mosquito Monitoring Program (June through October)	Employee (20 hours per week), materials, fleet vehicle if needed, mileage	\$ 11,000.00
June	School IPM	School IPM Comprehensive Training (EPMA Conference)	Folders, printing, binders, items for hands-on activities, hotel if	\$ 300.00
June	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
July	School IPM	School IPM Turfgrass Training	Folders, printing, binders, items for hands-on activities, hotel if	\$ 300.00
July	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
August	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
September	IPM Council	Common Ground Country Fair	Materials, table fee	\$ 50.00

2024 BPC Funding Request IPM Program Budget Breakdown

Month	Topic	Program	Description of Needs	Cost Estimate
September	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
October	School IPM	School Nurse Conference	Printing, handouts, hotel if needed	\$ 300.00
October	Structural IPM	Rodent Academy	Printing, handouts, honorarium, down payment for facility	\$ 10,000.00
October	IPM Council	NE International Society of Arboriculture ISA Annual Conference	Materials, table fee	\$ 500.00
October	IPM Council	Maine Municipal Association Convention	Materials, table fee	\$ 500.00
October	IPM Council	Coastal ME Botanical Garden Community Outreach	Materials, table fee	\$ 100.00
October	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
November	Outreach & Education	ESA Meeting Attendance - Networking & Presentations	Flight, hotel, registration fee	\$ 3,000.00
November	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
December	Outreach & Education	Various Presentations & Workshops	Materials, hotel, per diem, travel	\$ 500.00
Total				\$ 35,611.00

Previous Calendar Year - Maine IPM Program (September 2022 - October 2023)

The following table demonstrates funds incurred by the Maine IPM Program in the previous calendar year. This budget is estimated at a lower cost than the requested 2024 budget due to no material costs, as the IPM Program was working through a backlog of remaining materials from the previous Maine IPM Program (run by Kathy Murray). While it worked to rely on the materials at hand, these materials have now run out and need to be re-designed and replaced.

Year	Month	Topic	Program	Description of Costs	Approx. Num Reach	Cost Estimate
2023	October	Structural IPM	Rodent Academy	Printing, handouts, mileage, honorarium, down payment for facility	100	\$ 10,000.00
2023	October	Vector Responsibilities	Managed Mosquito Program	Employee (20 hours per week), mileage, materials	0	\$ 2,200.00
2023	September	Vector IPM	Vector Control Districts USGS Trip	Mileage, per diem, flight. Partially funded program that covers lodging and per diem.	100	\$ 620.00
2023	August	Vector Responsibilities	Managed Mosquito Program	Employee (20 hours per week), mileage, materials	0	\$ 2,200.00
2023	August	IPM Research	Managed Spotted Wing Drosophila and Black Swallowwort Biocontrol Programs (funded by USDA NIFA)	Employee (20 hours per week), mileage, materials	50	\$ -
2023	August	Outreach / Education	Maine Master Naturalist Program	Educated about insects including a 2hr presentation and a 5hr field day	Mileage	50 \$ 31.08

September 2022 - October 2023 Maine IPM Program Spending

Year	Month	Topic	Program	Description of Costs	Approx. Num Reach	Cost Estimate
2023	July	Vector Responsibilities	Managed Mosquito Program	Employee (20 hours per week), mileage, materials	0	\$ 2,200.00
2023	July	IPM Research	Managed Spotted Wing Drosophila and Black Swallowwort Biocontrol Programs (funded by USDA NIFA)	Employee (20 hours per week), mileage, materials	50	\$ -
2023	July	School IPM	School IPM Comprehensive Training (EPMA Conference)	Mileage, materials (using leftover materials from Kathy Murray)	25	\$ 16.80
2023	June	Vector Responsibilities	Managed Mosquito Program	Employee (20 hours per week), mileage, materials	0	\$ 2,200.00
2023	June	IPM Research	Managed Spotted Wing Drosophila and Black Swallowwort Biocontrol Programs (funded by USDA NIFA)	Employee (20 hours per week), mileage, materials	50	\$ -
2023	May	Vector Responsibilities	Vector Biology Bootcamp (Fully funded program that covered all travel, food, and lodging costs).			
2023	April	School IPM	School IPM Comprehensive Training (Pittsfield)	Mileage, materials (using leftover materials from Kathy Murray, hosting school donated coffee and snacks)	25	\$ 36.12

September 2022 - October 2023 Maine IPM Program Spending

Year	Month	Topic	Program	Description of Costs	Approx. Num Reach	Cost Estimate
2023	April	School IPM	School IPM Comprehensive Training (Lewiston)	Mileage, materials (using leftover materials from Kathy Murray, hosting school donated coffee and snacks)	25	\$ 29.40
2023	April	Outreach / Education	Preschool IPM Visit (Brunswick)	Mileage, materials (using leftover materials from Kathy Murray)	10	\$ 29.40
2023	March	Outreach / Education	Maine Invasive Species Network Tabling & Presentation	Mileage, materials	100	\$ 123.08
2023	March	IPM Council	Tabling: Agriculture Day at the Legislature	Mileage, materials	100	\$ 52.10
2023	March	IPM Council	March IPM Council Meeting	Food (paid out of pocket)	0	\$ 50.00
2023	March	Greenhouse IPM	Greenhouse Best Practices Workshop	Materials, mileage, catering, honorarium	50	\$ 1,100.00
2023	February	School IPM	School IPM Comprehensive Training (Nobleboro)	Mileage, materials (using leftover materials from Kathy Murray, hosting school donated coffee and snacks)	25	\$ 25.20
2023	January	Outreach / Education	Agricultural Trades Show	Mileage, materials	300	\$ 65.12
2022	December	IPM Council	December IPM Council Meeting	Food (paid out of pocket)	0	\$ 50.00
2022	September	IPM Council	Commonground Country Fair	Mileage, materials	2000	\$ 327.68
2022	September	Outreach / Education	Portland Sustainability & Landscape Education Event	Mileage, materials	25	\$ 97.04
						\$ 21,453.02

Supplement to Agenda Item 7. Endangered Species Act (ESA) Changes Approaching for Pesticide Registration and Labeling

EPA webpage overview describing ESA implementation: <https://www.epa.gov/endangered-species/implementing-epas-workplan-protect-endangered-and-threatened-species-pesticides>

Vulnerable Species Pilot Project (VS) documents can be found: <https://www.regulations.gov/docket/EPA-HQ-OPP-2023-0327/document>

VS Pilot StoryMap:

<https://storymaps.arcgis.com/collections/896d140363174c9d8ee78e4c471bd7fd>

VS webinar recording: <https://www.youtube.com/watch?v=H8FmuN7AEY4>

Public comment on VS documents closed August 6, 2023 (though the technical document for VS and Herbicide Strategy (HS) is shared, so comments on that document could still be made under the HS docket comment period).

Herbicide Strategy (HS) documents can be found: <https://www.regulations.gov/docket/EPA-HQ-OPP-2023-0365/document>

HS webinar recording not yet posted.

Comments on the HS documents are due September 22, 2023.

**Draft Herbicide Strategy Framework
to Reduce Exposure of Federally Listed Endangered and
Threatened Species and Designated Critical Habitats from
the Use of Conventional Agricultural Herbicides**

July 2023

Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
Washington, DC



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List of Other Documents Included in the Herbicide Strategy Docket

- Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation Practices to Protect Non-Target Plants and Wildlife
- Herbicide Strategy Case Study Summary and Process
- Case Study Magnitude of Difference Calculations
- Crosswalk of Species Habitat Assumptions, Aquatic Bins, and Hydrologic Regions
- List of Species in Each Grouped Species Pesticide Use Limitation Area
- Herbicide Strategy Species Overlap and Characteristics Supporting Case Studies
- Application of EPA’s Draft Herbicide Strategy Framework Through Scenarios that Represent Crop Production Systems

1 Executive Summary

When the Environmental Protection Agency (EPA) registers a pesticide or reevaluates it in registration review under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Agency has a responsibility under the Endangered Species Act (ESA) to ensure that the pesticide registrations do not jeopardize the continued existence of federally threatened or endangered (listed) species or adversely modify their designated critical habitats (CH). Chemical stressors, such as pesticides, are one of many factors that can contribute to population declines of listed species. Meeting this ESA responsibility is a formidable task, considering the tens of thousands of pesticide products and amendments that require EPA to review potential effects for over 1,700 U.S. listed species.

EPA's Pesticide Program has been unable to keep pace with its ESA workload, resulting not only in inadequate protections for listed species but also successful litigation against the Agency that has increased in frequency in recent years. Historically, it can take between 4-12 years of analysis and consultations with the Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) in order to meet ESA obligations for a pesticide. Even if EPA completed this work for all of the pesticides that are currently subject to court decisions and/or ongoing litigation, that work would take until the 2040s, and even then, would represent only 5% of EPA's ESA obligations.

This situation creates significant uncertainty for farmers, other pesticide users, and pesticide registrants. For example, if a court vacates a pesticide action, users may lose access to the pesticide for the several years likely needed for EPA to meet its ESA obligations for that action. Without certain pesticide products, farmers could have trouble growing crops that feed Americans and public health agencies could lack the tools needed to combat insect-borne diseases.

EPA recognizes that it needs to fundamentally change the way it approaches its ESA-FIFRA work and has taken several steps in the last 18 months to do so. In January 2022, the Agency committed to fully complying with the ESA before registering any new conventional pesticides. In April 2022, the Agency released a workplan (USEPA, 2022a) on how it will address the ESA-FIFRA challenge, including by working to improve how EPA assesses effects to listed species in its pesticide evaluations and consultation processes, and how it plans to implement early protections for listed species in its FIFRA process (before EPA has made effects determinations or, if necessary, completed consultation). And, in November 2022, the Agency released a workplan update (USEPA, 2022b) which describes the Agency's efforts to reduce pesticide exposure to nontarget organisms, including listed species, during the FIFRA registration review process and through other FIFRA actions. The update also describes other planned strategies to expedite implementation of the ESA Workplan, including strategies for identifying and implementing early ESA mitigation across groups of chemicals (*e.g.*, herbicides, rodenticides, insecticides).

Today's proposed Herbicide Strategy (referred to as the Strategy) is another key step forward for EPA in implementing early, practical protections for listed species and increasing the efficiency of meeting its ESA obligations. The Strategy covers conventional herbicides – an important, widely used tool that growers use to prevent or eliminate weeds that would otherwise compete for light, moisture, and nutrients with the crops, affecting the quality and quantity of produce. This proposed Strategy, once finalized, would provide early protections for over 900 listed species and their critical habitats from agricultural uses of conventional herbicides in the lower 48 states. The mitigations proposed by the Strategy would address potential impacts to the group of species (plants and species that depend on plants) likely to be most sensitive to herbicides, and would thus, likely reduce the potential for population-level impacts to the over 900 listed species in the lower 48 states from herbicide use.

The proposed Strategy describes an efficient approach to determine the need for, the level of, and geographic extent of early mitigations for listed species from agricultural uses of conventional herbicides. The proposed mitigations reflect measures that can be readily, and are often already, implemented by growers and identified by pesticide applicators. The proposed Strategy is structured to provide flexibility to growers to choose mitigations that work best for their situation. Additionally, the draft Strategy may require more or less mitigation for growers/pesticide applicators depending on their location. For example, less mitigation would be needed where crops are grown on relatively flat lands or in the Western United States, which experience less rain. The proposed Strategy also describes EPA's current thinking on how it could add other mitigation measures in the future, particularly to incorporate emerging technology or new information on the effectiveness of additional common practices used by growers. In addition, it describes some potential approaches for growers/pesticide applicators to reduce or potentially meet the mitigation requirements based on their existing practices. For example, EPA is considering exempting growers from certain runoff/erosion requirements in the proposed Strategy when they participate in conservation programs designed for that purpose such as United States Department of Agriculture's (USDA) National Resource Conservation Service (NRCS) program.

Later sections of the proposed Strategy describe a more efficient approach for implementing geographically specific mitigations associated with the Strategy, and EPA's current thinking on how it would update the areas identified for such restrictions as additional, more refined species maps and/or critical habitat information becomes available. It also describes how EPA plans to implement the Strategy in its registration and registration review decisions; and how the Agency envisions the interplay between this Strategy and others such as the recently proposed Vulnerable Species Pilot (June 2023) and FIFRA Interim Ecological Mitigations (IEM) described in the ESA Workplan Update.

EPA also provides case studies for representative herbicides to illustrate the process and ascertain the appropriateness of the criteria (fate properties of a chemical such as the tendency to sorb to soil, and potential effects to non-target species) for selecting the level

of mitigation for each representative chemical. The proposed Strategy, once finalized, would ensure herbicides with similar characteristics have consistent mitigations, creating a level playing field. In addition, because the Strategy would establish a consistent approach for identifying the need and extent of mitigations across herbicides, it would also be more predictable for growers than EPA's current approach.

Another benefit of the proposed Strategy, once finalized, is that it could help increase the efficiency of and expedite future pesticide consultations with the Fish and Wildlife Service (FWS). EPA and FWS are considering whether a pesticide programmatic consultation, or other efficiency measure similar to the proposed Strategy can be used in the development of a programmatic consultation process. Once completed, a programmatic approach would protect the listed species most impacted by herbicides more quickly, accelerate the EPA's ability to meet its ESA obligations for particular herbicides and across the herbicide classes, thus reducing the legal vulnerability of EPA's pesticide decisions, and better ensuring the continued availability of important pest management tools.

Finally, this document describes EPA's current thinking on how it may implement the Strategy through registration and registration review decisions for particular herbicides. EPA acknowledges that it is not feasible to implement the Strategy on all currently registered herbicide products at the same time. EPA updated its registration review schedule on April 10, 2023 to align with the strategies discussed in the ESA Workplan Update. Several conventional herbicides in registration review are now scheduled for a proposed interim decision in calendar year 2024.

In addition to this Herbicide Strategy Framework, EPA is releasing multiple supporting documents including a *Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation to Protect Non-Target Plants and Wildlife* (referred to throughout this document as "**Technical Support for Mitigation**") with supporting information on potential mitigation measures EPA identified to date and for which EPA has data on their efficacy in reducing exposure. The Agency welcomes stakeholder feedback on the proposed Strategy and the supporting documents.

2 Introduction

2.1 Background

Under section 7(a)(2) of the ESA, EPA must ensure that any action authorized, funded, or carried out by the Agency (referred to as an “agency action”) is not likely to jeopardize the continued existence of Federally threatened and endangered (referred to as listed) species or destroy or adversely modify CH. In fulfilling the requirements of ESA section 7(a)(2), EPA must use the best scientific and commercial data available. When appropriate for the agency action, EPA consults with the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS; hereinafter the Services). Through consultation, EPA must ensure that these actions are not likely to jeopardize the continued existence of listed species or adversely modify their CHs.

In past decades, the Agency has met those obligations for less than 5% of the thousands of pesticide actions it completes annually under FIFRA. The entire process, including consulting with the Services to adopt protections, can take at least four years for a single pesticide and up to 15 years in rare cases. In total, thousands of FIFRA actions will require an ESA review over the next decade alone. EPA’s Pesticide Program has been unable to keep pace with its ESA workload, resulting not only in inadequate protections for listed species, but also litigation against the Agency that has increased in frequency in recent years. Courts are increasingly impatient with EPA over its non-compliance with ESA obligations and have even vacated certain registrations. EPA can no longer ignore its ESA obligations, especially if we want to ensure the availability of pesticides for growers and other pesticide users.

The EPA’s Office of Pesticide Programs (OPP) faces the decades-long challenge of meeting its ESA obligations for the large number of actions taken annually under the FIFRA. EPA’s [April 2022 ESA Workplan](#) describes several challenges that have made it difficult for EPA to implement timely and effective strategies that specifically address protecting listed species from possible pesticide effects. To better protect listed species, the workplan also describes how EPA is working to improve how EPA assesses effects to listed species in its pesticide evaluations and consultation processes, and how it plans to implement early protections (before EPA has made effects determinations or completed consultation, if necessary) for listed species. In November 2022, EPA released an update to the workplan (USEPA, 2022b)¹, which describes EPA’s efforts to reduce pesticide exposure to non-target organisms, including listed species, during the FIFRA registration review process and through other FIFRA actions. In the workplan update, EPA also described several strategies that EPA is developing to expedite progress on the ESA Workplan initiatives. One of the strategies included in the workplan update is the proposed Strategy.

This Strategy focuses on developing and implementing early protections for more than 900 listed species and designated CH from potential exposure from conventional herbicides with

¹ <https://www.epa.gov/system/files/documents/2022-11/esa-workplan-update.pdf>

agricultural uses. The goal of the proposed mitigations is to minimize exposure, and thereby reduce the likelihood of a future jeopardy or adverse modification (J/AM) determination and minimize potential take² from the ongoing use of registered conventional agricultural herbicides. EPA focused the Strategy on agricultural crop uses in the lower 48 states because hundreds of millions of pounds of herbicides (and plant growth regulators) are applied each year (USEPA, 2017), which is substantially more than non-agricultural uses and for other pesticide classes (e.g., insecticides, fungicides). Additionally, hundreds of listed species in the lower 48 states occur in habitats that are adjacent to agricultural crop sites. Therefore, minimizing the most common exposure routes of concern from the use of conventional agricultural herbicides in the lower 48 states is expected to provide early protections for hundreds of listed species. Through the Strategy, EPA would be able to protect listed species now rather than wait decades for it to complete consultation on the hundreds of currently registered herbicides, and thus ensure these tools remain available to the nation's growers.

In particular, EPA developed mitigation options for conventional agricultural herbicides to reduce pesticide transport via spray drift (pesticide movement by air/wind at the time of application) and runoff/erosion (pesticide movement with water/soil) that could result in exposure to listed plants and listed animals that depend on plants. To support the Strategy mitigation options, EPA is also releasing a document titled, [Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation to Protect Non-Target Plants and Wildlife](#) (USEPA, 2023a) (referred to throughout this document as “**Technical Support for Mitigation**”) with supporting information on potential mitigation measures EPA identified to date and for which EPA has data on their associated efficacy in reducing exposures³. EPA focused on reducing spray drift, runoff, and erosion transport because FIFRA risk assessments commonly identify risk concerns for plants in terrestrial, wetland, and/or aquatic habitats due to offsite transport in these exposure pathways. If other exposure routes are relevant to a chemical or species

Definition Box 1.

For the Strategy, EPA uses the following definitions of three key types of habitats:

A **terrestrial** habitat is dry or upland areas that do not have standing water. Examples include grasslands, shrublands and forests. Areas where crops occur are not included.

A **wetland** is a shallow waterbody that may include permanently or intermittently flooded areas. Examples include wet meadows, marshes, swamps, and riparian areas. For the proposed Strategy, EPA is not referring to a wetland as defined under the Clean Water Act.

An **aquatic** habitat is an area with permeant standing or flowing water. Examples include lakes, reservoirs, rivers, streams, ponds, and estuaries.

See **Appendix A** for more detailed descriptions of waterbodies.

² Take as defined under the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA § 3(19), 16 U.S.C. § 1532(19)). Incidental take is an unintentional take "that result[s] from, but [is] not the purpose of, carrying out an otherwise lawful activity, but not unexpected, taking." See 50 C.F.R. § 402.02.

³ This is the same draft document EPA released with the draft Vulnerable Species Pilot as it supports both efforts.

that are not covered in this Strategy (*e.g.*, on field risks to mammals or bioaccumulation exposure pathways), they will be addressed in future assessments.

Another primary goal of the Strategy is to help increase the efficiency of future pesticide consultations with FWS. The Strategy is focused on listed species under the jurisdiction of FWS as they have authority over the majority of listed species that could benefit from the Strategy. EPA's typical process for assessing and mitigating effects to listed species takes many years. This process typically starts with a chemical-specific biological evaluation (BE) that assesses effects to all listed species. If EPA finds that effects to a listed species or CH is reasonably likely to occur to one or more individuals of a listed species, EPA initiates consultation (informal or formal) with the responsible Service. At the end of informal consultation, the Service will either provide concurrence with our finding that the effects are not likely to adversely affect a listed species or CH and the process ends, or recommend EPA initiate formal consultation. During formal consultation, EPA, the Service(s), and the pesticide applicant/registrants discuss possible options to mitigate any likely J/AM. At the end of formal consultation, the Service(s) will generate biological opinions (BiOp) when they review EPA's assessment for each species where the EPA finds that the proposed action is likely to adversely affect an individual or CH. The Service(s) determine whether J/AM is likely for any species or designated CHs potentially exposed from the EPA's registration. From start to finish, this process usually takes four to 12 years. The proposed Strategy involves a substantial and necessary change in process to identify and mitigate potential impacts from agricultural uses of conventional herbicides even before EPA makes effects determinations or initiates/completes consultation. To date, EPA has completed its ESA obligations for no more than a handful of conventional herbicides. This is exacerbated by the fact that, in the United States between 2008 and 2012, an average of 1.1 billion pounds of pesticides were applied annually, with about 50% of those being herbicides and 90% of herbicide applications occurred in the agricultural sector (USEPA, 2017). This change is needed so EPA and the Services can use their limited resources to better meet ESA obligations for conventional herbicides and provide protections in a timely manner.

To this end, EPA and FWS have been collaborating during the development of the Strategy. EPA and FWS are considering whether a pesticide programmatic consultation, or other efficiency measure similar to the Strategy framework can be used in the development of a programmatic consultation process. EPA expects that once the programmatic consultation process is developed, individual chemical consultations and evaluations would be much faster. In the meantime, EPA is proposing to start implementing the Strategy once it is finalized so that the finalized mitigations can be applied earlier in the ESA-FIFRA process. EPA is describing these proposals for implementing the Strategy to provide some regulatory certainty for how the Agency expects to adopt mitigation measures under the Strategy, to reduce the legal vulnerability for the pesticide actions that include them, and thus to better ensure the continued availability of these pesticides for those who need them.

2.2 Guiding Principles

There are several major guiding principles that EPA considered when developing the Strategy, including:

- Focusing on minimizing impacts to non-target listed plants and listed animals that depend on plants.
- Focusing on major routes of exposure for the majority of herbicides (*i.e.*, spray drift and runoff/erosion).
- Developing and proposing mitigation measures that could be readily implemented by growers and identified by pesticide applicators, and to provide flexibility to growers to choose mitigations that work best for their situation.
- Proposing consistent mitigation measures across conventional agricultural herbicides.
- Providing options for adding other mitigation measures in the future, particularly to incorporate emerging technology or new information on the effectiveness of additional common measures used by growers.

In developing the Strategy, EPA also considered what it has learned from conducting ESA analyses for multiple pesticides and is proposing a more efficient approach to provide earlier mitigation to protect listed species. This approach is based on analyses EPA currently uses to estimate exposure and assess impacts of a pesticide, and it uses a taxa level assessment, where species with similar characteristics and habitat are evaluated as a group. Through the Strategy, EPA determined the listed species associated with each species group and defined where those species would be located in the lower 48 states. EPA is proposing to identify mitigation to reduce exposure for each species group.

The Strategy proposes a mitigation menu to be used to reduce exposure to listed species from spray drift, runoff, and erosion from the use of conventional agricultural herbicides. The proposed spray drift and runoff/erosion mitigations included in the menu are agricultural measures known by growers and applicators. EPA anticipates receiving efficacy data on additional measures and emerging technologies as the data become available and, as discussed later in this document, is proposing to implement the Strategy such that it can efficiently add other mitigation measures to the menu in the future.

Concurrent with the Strategy, EPA has been working on other initiatives to reduce exposure to non-target wildlife, such as the recently proposed [Vulnerable Species Pilot](#) (USEPA, 2023d) and updates to the [FIFRA IEM](#) that were proposed in November 2022 and received extensive public comment (USEPA, 2022b). Because of the differing timelines for these initiatives, there are inconsistencies in the mitigation and label language proposed among them. However, EPA is continually working to improve and harmonize the ecological mitigation and label language across these efforts to the extent appropriate. EPA anticipates that the mitigation and label language for runoff/erosion and spray drift proposed across the Strategy, Vulnerable Species Pilot, and FIFRA IEM would have the same

options and consistent descriptions; however, the level and extent of mitigation would change as appropriate for their purposes. This document has some example language to illustrate the mitigation options that build on EPA's proposals in the FIFRA IEM and the vulnerable species pilot (USEPA, 2023d).

2.3 EPA's Approach to Identify Where Mitigation Would Apply

Where EPA identifies geographically specific listed species protections (as opposed to protections that apply more broadly, which would be on the pesticide label), it delineates pesticide use limitation areas (PULAs). PULAs are the geographic areas where a pesticide limitation specific to listed species applies. These geographic-specific restrictions are located in Endangered Species Protection Bulletins that are accessed through EPA's Bulletins Live! Two (BLT) website. Put simply, the information on BLT is designed to tell the grower/applicator if additional restrictions or mitigations must be followed to protect listed species for a particular location.

PULAs can represent the spatial extent of a single listed species range or CH, or can represent the combined ranges and CHs of multiple listed species. EPA develops PULAs with multiple species ranges/CHs when the locations all share the same pesticide use limitations (*i.e.*, mitigations). To efficiently and effectively implement geographically specific mitigations for the Strategy, EPA is not proposing to develop single species PULAs and bulletins, but rather to produce four bulletins, each of which represents multiple species that have common taxonomy and habitats and thus need the same mitigations.

For the proposed Strategy, EPA used species-specific location information (species range and CH, if applicable) provided by FWS to establish proposed PULAs. Species range maps show where listed species live, are suspected to live, and areas that impact the species' survival or recovery in some way. EPA's default is to use the species' ranges and/or CHs to identify protection areas. For the Strategy, EPA used species range and CH information available in the FWS Environmental Conservation Online System (ECOS)⁴. FWS has embarked on an effort to refine its species range maps and now has refined range maps for about half of the listed species under its jurisdiction. Additionally, for the consultation with FWS on malathion (USFWS 2022), species experts at FWS provided alternative, even more refined areas where protections are needed for select species. Recognizing the efforts FWS has been undertaking to refine species ranges and areas where protections are most needed for certain species, EPA's current thinking is that it would update any PULAs developed for the final Strategy on a periodic and known basis (*e.g.*, once per year in a given month), ensuring its geographic restrictions reflect the best available information not only today but into the future.

⁴ Here, EPA used spatial data representing the listed species range and designated CH locations provided by the FWS as of February 16, 2022 (USFWS, 2022), as this was the most up to date information at the time EPA began developing the Strategy.

2.4 Case Studies to Illustrate the Strategy

EPA conducted case studies of representative herbicides to identify the level and extent of mitigation that would apply to protect the listed species covered by this effort. EPA used representative herbicide examples to illustrate the process and ascertain the appropriateness of the criteria (*i.e.*, combinations of magnitude of difference and pesticide physical-chemical properties) for selecting the level of mitigation measures for each representative chemical. Within the case studies, EPA also identified potential groups of listed species and CHs of listed plants and animals in the 48 conterminous United States where there may be population-level impacts. The purpose of this analysis was to support future streamlined consultation with FWS. The case studies are not intended to be part of the implementation of the Strategy for chemical specific assessments, but rather to illustrate how this Strategy appropriately identifies the mitigation measures that would apply to protect listed plants and impacts to animals due to effects to plants. Details on the method, models, and tools used in these case studies are in *Herbicide Strategy Case Study Summary and Process* (referred to as **Case Study Summary and Process**).

2.5 Organization of This Document

This document is intended to explain the proposed Strategy to a wide range of stakeholders including registrants/applicants, FWS, herbicide applicators, pesticide regulators, conservation specialists, risk assessors, risk managers, nonprofit organizations, and the public. EPA is currently requesting public comments on this proposed Strategy. EPA plans to issue a final Strategy after receiving and incorporating this feedback.

EPA explains the scope of the Strategy (**Section 3**) and decision framework EPA is proposing to determine the level of mitigation that would apply for a particular conventional agricultural herbicide (**Section 4**). The decision framework has three steps:

- 1) identify potential population-level impacts (**Section 5**);
- 2) identify mitigation measures (**Section 6**); and
- 3) identify geographic extent of mitigation measures (**Section 7**).

EPA describes the types of habitats where mitigation measures would apply for listed species in **Section 6.3**. EPA's case studies are described in **Section 8** and includes examples of how the Strategy mitigation would apply for a subset of the representative herbicides for which EPA conducted case studies. EPA's proposed implementation plan is discussed in **Section 9**. The Strategy effort has a number of materials supporting this work. Each of these are described in **Table 2-1** and are available in the docket for comment.

Table 2-1. Summary of the Herbicide Strategy Supporting Materials

Document Title	Short Title	Summary of Document
Draft Herbicide Strategy Framework to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides (this document)	Strategy Framework Document (this document)	The framework describes the analyses conducted to estimate exposure and assess the potential impacts of a pesticide to species groups with similar characteristics, and the extent of mitigations that would apply for a particular herbicide to protect listed species groups. The Strategy proposes a mitigation menu to reduce exposure to listed species from spray drift, runoff, and erosion that would apply to conventional agricultural herbicides. Finally, the Strategy provides information on identifying the geographic extent of mitigation measures and describes the implementation plan.
Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation Measures to Protect Non-Target Plants and Wildlife	Technical Support for Mitigation	This document provides information for the mitigation measures that EPA identified to date to reduce offsite transport of pesticides in spray drift, aqueous runoff (referred to as runoff), and erosion and to communicate to the public and stakeholders the efficacy of mitigation measures to protect non-target plants and wildlife.
Herbicide Strategy Case Study Summary and Process	Case Study Summary and Process	The case studies helped EPA identify the level and extent of mitigation measures for the Strategy. EPA used representative herbicide examples to illustrate the process and ascertain the appropriateness of the criteria (<i>i.e.</i> , combinations of magnitude of difference and pesticide physical-chemical properties) for selecting the level of mitigation that would apply for each representative chemical. These case studies also identified the potential level of mitigation to protect listed species and CHs based on effects to plants only from future impacts from conventional agricultural herbicides.
Case Study Magnitude of Difference Calculations	Case Study MoD Calculations	This document provides supporting information on the calculation of the Magnitude of Difference (MoD) for each example herbicide.
Crosswalk Of Species Habitat Assumptions, Aquatic Bins, and Hydrologic Unit Code (HUC) 2 regions	Crosswalk of Species and Aquatic Bins	This Excel spreadsheet includes information on all currently listed species and CHs under the authority of FWS that are in the conterminous US. This spreadsheet includes information on the habitats and taxa assumptions for each species and CH.
List of Species in Each Grouped Species Pesticide Use Limitation Area (PULA)	List of Species in PULAs	This Excel workbook includes information on which species and CHs are included in each of the four proposed PULAs for the Strategy.
Herbicide Strategy Species Overlap and Characteristics	Species CH Overlap and Characteristics	Supporting materials for selecting species with potential population-level impacts for case studies.
Application of EPA's Draft Herbicide Strategy Framework Through Scenarios that Represent Crop Production Systems	Strategy Applied to Crop Production Scenarios	This document describes examples of how runoff and erosion mitigation measures proposed in the Strategy might be employed in various crop production systems.

3 Scope of the Herbicide Strategy

The scope of the Strategy is to develop an efficient approach to implement mitigation measures⁵ for agricultural uses of all conventional herbicides in the lower 48 states to minimize exposure from spray drift and runoff/erosion to the main group of species affected by herbicides—plants—and animals that depend on plants. The Strategy focuses on listed plants and animals under the jurisdiction of FWS.

The Strategy would make major strides in protecting listed species from agricultural uses of conventional herbicides. As explained earlier, the pounds of herbicides applied each year for agricultural uses is substantially more than for non-agricultural uses and other pesticide classes (*e.g.*, insecticides, fungicides). In effect, the mitigations proposed by the Strategy would likely be effective at reducing the potential for population-level impacts to the over 900 listed species in the lower 48 states from the use of herbicides. In addition, the Strategy would enable EPA and the Services to use their limited resources to better meet ESA obligations for the many registered conventional herbicides for which EPA has not yet met its ESA obligations. EPA would still need to conduct more thorough ESA analyses during consultations for listed species not covered by the Strategy (*e.g.*, listed species located on the field or candidate species). EPA expects that the Strategy would provide a more efficient process for making any future effects determinations, predictions of the likelihood of J/AM in BEs, and consultations with FWS for herbicides for the 900+ listed species covered by the Strategy.

EPA's Workplan Update covers (USEPA, 2022b) other strategies to help fulfill the Agency's ESA responsibilities, including those focused on other use patterns (*i.e.*, non-agricultural use patterns), geographies (*i.e.*, Hawaii and the territories), or species (vulnerable listed species). A key strategy is the FIFRA IEM that applies to outdoor use of conventional pesticides. IEMs do overlap with the proposed mitigation measures in the Strategy. As described in **Section 9**, EPA expects that the level of mitigation to reduce exposure from spray drift and/or runoff/erosion in the final Strategy would supersede the IEM for all uses covered by the Strategy, because the mitigations for the Strategy would be at least as stringent as those for the IEMs. The IEM would still apply to agricultural uses of other pesticides not covered by this Strategy.

4 Overview of Decision Framework for Identifying Mitigation Measures

EPA developed a proposed decision framework to identify the level and extent of mitigation that would apply to conventional agricultural herbicides. EPA developed this framework to efficiently and consistently apply mitigation measures to minimize pesticide exposure, and thereby reduce the potential for population-level impacts from the ongoing use of

⁵ Mitigation measures are changes to the action that will reduce the likelihood of exposure and risk to listed species.

registered conventional agricultural herbicides. This process would be applied to Agency actions after the Strategy is finalized, consistent with the implementation plan described in **Section 9**. The Strategy case studies used a similar process to that described here; however, there were some differences to support the development of the Strategy, and identification of species in species groups. See the **Case Study Summary and Process** for details. This section provides a high-level overview of the framework with the detailed information in the remaining sections of this document.

The general decision framework for a particular herbicide involves the following steps (**Figure 4-1**):

1. **Identify population-level impacts:** Conduct a streamlined analysis to determine which groups of plant species are expected to have the potential for population-level impacts from direct exposure to herbicides, and which groups of animals could be affected because they rely on listed plants for their diet or habitat. If at least one group of listed species is potentially impacted, proceed to step 2 to identify mitigations that would apply. This streamlined analytic process is described in **Section 5** below.
2. **Identify type and level of mitigation:** Determine the level of mitigation measures that would apply to reduce exposure via drift and/or runoff/erosion (as described in **Section 6**). Mitigation measures are identified specific to an herbicide active ingredient, formulations⁶, use site, application parameters, and maximum use rates.
3. **Identify geographic extent of mitigation:** Determine the spatial extent of the mitigation measures that would apply. In some situations, mitigation would apply to target the areas where groups of listed species occur. In those situations, EPA expects to use its web-based system, BLT, to post geographically specific mitigation for listed species. See **Section 7**.

⁶ Spray drift exposure is evaluated for applications of liquids via aircraft, airblast, or ground boom equipment. Spray drift mitigation measures are not applicable to granule formulations.

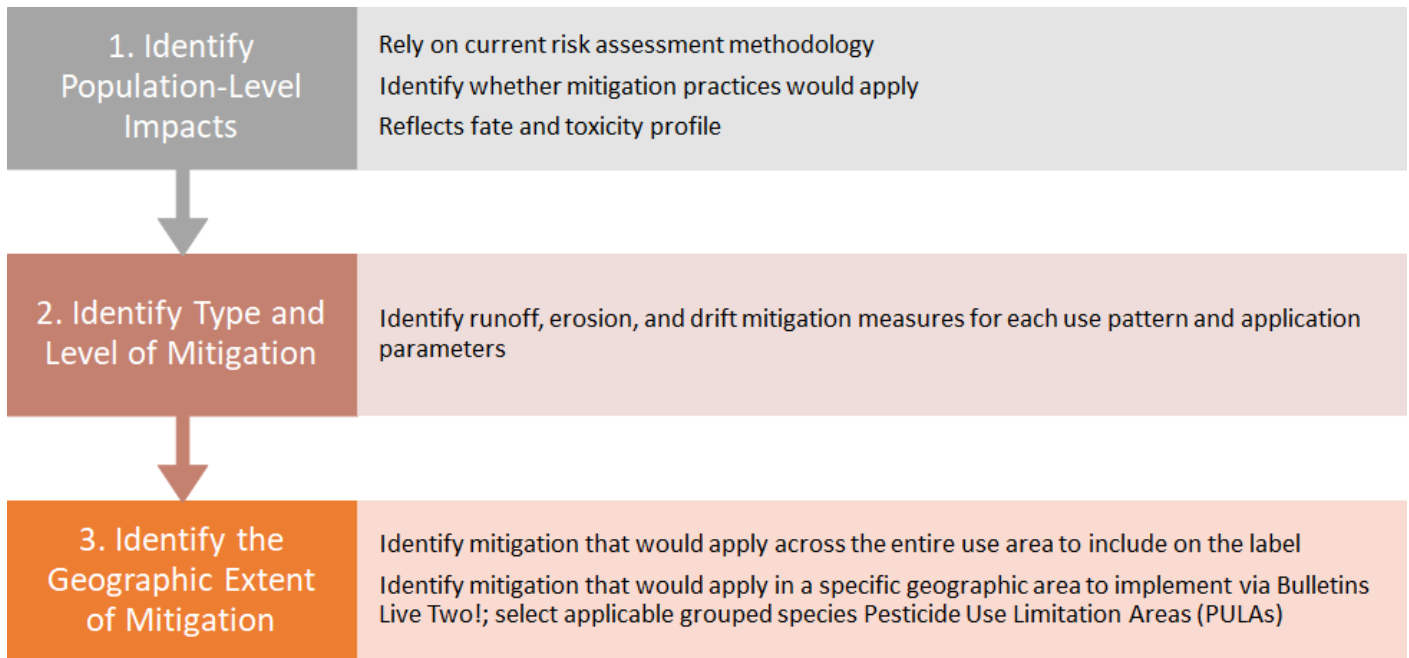


Figure 4-1. Overview of the Draft Herbicide Strategy Process

4.1 Overview of Step 1. Identify Population-level Impacts (Strategy Analysis)

While potentially applicable to a broad range of conventional agricultural herbicide FIFRA actions, the population-level this streamlined analysis builds on the standard ecological risk assessment process for plants that EPA uses to support a new active ingredient registration action and registration review. The analysis is similar to the FIFRA ecological risk assessment where EPA calculates ratios of exposure to toxicity estimates for species grouped by characteristics (dicot, monocot, vascular, non-vascular; obligate versus generalist) and

habitat (terrestrial, semi-aquatic, aquatic) to predict the potential for population-level impacts and identify the level of mitigation that would apply to reduce the potential for population-level impacts. However, there are differences in the proposed approach from the standard FIFRA ecological risk assessment described in **Section 5**. A key concept in this analysis is the exposure to toxicity ratio, which this document refers to as the Magnitude of Difference (MoD). The MoD is analogous to the risk quotients (RQs) that EPA calculates and compares to regulatory Levels of Concern in FIFRA assessments. RQs and MoDs are similar in that they both involve a ratio of exposure to toxicity; however, they differ by the toxicity endpoint. In this case, EPA is using the term “MoD” instead of “RQ” because EPA is using toxicity information to represent plant population or community level impacts, whereas the RQ typically relies upon toxicity information more representative of potential effects to an individual. EPA is not using the standard Level of Concern, which also looks at impacts to the individual of a species (USEPA, 2004). Rather, EPA is comparing estimated environmental concentrations (EECs) which represent the estimated level of a pesticide in the environment, to toxicity endpoints that are appropriate to identify potential species-level impacts or impacts to a population or habitat. Because the level in the environment would affect one or more populations of a species (rather than only one individual of a species), EPA believes that EECs are the correct measurement to use for population-level assessments. As the Strategy is focused on reducing the likelihood of potential population-level impacts, EPA calculates MoDs using toxicity endpoints that are protective of a population of a single species or a community of species. EPA relied on MoDs to determine the potential for population-level impacts and to identify mitigations to reduce the potential for impacts to individuals, populations of individuals, or communities made up by multiple species. Typically, as you move from protecting individuals to protecting populations and communities, the relevant toxicity endpoints increase in concentration (*i.e.*, are less sensitive), and RQs or MoDs decrease;

Definition Box 2.

Obligate: Listed species that cannot survive and/or complete their life-cycle without another species are called obligates. For example, wild blue lupine (*Lupinus perennis*) is the only plant Karner blue butterfly (*Lycaeides melissa samuelis*) larvae, or caterpillars, can eat. Thus, Karner blue butterflies have an obligate relationship to blue lupine.

Generalist: Species with a generalist relationship to plants (for the purposes of the HS) or animals. These species do not have an obligate relationship to another species. For examples, species that rely on a range of different plants in their diet or habitat.

Magnitude of Difference (MoD): The MoD is the ratio of the estimated environmental concentration (EEC) to the relevant toxicity threshold. The MoD informs the potential for population-level impacts.

Population-Level Impacts: These impacts refer to potential for impacts to a population of an individual species.

Community-level Impacts: These impacts refer to the potential for impacts to multiple different species within an ecosystem.

however, sometimes the toxicity endpoints and exposure to toxicity ratios are similar due to limited data. Additional information on this approach is included in **Section 5**.

For the Strategy, EPA proposes to use the MoD for each species group along with other lines of evidence (e.g., presence of an unexpected number of incidents, number of exposure scenarios that support a conclusion) to determine the potential for population-level impacts as described in **Table 4-1**. While EPA considers lines of evidence in all analyses for the evaluation of the potential for population-level impacts, the lines of evidence would most frequently influence the result when the MoD is between 1 and 10. This is because when the MoD is less than one, evidence, such as a large set of reported incidents, that would support greater concern and change that determination, is uncommon in EPA’s experience. When the MoD is greater than 10, EPA would make a determination that there is a potential for population-level impacts if additional information is not available to support this conclusion. When the MoD is less than one and lines of evidence do not refute a conclusion that impacts are generally not likely, then EPA would not identify additional mitigation. When the MoD is between 1 and 10, the lines of evidence are evaluated to determine whether or not the MoD indicates population-level impacts are likely. When the MoD is greater than 10 and lines of evidence confirm or do not refute this finding, additional mitigation would generally apply. See **Section 5.3** for additional discussion.

Table 4-1. Relationship Between the Magnitude of Difference and Potential for Population-Level Impacts

Magnitude of Difference (MoD) ¹	Potential for Population-Level Impact ²
<1	Not likely
1 – <10	Not likely or likely depending on lines of evidence described in Section 5.3
10 or higher	Likely

¹ The MoD is the ratio of the exposure estimate to the relevant toxicity endpoint for population-level impacts as described in **Section 5.1**.

² Lines of evidence are considered in all analyses for the evaluation of the potential for population-level impacts; however, it is most common that the lines of evidence would influence the result when the MoD is between 1 and 10. There are rare cases where the lines of evidence would influence the potential for population-level impacts when the MoD <1 or the MoD is greater than 10.

4.2 Overview of Step 2. Identify Type and Level of Mitigation Measures

4.2.1 Identify Spray Drift Mitigation Measures

EPA is proposing a decision framework to identify mitigation measures that would apply for mitigating spray drift (**Figure 4-3**). When identifying the level of spray drift mitigation measures, EPA would consider the maximum single application rate, application equipment, droplet size distribution (DSD), release height, and any wind speed restriction for the evaluated use. For the Strategy, EPA is proposing a spray drift buffer between an application and an adjacent area (see **Section 6.3** for a description of listed species habitat) where listed

species could be exposed when the MoD (as described in **Section 5**) is greater than one at the edge-of-the field. The buffer reduces the potential for deposition of drift where listed species could be exposed and other mitigation measures can further reduce the potential for deposition of drift (*e.g.*, windbreaks). EPA uses AgDRIFT® to identify the buffer distance for aerial, ground boom, and airblast application equipment. EPA is proposing buffers up to a maximum distance that represents the reasonable and prudent upper bound distance beyond which the reduction in exposure is small over a large distance (<1% change in the fraction of applied over 100 feet). See **Figure 4-2** below for an illustration of the field and mitigation measures described above.

For efficiency, as described for the example case study herbicides and three generic examples below **Figure 4-2**, EPA is first comparing the calculated drift distances for a particular herbicide to the maximum drift distance as a screen. If drift distances for a particular herbicide are all greater than the maximum distance, then the drift buffer for that herbicide would default to the maximum distance, possibly with some additional measures (*e.g.*, windbreak).

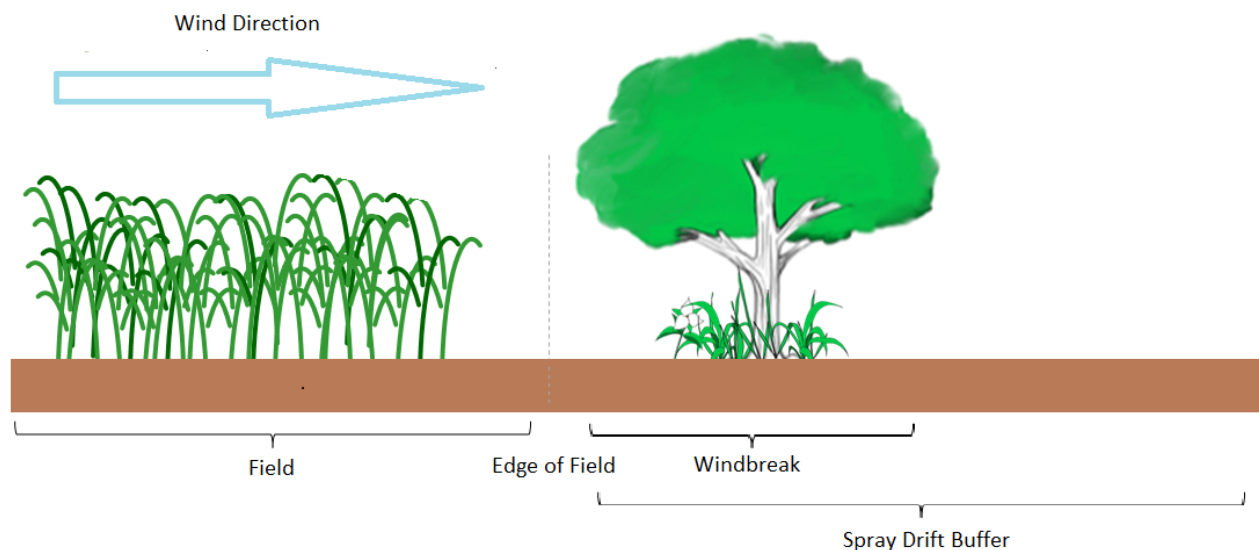


Figure 4-2. Spray Drift Exposure and Mitigation Measure Conceptual Model

EPA is proposing to compare the spray drift deposition at the edge-of-the-field and at the maximum buffer distance to the relevant toxicity endpoint used to calculate the MoD to identify the level of the spray drift mitigation that would apply as described in **Figure 4-2**. The examples in **Table 4-2** match the examples of the potential combination of spray drift mitigation measures that may apply as described in **Figure 4-3**.

Example 1: EPA would identify one of two options to minimize the potential for impacts to populations when the spray drift deposition exceeds the relevant toxicity endpoint by more than 10x at the maximum buffer distance. The two options involve 1) a maximum buffer

and windbreak or hooded sprayer, or 2) a maximum buffer and windbreak or hooded sprayer plus rate reductions and/or prohibition of application equipment. EPA would identify option 2 when option 1 is unlikely to minimize impacts.

Example 2: EPA would identify the maximum buffer or a lower recommended distance and options to reduce the buffer, when the spray drift deposition exceeds the relevant toxicity endpoint at the maximum spray drift buffer, but the deposition is not greater than 10x that endpoint. If lines of evidence indicate population level impacts (as described in **Section 5.3**) may occur at an MoD of 1, the maximum buffer distance would apply. If the lines of evidence indicate that population level impacts may occur at an MoD of 10, a buffer distance that results in exposure that is 10x the toxicity endpoint would apply.

Example 3: EPA would identify the spray drift buffer that would result in deposition similar to the relevant toxicity endpoint, and options to reduce the buffer would apply when the spray drift deposition divided by the relevant toxicity endpoint is greater than one at the edge-of-the field but less than one at the maximum buffer distance.

Table 4-2. Examples of the Options Resulting from the Decision Framework for Determining Spray Drift Mitigation Measures that Would Apply to Reduce Impacts to Listed Plants and Animals that Depend on Plants

Example and Mitigations that Would Apply	Spray Drift Deposition Divided by the Relevant Toxicity Endpoint (Similar to the MoD but Only Considering Drift)	
	At the Edge-of-the Field	At the Maximum Buffer Distance
1. Maximum buffer distance and additional mitigation would apply	>10	>10
2. The maximum buffer distance (or a lower recommended buffer based on lines of evidence) could be utilized and options to reduce the buffer distance are available	>1	Between 1 and 10*
3. Identify buffer distance to achieve the targeted deposition using AgDRIFT® and droplet size mitigation are identified and options to reduce the buffer are available.	>1	<1

MoD=magnitude of difference

* If lines of evidence indicate population level impacts (as described in **Section 5.3**) may occur at an MoD of 1, the maximum buffer distance would apply. If the lines of evidence indicate that population level impacts may occur at an MoD of 10, a buffer distance to result in exposure that is 10x the relevant toxicity endpoint would apply.

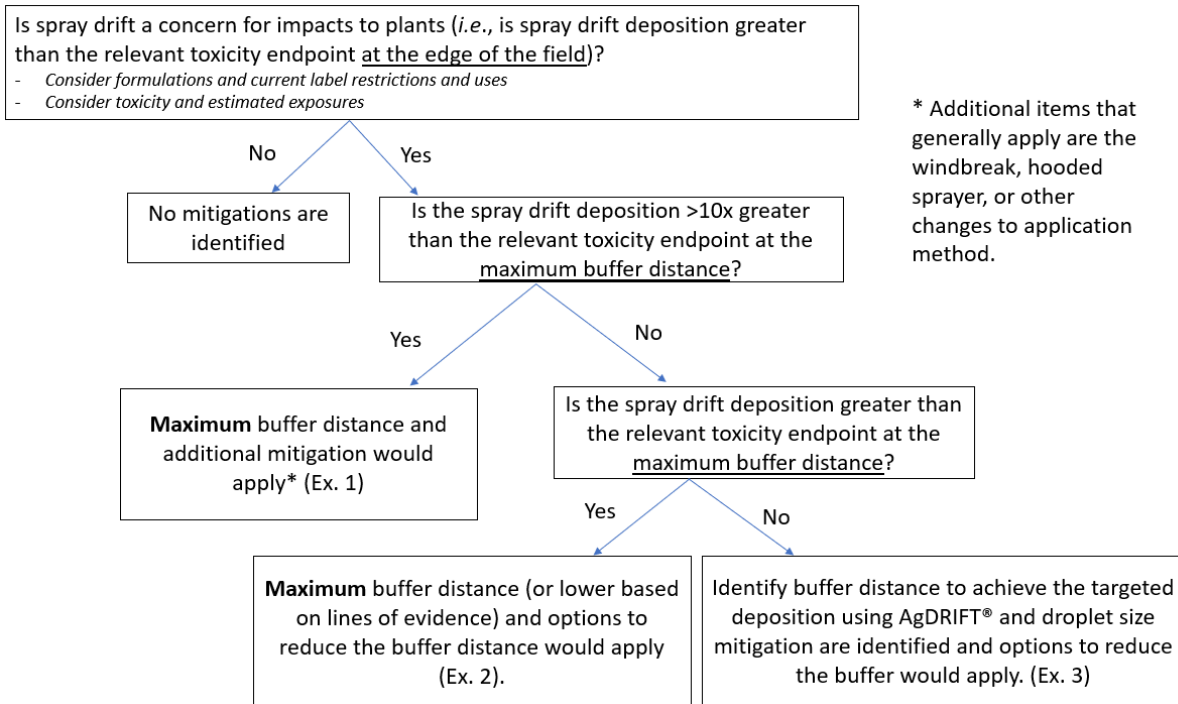


Figure 4-3. Decision Framework for Determining Spray Drift Mitigation Measures that would Apply to Reduce Impacts to Listed Plants and Listed Animals that Depend on Plants

4.2.2 Identify Runoff/Erosion Mitigation Measures

EPA similarly developed a decision framework for run-off/erosion (**Figure 4-4**). EPA developed a runoff/erosion mitigation menu of measures to reduce pesticide offsite transport due to runoff and erosion. EPA categorized the effectiveness of each measure at reducing offsite transport as high, medium, or low (referred to throughout this document as efficacy category). For the Strategy, EPA is currently assigning points to each of the measures on the runoff/erosion mitigation menu based on the efficacy category of the mitigation measure. High mitigation efficacy measures are worth 3 points, medium efficacy measures are worth 2 points, and low efficacy measures are worth 1 point. EPA is proposing that the number of points identified to reduce offsite transport would be determined based on the MoD (as calculated according to **Table 5-1**). Assigning points to measures based on their effectiveness encourages use of mitigation measures with higher efficacy while providing flexibility in terms of options to growers. It also allows for landowners to receive credit for implementing measures that reduce offsite transport of pesticides and could improve habitat for listed species. Additionally, the proposed approach would allow some growers to get credit for measures they already employ that are known to be efficacious for reducing runoff/erosion. With the point system approach, applicators would be able to choose mitigation measures from the runoff/erosion mitigation menu to arrive at a certain number of points identified to adequately reduce offsite transport of pesticides as determined through the MoD analysis. Overall, these mitigation options are expected to

reduce exposure potential for listed species and their habitats by targeting risk reduction measures that effectively reduce runoff/erosion to address population-level impacts and create more efficient analyses in future effects determinations and ESA consultations.

EPA summarizes the decision framework proposed to identify the level of runoff/erosion mitigation measures that would reduce runoff/erosion in **Figure 4-4**. EPA is proposing that runoff/erosion mitigation measures are needed when the MoD is greater than one. The number of points, as discussed in **Section 6.2**, to reduce offsite transport are based on 1) the MoD (as described in **Table 5-1** and **Table 4-3**), 2) the sorption coefficient⁷ of the active ingredient and any residues of concern⁸, and 3) the aerobic soil metabolism half-life of the active ingredient and any residues of concern. Runoff/erosion mitigation is more effective for chemicals with an organic carbon normalized solid-water distribution coefficient (K_{oc}) greater than 1000 L/kg-organic-carbon or solid-water distribution coefficient (K_d) greater than or equal to 50 L/kg-soil. Pesticides that have an aerobic soil metabolism half-life less than 10 days tend to have lower exposure and reduced offsite transport when the application does not occur within 48-hours of one inch of rain. Therefore, when all aerobic soil metabolism half-life values for the relevant residues are less than 10 days, one less runoff/erosion mitigation point is identified, assuming the label includes a 48-hour rain restriction (as expected to be included on the majority of pesticide labels). However, this would not be applicable if the 48-hour rain restriction was not included on the label. When the MoD is greater than 1000 or if the mitigation points identified are not achievable with points alone, additional mitigations may be identified (e.g., rate reductions, use cancellations). The **Technical Support for Mitigation** provides information on the efficacy of different mitigation measures and **Section 6.2** describes how the points were assigned to different MoDs.

Table 4-3. Potential Number of Points Identified to Reduce Exposure via Runoff and Erosion

Magnitude of Difference (MoD) ¹	Points Identified ²	
	Runoff Prone ($K_{oc} < 1000$ L/kg-oc or $K_d < 50$ L/kg-soil) ⁴	Erosion prone ($K_{oc} \geq 1000$ L/kg-oc or $K_d \geq 50$ L/kg-oc) ⁴
<1	No mitigation	No mitigation
1 – <10	1 if lines of evidence indicate population level impacts ³ may occur at an MoD of 10 3 if lines of evidence indicate population level impacts ³ may occur at an MoD of 1	
10 – <100	6	5
100 – <1000	9	7
1,000 or higher	9 plus other mitigations	

⁷ The organic-carbon normalized solid-water distribution coefficient (K_{oc}) is a measure the propensity of an herbicide to be dissolved in water or sorbed to soil or sediment. For some pesticides, sorption is described using the solid-water distribution coefficient (K_d) without organic-carbon normalization. These are measured in OCSPP Guideline 835.1230 (USEPA, 2008).

⁸ The residues of concern may include the parent and some transformation products (either degradates or metabolites) that are determined to be of toxicological concern based on lines of evidence (USEPA, 2018).

¹The MoD is the ratio of the exposure estimate to the relevant toxicity endpoint for population-level impacts as described in **Section 5.1**.

² If the 48-hour rain restriction is on the label and the aerobic soil metabolism half-life for parent and residues of concern is less than 10-days, the number of mitigation points could be reduced by one point. The 48-hour rain restriction states, “Do not apply when soil in the area to be treated is saturated or if NOAA/National Weather Service (available at weather.gov) predicts a 50% chance or greater of 1 or more inches of rainfall to occur within 48 hours following application.”

³ **Section 5.3** describes the lines of evidence considered to determine whether population-level impacts may occur.

⁴ The solid-water distribution coefficient (K_d) and organic-carbon normalized solid-water distribution coefficient (K_{oc}) are measures of the propensity of an herbicide to be dissolved in water or sorbed to soil or sediment. These are measured in OCSPP Guideline 835.1230 (USEPA, 2008).

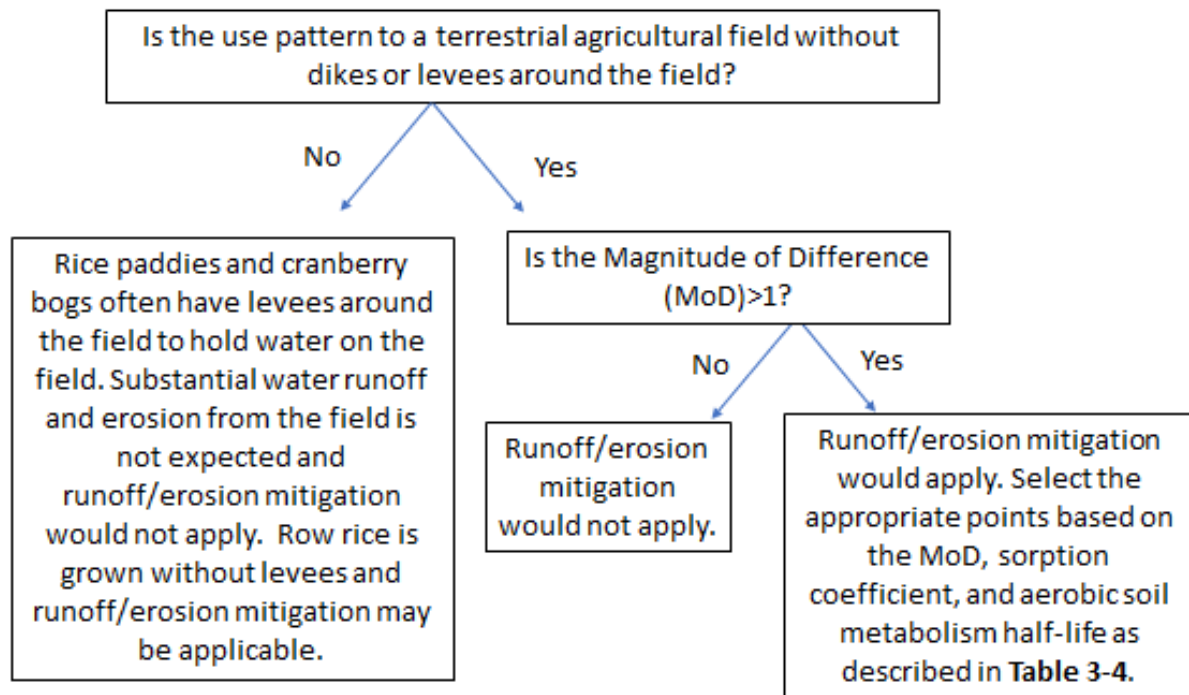


Figure 4-4. Decision Framework for Determining Appropriate Runoff/Erosion Mitigation Measures to Reduce Impacts to Listed Plants and Listed Animals that Depend on Plants

4.3 Overview of Step 3. Identify Geographic Extent of Mitigation

EPA summarizes the decision framework for determining the geographic extent of mitigation in **Figure 4-5**. As described more fully in the ESA Workplan Update, generally, EPA's preference is to have applicants/registrants include ESA mitigations on the general pesticide product label, if practical. This is most appropriate where ESA mitigations broadly apply (cover many species instead of a specific species). Where EPA identifies mitigations specific to certain geographic areas, it generally uses Geographic Information System (GIS) mapping information in combination with species location information to delineate PULAs. PULAs are the geographic areas where a pesticide limitation specific to listed species applies. PULAs allow users to determine if their intended pesticide application falls within a location where additional use restrictions or mitigations are necessary to protect listed species or their CH. These geographic-specific restrictions are located in Endangered Species Protection Bulletins that are accessed through BLT website. Put simply, the information on BLT is designed to tell the grower/applicator if additional restrictions or mitigations must be followed to protect listed species for a particular location. To date, EPA has used this system for such restrictions for specific pesticide products and individual species. In order to efficiently implement this proposed Strategy across all conventional herbicides and the relevant 900+ listed species if EPA identifies geographically specific mitigations, EPA expects to develop PULAs representing groups of species for which similar restrictions would apply (see **Section 7** for details). Where mitigations would apply across the full spatial extent of a use pattern (*e.g.*, corn, soybean, asparagus, *etc.*), EPA may determine that the restrictions should appear on the general pesticide product label rather than on BLT. As described in **Section 7**, to further inform its consideration of whether the limitations would apply over the full use area or a portion of the use area, EPA compared species areas to use site locations using ArcGIS, species range and CH files, and Use Data Layers or National Agricultural Statistics Service (NASS) Census of Agriculture data.⁹

Definition Box 3.

Bulletins Live! Two (BLT): BLT is the web-based application to access Endangered Species Protection Bulletins (Bulletins). These Bulletins contain enforceable pesticide use limitations that are necessary to ensure a pesticide's use will not harm a species listed as threatened or endangered (listed) under the Endangered Species Act or their designated critical habitat.

Pesticide use limitation areas (PULAs): PULAs are the geographic area where a pesticide limitation specific to listed species applies. PULAs allow users to determine if their intended pesticide application falls within a location where additional use restrictions or mitigations are necessary to protect listed species or their designated critical habitat.

Endangered Species Protection Bulletins: The Bulletin's Live! Two application, provides the limitation information for the application site and month in a Bulletin.

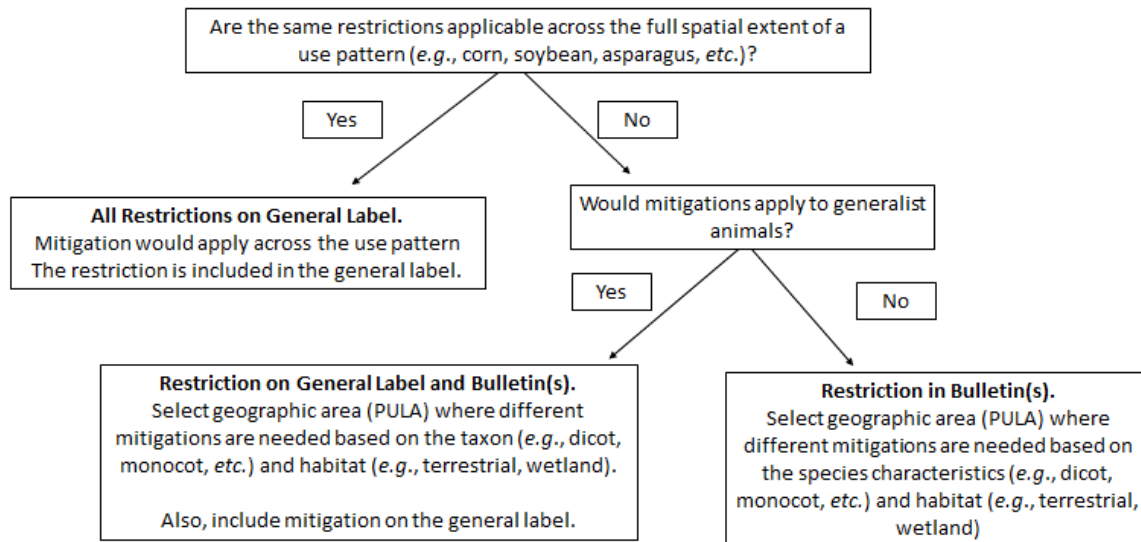


Figure 4-5. Decision Framework for Identifying the Extent of Mitigation

⁹ USDA NASS data are available at: <https://www.nass.usda.gov/AgCensus/>.

5 Detailed Explanation of Step 1: Identify Potential Population-level impacts

5.1 Calculating Magnitude of Difference (MoD)

EPA is proposing to calculate MoDs for different habitats (terrestrial, wetland, or aquatic), species characteristics (*e.g.*, dicot vs. monocot plant; obligate vs. generalist animal), and herbicide use patterns. EPA is proposing to link these calculated MoDs to groups of species that would be represented by the corresponding MoD. EPA would then use the MoDs to identify mitigation measures for that group of species. See **Section 6** for details on identifying the mitigation measures and **Section 7** for the species in each species group.

EPA is proposing to calculate 10 MoDs for each herbicide use (**Table 5-1**). EPA's ecological risk assessments for plants estimate a MoD for species that may occur in dryland areas (represented by the Terrestrial Plant Exposure Zone, TPEZ), in semi-aquatic areas (represented by the Wetland Plant Exposure Zone, WPEZ), and in aquatic areas. The FWS identifies which aquatic bins each listed species is associated with to determine which exposure estimates are relevant to the species (USEPA, 2020). Representative exposure in aquatic bins smaller than the EPA farm pond¹⁰ are represented by the Plant Assessment Tool (PAT) wetland as specified in **Appendix A**. Aquatic bins similar to or larger than the EPA farm pond are represented by the EPA farm pond. Most species are associated with multiple aquatic bins. Exposures may vary across uses so EPA calculates different MoDs for different uses.

Definition Box 4.

A **dicotyledon (dicot)** is a flowering plant species that has 2 seed leaves and flower parts are in 4s or 5s. Dicots are often referred to as "broadleaves." Examples of dicots are sunflowers and milkweed.

A **monocotyledon (monocot)** is a flowering plant species with one seed leaf and flower parts are in 3s. Examples of monocots include grasses, orchids, lilies.

A **non-flowering plant** does not produce flowers. Examples of non-flowering plants are ferns and lichens.

Aquatic bins: The EPA, FWS, and NMFS developed generic aquatic habitats to be utilized to estimate exposure to listed species (USEPA, 2020). The FWS identified the relevant aquatic bins for each listed species. EPA uses the bins to determine which aquatic habitat exposure estimates are relevant to calculate the MoD for the aquatic species.

¹⁰ The EPA farm pond is a conceptual model for estimating exposure in water in ecological risk assessment that assumes a 1-hectare surface area, a 2-meter depth resulting in a pond volume of 20,000 kiloliters, and a 10-hectare drainage area. The EPA farm pond was developed using specifications for construction of ponds in Georgia and is utilized with the Pesticide in Water Calculator (PWC) to estimate exposure in aquatic waterbodies similar to or larger than the EPA pond.

EPA utilizes different toxicity endpoints in the MoD calculations depending on whether the MoD reflects the potential for 1) direct impacts to populations of plants¹¹, or 2) impacts to plants that may reduce the diet or habitat quality of listed animals that depend on those plants. Regarding the second type, animals may have an obligate¹² or generalist¹³ relationship to plants, which EPA uses to determine the appropriate toxicity endpoint for the MoD calculation. EPA can calculate the MoD using either a species sensitivity distribution (SSD) or the most sensitive reliable endpoint that is available that is utilized to calculate the SSD, when data are not sufficient to calculate the SSD. EPA develops SSDs for terrestrial plants using the IC₂₅ values and SSDs for aquatic plants using the IC₅₀ values. For population-level impacts to listed plants and obligate animals, EPA uses either the 5th percentile of a SSD or the most sensitive IC₂₅ value when an SSD cannot be developed.¹⁴ EPA uses the 25th percentile of a SSD to represent an impact to the plant community used by that listed animal because that threshold indicates that on average 25% of plant species tested (a surrogate for the community of plant species) would be impacted at that level.

Table 5-1 summarizes the MoD and the groups of species with similar characteristics that are linked to that MoD; however, **Table 5-1** does not currently include the links between the community-level plant MoDs to all of the corresponding animals that could be impacted. EPA is proposing that all mitigation measures to reduce impacts to diet and habitat and subsequent effects on animals would be included on the general label, so the specific group of species that would be linked to those MoDs were not designated.

¹¹ Different toxicity endpoints may be considered in BEs when assessing direct effects to individual plants; however, the Strategy focuses upon population-level effects for listed plants.

¹² Listed species that cannot survive and/or complete their life-cycle without the specific species are called obligates.

¹³ Generalist listed species do not have an obligate relationship to another species.

¹⁴ Species Sensitivity Distributions are a common tool used for setting limits on exposure to a chemical or stressor. SSDs model the variation in the sensitivity of different species to a chemical and fit equations to understand the distribution of species sensitivity to a chemical. EPA uses the SSD Toolbox to generate SSDs. The Toolbox is available at: <https://www.epa.gov/chemical-research/species-sensitivity-distribution-ssd-toolbox>.

Table 5-1. Summary of Magnitude of Difference Calculations for Different Species Groups

Species Group ¹ (also includes CHs)	Magnitude of Difference (MoD) = Ratio of the Estimated Environmental Concentration (EEC) to the Toxicity Endpoint	
	EEC (Model ²)	Toxicity Endpoint ³
Terrestrial Habitats (Terrestrial Plant Exposure Zone)		
Listed terrestrial dicots and listed animals with an obligate relationship to terrestrial dicots	1-in-10 year daily average Terrestrial EEC in units of lbs a.i./A (PWC and PAT) Spray drift point deposition in units of lbs a.i./A (AgDRIFT®)	5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for dicots
Listed terrestrial monocots and listed animals with an obligate relationship to terrestrial monocots		5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for monocots
Listed terrestrial non-flowering plants and listed animals with an obligate relationship to terrestrial non-flowering plants ⁴		Most sensitive 5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ across monocots and dicots
Listed animals that use terrestrial habitats and have a generalist relationship to plants in these habitats ⁶		25 th Percentile of SSD of IC ₂₅ values or lowest IC ₂₅ for terrestrial plants
Wetland Habitats (Represented by the Wetland Plant Exposure Zone)		
Listed wetland dicots and listed animals with an obligate relationship to wetland dicots	1-in-10 year daily average Wetland EEC in units of lbs a.i./A (PWC and PAT) Spray drift point deposition in units of lbs a.i./A (AgDRIFT®)	5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for dicots
Listed wetland monocots and listed animals with an obligate relationship to wetland monocots		5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for monocots
Listed wetland lichens & non-flowering plants and listed animals with an obligate relationship to wetland lichens & non-flowering plants ⁴		Most sensitive 5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ across monocots and dicots
Listed animals that use wetland habitats and have a generalist relationship to plants in these habitats ⁶		25 th Percentile of SSD of IC ₂₅ or lowest IC ₂₅ for dicot or monocot plants
Aquatic Habitats (Represented by the Wetland Plant Exposure Zone, EPA Pond, or PFAM tailwater)		
Listed animals that use small volume/low flow aquatic habitats and have a generalist relationship to plants in these habitats ^{5, 6}	1-in-10 year daily average Wetland EEC in units of lbs a.i./A (PWC and PAT)	25 th Percentile of SSD of IC ₂₅ or lowest IC ₂₅ for dicot or monocot plants
	1-in-10 year daily average wetland EEC in µg a.i./L (PWC, PAT) for applications to non-flooded fields Concentration in water released from rice paddy or cranberry bog after holding period for applications to intermittently flooded fields (PFAM)	All available vascular and nonvascular plant IC ₅₀ values and/or 25 th Percentile from SSDs of IC ₅₀ values

Species Group ¹ (also includes CHs)	Magnitude of Difference (MoD) = Ratio of the Estimated Environmental Concentration (EEC) to the Toxicity Endpoint	
	EEC (Model ²)	Toxicity Endpoint ³
	Spray drift onto the surface area of aquatic bins 2, 5, 8	
Listed animals that use medium volume/flow aquatic habitats and have a generalist relationship to plants in these habitats ^{5,6}	1-in-10 year daily average EEC in EPA Farm Pond in µg a.i./L (PWC) Concentration in water released from rice paddy or cranberry bog after holding period for applications to intermittently flooded fields (PFAM) Spray drift onto the surface area of aquatic bins 3, 4, 6, 7, 9, 10	All available vascular and nonvascular plant IC ₅₀ values and/or 25 th Percentile from SSDs of IC ₅₀ values

CH=designated Critical Habitat; EEC = estimated environmental concentration; IC₂₅ = concentration resulting in 25% inhibition in growth; IC₅₀ = concentration resulting in 50% inhibition in growth; PAT = Plant Assessment Tool; PWC = Pesticide in Water Calculator; SSD = Species Sensitivity Distribution; PFAM = Pesticides in Flooded Applications Model; OCSPP=Office of Chemical Safety and Pollution Prevention

¹ The group assignment is determined based on the listed species taxon (plant or animal) and its habitat (terrestrial, wetland, small waterbodies, waterbodies equivalent to or larger than the farm pond). For listed plants, the plant group (monocot, dicot, non-flowering plant, lichen) is also considered. For listed animals, the relationship to plants (obligate or generalist) is considered. These group assignments link the species to the endpoint used to calculate the MoD, which is **bolded** and underlined. When discussing community level effects, this covers diet and habitat effects for listed animals with generalist relationship to plants and impacts on habitat quality and plant relevant physical and biological features for designated CH. As outlined in the **Case Study Summary and Process** document, when an SSD cannot be developed, the MoD for generalist and obligate animals are the same.

² The PWC version 2.001 is used to support exposure estimates in PAT and the EPA farm pond (USEPA, 2023b). PAT version 2.7.1 estimates exposure in the terrestrial and semi-aquatic plant exposure zones (USEPA, 2023c). PFAM is utilized to estimate exposure for pesticides applied to intermittently flooded crops such as cranberry bogs, rice, and watercress.

³ Toxicity endpoints are selected from OCSPP guideline 850.4150 vegetative vigor 850.4150 (USEPA, 2012a), OCSPP Guideline 850.4100 seedling emergence (USEPA, 2012b), OCSPP Guideline 850.4400 aquatic vascular plants, and OCSPP Guideline 4500 (USEPA, 2012b) and 4550 (USEPA, 2012c) non-vascular aquatic plant studies. Data from the open literature and other toxicity data may also be considered when determined to be reliable, as recommended in the Revised Method (USEPA, 2020). When an SSD is available, endpoints from the SSD are used to calculate the MoD, but when a reliable SSD is not available/possible, generally the most sensitive toxicity endpoint is used to calculate the MoD.

⁴ This is inclusive of animals that obligately depend on gymnosperms.

⁵ Currently, all listed aquatic animals have a generalist relationship to plants. If an animal is listed in the future that obligately relies on plants, this species will need to be assessed separately.

⁶ Also used to evaluate impacts on habitat quality and plant relevant physical and biological features (PBFs) for CH.

5.2 Interpreting Magnitude of Difference (MoD)

To address the potential for population-level impacts, the level of mitigation being proposed is based on the MoD for the particular species group considering species characteristics (*e.g.*, monocot, dicot, obligate animal, generalist animal, *etc.*) and habitat (*i.e.*, terrestrial, wetland, aquatic). The 10 species groups are outlined **Table 5-1** (*e.g.*, terrestrial dicot, terrestrial dicot, *etc.*). EPA identified proposed mitigations expected to reduce exposure to levels below the toxicity threshold when the MoD was greater than one. As described in the **Case Study Summary and Process**, there is variability in the toxicity data and exposure estimates. As such, EPA binned the MoDs by order of magnitude, because these are the levels where EPA is confident that there is a difference in the potential for population-level impacts. When the MoD is greater than 10 and the estimated environmental concentrations (EECs) exceed population-level toxicity thresholds, EPA has more confidence that there is a potential for population-level impacts and identified higher levels of mitigations. When MoDs are between 1 and 10 and the EECs and toxicity distributions overlap, there is a potential for some population-level impacts in some areas and populations but not in others. EPA identified less mitigation for these MoDs. As with the MoD calculations, there is also variability in the efficacy of the identified proposed mitigation measures. Thus, EPA binned both the MoD and mitigation categories according to the order of magnitude of the MoD.

EPA assigns a Magnitude of Effect (MoE) classification of low, medium, high, or very high to identify if there is a potential for population-level effects. EPA considers the supporting data used to calculate the MoD (environmental fate and toxicity data), incidents, and monitoring data as lines of evidence when making a determination on the potential for impacts to listed species as described in **Section 5.3**). EPA also identifies a mitigation category of low, medium, high, or very high based on the MoD as specified in **Table 5-2**. When the MoD is less than one and the lines of evidence confirm that population-impacts are not expected, EPA did not identify additional mitigation. When the MoD is between 1 and 10, EPA uses the lines of evidence to determine whether the MoD indicates low or medium MoE (*e.g.*, a potential for population-level impacts or community-level impacts). For example, EPA would identify a low MoE for MoDs between 1 and 10 if there are orders of magnitude of difference between growth endpoints and limited effect on survival in the terrestrial plant toxicity studies (see Metolachlor Case Study Example); however, EPA proposes to assign an MoE of medium if the growth and survival endpoints are within an order of magnitude of each other. Other lines of evidence (*e.g.*, incidents, monitoring data, and

Definition Box 5:

Magnitude of Effect (MoE): The MoE determines the potential for population level effects based on a low, medium, high, and very high classification. This is determined based on the MoD and lines of evidence (*e.g.*, consideration of the empirical fate and toxicity data and reported incidents and monitoring data).

Mitigation Category: The mitigation category is assigned a low, medium, high, and very high based on the MoD.

factors influencing the exposure estimate), may provide additional information to influence the assignment of MoE for a pesticide.

Table 5-2. Magnitude of Difference using the Population-based Toxicity Endpoints and the Relationship to Magnitude of Effect, Potential Population Level Impacts, and Identified Mitigations.

Magnitude of Difference (MoD) using Population-based Toxicity Endpoint	Magnitude of Effect (MoE)	Population Level Impacts ¹	Mitigation Category (Identified Mitigations to Reduce Exposure Estimates ²)
<1	Low	Not Likely	None
1 to <10	Low or Medium	Not likely or likely	Low (1 to 10 times reduction)
10 to <100	Medium or High	Likely	Medium (10 to 100 times reduction)
100 to <1000	High or Very High		High (100 to 1000 times reduction)
1000 or higher			Very High (>1,000 times reduction)

¹ The MoD is only one consideration in identification of potential population-level impacts. The lines of evidence described in **Section 5.3** are also considered.

² This is the amount of reduction identified to reduce exposure to levels that are not expected to result in potential population-level impacts.

While the MoD reflects exposure estimates considering transport via spray drift and runoff/erosion, EPA is proposing to identify the level of mitigation for these transport pathways separately. EPA proposes to identify the amount of mitigation that would apply by the reduction in exposure to get below the population-level or community-level toxicity threshold for each species group. Therefore, the mitigation category is determined by the MoD. Where EPA determines a mitigation category of low and MoD between 1 and 10, mitigation measures will be identified that would achieve a one to 10x reduction in exposure; for the medium mitigation category and MoD between 10 and 100, mitigation measures will be identified for a 10 to 100x reduction in exposure; for a high mitigation category and MoD between 100 and 1000, mitigation measures will be identified for a 100 to 1000x reduction in exposure; and for a very high mitigation category (MoD >1000) mitigation measure will be identified for a >1000x reduction in exposure, with the potential for the highest level of protection and therefore, the most mitigation.

In the **Technical Support for Mitigation**, EPA evaluated the open literature associated with the runoff/erosion mitigation measures identified in **Section 6.2** to describe the effectiveness and reliability of the mitigation measures in reducing exposure. As described, uncertainty with effectiveness of an individual measure, as well as with the effectiveness of combinations of measures, make it difficult to provide an empirical estimate of reductions in EECs for any individual measure or combinations of measures. However, through evaluating these mitigations, it appears that there are likely to be functional limits to the effectiveness of runoff/erosion mitigation measures, used individually or in combination, as the measures are designed to reduce

exposure, not eliminate it. EPA is proposing that the MoDs developed considering transport in both drift and runoff/erosion would be utilized to determine runoff/erosion points; however, EPA would select the spray drift mitigation measures which would result in deposition below the relevant toxicity endpoint. Spray drift mitigation is expected to result in reduced exposure in the receiving terrestrial, wetland, and aquatic habitats. EPA does not revise model-based exposure estimates or recalculate the MoDs for runoff considering the loading reductions afforded by the identified spray drift mitigation. In general, EPA's MoD approach to identify different levels of mitigation considers the uncertainty in both the endpoint and exposure estimates, as well as the combination of spray drift and runoff/erosion mitigation measures. This approach allows flexibility so that the mitigation measures identified for an herbicide will reduce EECs to within an order of magnitude of the population-based endpoints. For plants in terrestrial and wetland habitats, MoDs from 1 to <1000 (*i.e.*, exposure estimates up to 3 orders of magnitude above the population-based endpoint) are expected to be mitigatable through the combination of spray drift mitigation and the runoff/erosion mitigation menu. Therefore, for listed plants and animals and CH, implementation of spray drift and/or runoff/erosion mitigation is sufficient to reduce exposures to the extent that population-level impacts are unlikely. In a future effects determination and/or through programmatic consultation, the mitigation identified for herbicides that follow the Strategy would be expected to result in a reduced likelihood of predicting J/AM and reducing the potential for take for all taxa as a result of effects to plants. For some herbicides, the MoDs may be >1000. In these cases, the mitigation menu (for spray drift and runoff/erosion) alone is unlikely to result in reductions sufficient to reduce the likelihood of a future prediction of J/AM for all species. Consideration of these cases will be made on a chemical/use specific basis to resolve these cases.

5.3 Lines of Evidence when Determining the Potential for Population-level Impacts

EPA uses lines of evidence recommended in the *Revised Method for National Level Listed Species Biological Evaluations of Conventional Pesticides* and other ecological assessment guidance documents (USEPA, 1998a; USEPA, 2004; USEPA, 2020) when evaluating the potential for population-level impacts. For the Strategy, the level of confidence relates to the potential for plant population-level impacts or plant community-level impacts as well as potential impacts to diet and habitat for animals. Lines of evidence inform the reliability and variability of both exposure and impacts estimates (see **Case Study Summary and Process** for details).

Registrants submit environmental fate, exposure, and toxicity data, and EPA utilizes those data along with exposure models to develop MoDs. EPA considers the quality and reliability in these data sets when interpreting the reliability of the MoD. Additionally, registrants submit field studies, and EPA considers whether field data confirm the understanding of the potential for impacts or additional characterization is appropriate. Monitoring data and incidents may be collected after a pesticide is already in use that may inform future ecological analysis on the potential for impacts, in a similar manner to the way that EPA uses field study results. Where such data is available, EPA evaluates whether the model estimated results and laboratory data are consistent with what is being observed in the environment. One nuance to incident data and monitoring data, is that the absence of a detection in the environment or an incident does not

mean that exposure is not occurring or an impact is not occurring in the environment because monitoring data may not have been collected in areas where the pesticide is used, and not all incidents will necessarily be noticed or reported.¹⁵ These lines of evidence are discussed in more detail in **Appendix B**.

When EPA does not have incident or monitoring data, EPA relies on the registrant submitted data to predict the potential for population-level impacts. This does not undermine our confidence in our MoD because the registrant submitted data and EPA's ecological analysis use the best available information to understand the potential for impacts to populations. Data submitted to support registration of pesticides provides a robust dataset to understand the potential for population-level effects from the use of pesticides.

EPA evaluates these lines of evidence in ecological impact assessments supporting registration actions. Thus, this information is readily available to support Step 1 of the Strategy Analysis. When multiple lines of evidence are complementary (*e.g.*, laboratory and field-based data are consistent in terms of effect and exposure) and/or there are monitoring or incident data (which reinforce estimates of exposure and the likelihood of population-level impacts), then these increase EPA's confidence in predicting the potential for population-level impacts. EPA plans to consider these lines of evidence for all MoD categories. However, these lines of evidence may be especially important whenever the MoD is less than 10. In this situation, the level of mitigation identified may differ if EPA does not consider the incident or monitoring data. EPA is proposing to use its best professional judgement when determining whether population impacts are likely for MoD between 1 and 10. Below are some examples of how EPA may consider the lines of evidence.

- The slope of the SSD is steep such that there is a small difference between the 5th and 25th percentile of the SSD and the MoD is between 1 and <10. EPA would select an MoE of medium indicating population-level effects may be likely because a small change in the EEC could result in exposure greater than the 25th percentile of the SSD. See the case study for dicamba and 2,4-D for an example of this line of evidence.
- Survival and growth were observed in the plant toxicity studies within 10x of each other and the MoD is between 1 and <10. EPA would select an MoE of medium indicating population-level impacts are likely because a small change in the EEC could result in reduced survival. See the case study for trifluralin for an example of this line of evidence.
- Incidents where effects to plants off the field were observed and there is confidence that the incidents resulted from the use of the herbicide of interest and the MoD was between 1 and

¹⁵ Incident reports for non-target organisms typically provide information only on mortality events and plant damage. Sublethal effects in organisms such as abnormal behavior, reduced growth and/or impaired reproduction are rarely reported, except for phytotoxic effects in terrestrial plants. EPA's changes in the registrant reporting requirements for incidents in 1998 may account for a reduced number of reported incidents. Registrants are now only required to submit detailed information on 'major' fish, wildlife, and plant incidents. Minor fish, wildlife, and plant incidents, as well as all other non-target incidents, are generally reported aggregately and are not included in the incident database system. In addition, there have been changes in state monitoring efforts due to a lack of resources.

<10. EPA would select an MoE of medium indicating that population-level effects are likely because the incidents confirm that population-level impacts occurred in the field.

- Monitoring data were available showing that detections were occurring at EECs within an order of magnitude of population-level toxicity thresholds in environments similar to where species may occur and that reflected current use patterns of the herbicide. EPA would select and MoE of medium or high as there would be evidence indicating the exposure was occurring in the environment at levels that could result in population-level impacts.
- Effects were limited to reductions in growth and there was an order of magnitude or more difference in the IC₂₅ endpoints and/or the 25th percentile of the SSDs. There are no incident or monitoring data suggesting that population-level impacts are occurring in off-field environments. EPA would select an MoE of low for MoDs 1 to <10, as multiple lines of evidence indicate that population-level impacts are not likely. See the case study for metolachlor as an example of this line of evidence.

See the case studies for additional examples of how lines of evidence may be considered in determining the MoE or potential for population-level impacts.

6 Detailed Explanation of Step 2: Identify Mitigation Measures

This section describes the approaches for identifying spray drift and runoff/erosion mitigation measures under the proposed Strategy. This section also describes the types of areas that can be included in buffers when that mitigation is identified.

6.1 Spray Drift Mitigation Measures

Where EPA identified impacts from spray drift to at least one listed species at step 1 of the Strategy Analysis, the next step is to identify mitigations to address spray drift. EPA is proposing to use the use-specific application scenario (application rate, equipment, and DSD); chemical-specific toxicity endpoints¹⁶ for aquatic, terrestrial, and wetland plants; and population-level MoD, to identify the level of spray drift mitigation that would apply (see **Figure 4-3**). EPA proposes to identify the level of spray drift mitigation that would apply by considering the relationship between the spray drift deposition and the relevant toxicity endpoint at the edge-of-the-field and at the maximum buffer distance. EPA is proposing that when the spray drift deposition is higher than the toxicity endpoint at the edge-of-the field, a downwind spray drift buffer would be established to reduce impacts from drift alone. For combinations of application rate, application release height, and droplet size where identified downwind spray drift buffer distances would result in deposition that would exceed the population-level MoD at the buffer distance, less drift prone application methods may be considered to address potential spray drift impacts. EPA uses AgDRIFT[®] to calculate the distance to get to concentrations below the toxicity endpoint (or below 10x the toxicity endpoint), and to establish the distance from the application

¹⁶ EPA is proposing that the relevant toxicity endpoints are those utilized to calculate the corresponding MoD as described in **Table 4-1**

where EPA expects the potential for population-level impacts is unlikely. The EPA Offsite Transport Guidance describes how to use AgDRIFT® to calculate distances to a target concentration (USEPA, 2013). The **Technical Support for Mitigation** provides supporting information on the assumptions and development of the level of spray drift mitigation and **Case Study Summary and Process** provides chemical-specific demonstrations of this approach.

EPA’s experience with identifying applicable drift buffers indicates that there is a need to identify buffers between the application and a habitat in increments that are feasible to implement and broadly applicable across agronomic and spray equipment differences. Buffers between the application and habitat are also most effective when they are downwind from application areas (see **Technical Support for Mitigation** for further details) and the downwind direction can be easily ascertained with use of simple equipment (e.g., a windsock). EPA recognizes that the effectiveness of buffers is greatest near the site of application and diminishes as the distance away from the application increases. Therefore, EPA is proposing maximum drift buffers for typical spray application methods (aerial, ground, airblast)¹⁷, and different spray droplet sizes (e.g., fine to medium, coarse to very coarse; **Table 6-1**) to focus the use of spray drift buffers to circumstances where they are most effective. Generally, maximum buffers are the distance where the estimated exposure does not change substantially as the buffer distance increases incrementally (i.e., less than 1% change in the fraction of applied over 100-feet).

Table 6-1. EPA’s Proposed Maximum Drift Buffer Distances for Aerial, Ground, and Airblast Applications for Conventional Agricultural Herbicides.

Type of Application	Application Parameters Assumed in Modeling	Maximum Buffer Distance in Feet
Aerial Application	Very fine to fine DSD	500
	Fine to medium DSD	300
	Medium to coarse DSD	300
	Coarse to very coarse DSD	200
Ground Boom Application	Very fine to fine DSD; high boom	200
	Very fine to fine DSD; low boom	100
	Fine to medium-coarse; high boom	100
	Fine to medium-coarse; low boom	100
Airblast	Sparse	100

DSD=Droplet Size Distribution; Low boom height is the release height is less than 2 feet above the ground; high boom = release height is greater than 2 feet above the ground

Table 6-2 summarizes options EPA has identified to reduce spray drift buffers and the associated reduction in the buffer. See the **Technical Support for Mitigation** for additional information. These buffer reducing options that pesticide users may elect to use include wind breaks/hedgerows that are at least as tall as the spray release height to intercept drift; hooded sprayers¹⁸; and application rate reductions. Wind directional buffers could be reduced to half the

¹⁷ Most herbicides are not applied via airblast; however, airblast applications may be needed for fruit thinners or plant growth regulators.

¹⁸ Hooded sprayers are drift reducing technology that physically blocks driftable droplets at or near the spray nozzle.

distance otherwise required when windbreaks (*e.g.*, trees or hedgerows) between the application site and habitat are present (*e.g.* a 100 ft buffer can be reduced to 50 ft when a windbreak is present). The windbreak would need to have a row of broad-leaved trees the full length of the treated crop with leaves visible over the entire length, with no noticeable gaps. Wind directional buffers could be reduced to half the distance otherwise required when a hooded sprayer is used. Additional site characteristics that can reduce a given buffer include a crop on field that is ≥ 1 ft tall (aerial)¹⁹, application with a high relative humidity (>60% for ground and >70% for aerial)²⁰, or application at a low wind speed (3 to 7 mph for aerial)²¹. These site characteristics may result in reducing the spray drift buffer by 25 ft.

Definition Box 6.

Windbreaks are barriers, usually consisting of trees and shrubs, used to reduce and redirect wind. As wind blows against a windbreak, air moves up and over the top or around the ends of the windbreak. Windbreak structure (*i.e.*, height, density, number of rows, plant composition) determines the effectiveness of a windbreak in reducing wind speed. Wind directional buffers may be maintained at half the distance when windbreaks (*e.g.*, trees or riparian hedgerows) between the application site and listed species habitat are present. The windbreak must be downwind between the field and listed species habitat. Windbreaks must have a minimum of one row of broad-leaved trees and/or shrubs the full length of the treated crop with leaves visible over the entire length, with no noticeable gaps. The height of the trees or windbreak must be at a height higher than the release height of the application. The windbreak must be planted according to local/regional/federal conservation program standards; however, no state or federally listed noxious or invasive trees or shrubs should be planted. Windbreaks must be maintained such that their functionality is not compromised. While likely only feasible for small fields, a manmade structure (*e.g.*, curtain that is raised prior to application, building) could serve as a wind break as long as the structure covered the entire distance of field adjacent to the listed species habitat and the structure is higher than the release height of the application.

Hooded sprayers are drift reducing technology that physically blocks driftable droplets at or near the spray nozzle.

¹⁹ Based on changing AgDRIFT® Tier III aerial parameterization from bare ground surface roughness to an average crop surface roughness value. Not directly applicable to ground application because difference is only impactful at distances beyond maximum buffer distance.

²⁰ Based on changing relative humidity (RH) from 20% to 60% (ground) and 50% to 70% (aerial). 20% RH is representative of the atmospheric conditions relevant to ground boom spray drift modeling. Default aerial RH (50%) is not directly comparable to ground but relatively higher.

²¹ Based on changing AgDRIFT® Tier III aerial parameterization from 10 mph to 7 mph.

Table 6-2. Summary of Spray Drift Mitigation Options That Could Result in Reducing the Spray Drift Buffer

Mitigation Consideration	Application Type		
	Aerial	Ground	Airblast
Downwind Windbreak/Hedgerow	Buffer reduced by 50%	Buffer reduced by 50%	Buffer reduced by 50%
Hooded Sprayer	N/C	Buffer reduced by 50%	N/C
App. Rate Reduction	Buffer calculated using app. rate and AgDRIFT®	Buffer calculated using app. rate and AgDRIFT®	Buffer calculated using app. rate and AgDRIFT®
Temperature	N/A	N/A	N/C
Relative Humidity	With RH >70%, 25 ft buffer reduction when recommended buffers is ≥250 ft*	With RH >60%, 25 ft buffer reduction when recommended buffer is ≥100 ft**	N/C
Change from Fine to Coarse DSD	Buffer derived from available deposition curves	25 ft buffer reduction when recommended buffer is ≥75 ft**	N/R
Crop on Field	25 ft buffer reduction for buffers ≥200 ft*	N/A	N/R
Windspeed: 3 to 7 mph	25 ft buffer reduction at 75-175 ft	N/A	N/A

Baseline for percent reduction is AgDRIFT® Tier I Aerial module

N/A – Not applicable currently because impact is not substantial enough to change spray drift buffer by ≥25 ft; N/C – Not considered in the current effort; N/R – Not relevant; App. – application; mph – miles per hour

*In order to use both the >70% relative humidity (RH) buffer reduction and the crop on the field buffer reduction together, the recommended buffer must be ≥275 ft.

** In order to use both the ground humidity reduction and coarse reduction together, the recommended buffer must be >125ft.

EPA is aware of other spray drift mitigation options that may have the potential to reduce the spray drift buffers but there are not enough data to support proposing the mitigations at this time. EPA has identified the following example mitigations that currently lack sufficient information for proposing at this time (including but not limited to): nozzle/formulation combinations that produce coarser droplets than currently labeled; and directed sprays/smart technology that reduce drift (*e.g.*, shutting off nozzles at specific times or reducing the spray boom width) and/or reduce the amount of pesticide applied at field edges. EPA welcomes information on their efficacy and plans to include additional options for uses given data that allows EPA reliably assess the potential for associated drift reduction.

6.1.1 Selection of the Level of Spray Drift Mitigation

Where EPA identified impacts from spray drift to at least one listed species at Step 1 of the Strategy Analysis, the next step is to identify mitigation measures to address spray drift. For efficiency, as described for the example case study herbicides, EPA is first comparing the calculated spray drift distances for a particular herbicide to the maximum drift distance as a screen. If spray drift distances for a particular herbicide are all greater than the maximum distance, then the spray drift buffer for that herbicide would default to the maximum distance, possibly with some additional mitigation measures (*e.g.*, windbreak). EPA identified mitigation

measures, including a spray drift buffer distance at which the deposition is predicted to result in exposure that would be below a toxicity threshold associated with a potential for population-level impacts (*i.e.*, MoD > 1). As explained in **Section 5.1**, EPA uses different toxicity endpoints to calculate MoDs for listed plants and listed animals that rely upon plants (**Table 5-1**). So, there may be different levels of mitigation identified for listed plants and for listed animals that depend on plants. EPA also calculates MoD and identifies the spray drift mitigation level for aquatic species and terrestrial habitat. The level of mitigation identified for terrestrial habitat is expected to reduce the potential for impacts via spray drift for aquatic habitat as definitions of terrestrial habitat for listed species include areas proximate to aquatic habitat for listed species and current herbicide case studies found spray drift mitigation measures for terrestrial plants are consistently higher than those for spray drift mitigation measures for aquatic plants (See **Case Study Summary and Process** for related support and other examples of spray drift mitigation measures).

For the proposed Strategy, as described in **Section 5.2** EPA evaluated levels of MoD and, based on that analysis, expects there could be potential population-level impacts when MoDs at the edge of the field are: 1) between 1 and 10; or 2) greater than 10. If lines of evidence as described in **Section 5.3** indicate an MoD between 1 and 10 could potentially result in population impacts at an MoD of 1, EPA sets the target concentration to the toxicity endpoint utilized to calculate the corresponding MoD. If the MoD of 10 results in a potential for population-level impacts (*e.g.*, an MoE of medium), then EPA sets the target concentration to 10x the toxicity endpoints used to calculate the corresponding MoD. EPA utilized AgDRIFT® to calculate the distance to get to concentrations below the toxicity endpoint (or below 10x the toxicity endpoint), and to establish the distance from the application where EPA expects the potential for population-level impacts is unlikely. The EPA Offsite Transport Guidance describes how to use AgDRIFT® to calculate distances to a target concentration (USEPA, 2013).

Table 6-3. Summary of MoD and Determinations of the Target Concentration for Drift

Magnitude of Difference (MoD)		Considerations for Mitigation
At the Edge of the Field	At the Maximum Buffer Distance	
<1	<1	No drift mitigation identified
>1	<1	The buffer distance to achieve the target deposition using AgDRIFT® and droplet size mitigation are identified and options to reduce the buffer are available. The target deposition is determined using the toxicity endpoint or the toxicity endpoint times 10 based on the lines of evidence described in Section 5.3 .
>1	Between 1 and 10	If lines of evidence indicate population level impacts (as described in Section 5.3) may occur at an MoD of 1, the maximum buffer distance would apply. If the lines of evidence indicate that population level impacts may occur at an MoD of 10, a buffer distance to result in exposure that is 10x the relevant toxicity endpoint would apply. Options to reduce the buffer are available.
> 10	>10	EPA identified drift mitigations when the MoD is 10 or greater as EPA considers this level to indicate a potential for population-level impacts. The maximum spray drift buffer would apply and additional mitigation may also be applicable. Options to reduce the buffer would not be available.

The next step is to compare the distance to an MoE of medium²² (which represents when population-level impacts may occur) to the maximum buffer distance. If the distance to no potential for population-level impacts is less than the maximum buffer distance in **Table 6-1**, then the buffer distance would apply and a user may use any of the options in **Table 6-2** to reduce the applicable buffer distance. If the distance to no potential of population-level impacts is greater than the maximum buffer, options to reduce the buffer would not apply without changing their application method (*e.g.*, lowering release height or increasing droplet size). Rather, additional restrictions would apply to reduce offsite exposure such as: 1) a windbreak, hooded sprayer, or coarser droplets; or 2) selecting a different application method.

The spray drift mitigation measures in **Table 6-4** and **Table 6-5** provide examples of the options that could be available to meet the same mitigation level for aerial and ground applications, respectively. Each table provides example mitigation measures where MoD >10 at the maximum buffer distance (a) and where MoD <10 at the maximum buffer distance (b). The example illustrates the mitigation measures to reduce spray drift exposure by 100x when compared to an application rate of 1.0 lb a.i./A (*e.g.*, for a population-level endpoint of 0.001 lb a.i./A and the MoD target identified is 10).

²² As discussed, this may be a specific toxicity endpoint or 10x the toxicity endpoint based on lines of evidence.

Table 6-4. Example Proposed Spray Drift Mitigation as Related to Single Maximum Application Rate and Droplet Size with Target Deposition of 0.01 lb a.i./A for Aerial Application

(a) Application scenarios where windbreaks would apply without a reduction in buffer distance available.

Single Maximum Application Rate (lb ai/A)	Downwind Spray Drift Buffer Between the Application and Terrestrial or Aquatic Habitat (feet)		
	Fine-Medium DSD	Medium-Coarse DSD	Coarse-Very Coarse DSD
1.0	Not applicable	300 + windbreak would apply	200 + windbreak would apply
0.8	Not applicable	300 + windbreak would apply	Not applicable
0.6	300 + windbreak would apply	Not applicable	Not applicable

(b) Application scenarios where wind directional buffers can be maintained at half the distance when windbreaks (e.g., trees or hedgerows) are present between the application site and habitat for listed species (e.g., a 200 ft buffer would be reduced to 100 ft with a windbreak).

Single Maximum Application Rate (lb ai/A)	Downwind Spray Drift Buffer Between the Application and Terrestrial or Aquatic Habitat (feet)		
	Fine-Medium DSD	Medium-Coarse DSD	Coarse-Very Coarse DSD
1.0	Not applicable	Not applicable	Not applicable
0.8	Not applicable	Not applicable	200 ^{a,b}
0.6	Not applicable	275 ^{a,b,c}	200 ^{a,b}
Options to Reduce Buffer Distance	<ul style="list-style-type: none"> a. Windbreaks could be utilized to reduce the buffer distance by half. b. Buffers ≥ 175 ft can be reduced by 25 ft if on field vegetation height at application is ≥ 1 ft. c. Buffers ≥ 250 ft can be reduced by 25 ft if relative humidity at time of application is $>70\%$. 		

Table 6-5. Example Proposed Spray Drift Mitigation as Related to Single Maximum Application Rate and Droplet Size with Target Deposition of 0.01 lb a.i./A for Ground Boom Application

(a) Application scenarios where windbreaks or hooded sprayers would apply

Single Maximum Application Rate (lb ai/A)	Downwind Spray Drift Buffer Between the Application and Terrestrial and Aquatic Habitat (feet)			
	Very Fine-Fine High Boom	Very Fine-Fine Low Boom	Fine-Medium/Coarse High Boom	Fine-Medium/Coarse Low Boom
1.0	200 + windbreak or hooded sprayer would apply	Not applicable	Not applicable	Not applicable

(b) Application scenarios where windbreaks or hooded sprayers could be utilized to reduce the buffer distance by half (e.g., a 100 ft buffer would be reduced to 50 ft with a hooded sprayer)

Single Maximum Application Rate (lb ai/A)	Downwind Spray Drift Buffer Between the Application and Terrestrial and Aquatic Habitat (feet)			
	Very Fine-Fine High Boom	Very Fine-Fine Low Boom	Fine-Medium/Coarse High Boom	Fine-Medium/Coarse Low Boom
1.0	Not applicable	100 ^{a, b, c}	75 ^{b, c}	50 ^c
0.8	200 ^{a, b, c}	75 ^{b, c}	50 ^c	25 ^c
0.6	150 ^{a, b, c}	75 ^{b, c}	50 ^c	20 ^c
Options to Reduce Buffer Distance	a. Buffers ≥100 ft can be reduced by 25 ft if relative humidity >60% at the time of application b. Buffers ≥75 ft can be reduced by 25 ft with coarse or coarser droplets c. Buffer can be reduced by half with Windbreak/Hedgerow or Hooded Sprayers. If original buffer is ≤25 ft, no buffer would be applicable			

6.2 Proposed Runoff and Erosion Mitigations

Exposure from transport of pesticides off-site in aqueous runoff and/or erosion could occur following herbicide applications. Whether runoff or erosion will occur from a particular field depends on the field characteristics such as soil type, slope, and weather (precipitation rate and amount) and pesticide properties. EPA is proposing mitigations where runoff/erosion could lead to population-level impacts. Whether a pesticide or transformation product is predominantly in dissolved phase transport (aqueous runoff) or sorbed phase transport (erosion) is largely dependent on the pesticide’s physical-chemical properties such as the organic-carbon normalized soil-water distribution coefficient (K_{oc}).²³ Given that runoff and erosion mitigation measures vary in their effectiveness at reducing exposure in off-site environments, discussed in **Section 6.2.1**, EPA is proposing a point system, which recognizes that some mitigations are more effective than others and that some herbicide use(s) may need a higher level of mitigation than others. The

²³ For most pesticides, sorption coefficients are available 1) normalized to the fraction of organic material in soil (K_{oc}) and 2) without normalization (K_d). For pesticides where the K_d is the recommended sorption coefficient for the pesticide, the K_d can be converted to K_{oc} using standard equations and the K_{oc} and the corresponding efficacy applied. There is some uncertainty in this assumption as organic carbon is not always the driver of sorption for ionic pesticides. Freundlich sorption coefficients may also be utilized in this analysis.

number of points identified reflects the level of reduction in exposure needed to avoid the potential for population-level impacts (established in Step 2 and described in **Section 6.2.2**).

EPA categorized the runoff and erosion mitigation measures as follows:

- **Rain restrictions that generally would apply to all herbicides.**
- **Field Characteristics** are characteristics of the field that are likely to indicate the field will have less runoff and erosion than other fields and thus needs fewer mitigation measures to reduce offsite transport. For example, fields with a low slope or permeable soils likely have less runoff. These are similar to considerations used by conservation specialists to determine what measures are recommended for a particular field.
- **Pesticide Application Parameters** that users may employ to reduce runoff and erosion such as rate reductions, soil incorporation, and use of certain application technologies that may lead to less concentrated run-off. While changes to the application occur on the field, they are considered separately from the proposed in-field mitigation category below, which includes measures related to the field management. The pesticide application parameters consider the change in application related to a single application as it may be a single application that could result in an impact from a pesticide. While reducing the number of applications may also be beneficial considering the overall loading over time, a reduction may not be adequate to reduce population-level impacts.
- **In-field Management** measures that growers may employ to reduce runoff and erosion are those that involve the management of the field. For example, management of irrigation water, cover crops, or reduced tillage. Adjacent to the field mitigation measures are those that generally occur adjacent to the field such as a field border. Some measures may occur on the field and adjacent to the field, and they are included in both categories.
- **Adjacent to the Field** mitigation measures are those that occur adjacent to the field to which the pesticide application occurs and between an aquatic or terrestrial habitat for listed species.
- **Other mitigation measures** are those that may be considered but that do not fit into the categories above.
- **Exemptions** are those measures that EPA and/or the Services have determined are essentially equivalent to up to 9 points. Examples of these include when the application is more than 1000-feet away from a habitat for listed species, subsurface drainage is installed in the field, or the grower is following recommendations from an expert conservation specialist to reduce offsite transport from the field. When a field is more than 1000 feet away from the application site, overland flow will be substantially diminished (TXDOT, 2019; VADEQ, 1992; Wu and Lane, 2017). Therefore, EPA assumes that fields further than 1000-feet away would contribute limited runoff and erosion to

adjacent areas. When subsurface drainage is installed, the drainage would be released into saturation buffers or the drainage collected in a water retention system to minimize offsite runoff and erosion. Finally, EPA would like additional information on the which conservation specialists may be relied on to give recommendations to minimize offsite transport into adjacent areas or what characteristics of a conservation program could be relied on such that it may be utilized instead of the need to follow the mitigation menu in part or whole.

These are described in more detail in the **Technical Support for Mitigation** document and in **Section 7.2**.

6.2.1 Determining Level of Runoff/Erosion Mitigation

Where EPA's evaluation shows that there is a potential for population-level impacts for a species from runoff or erosion transport pathways, EPA determined the number of points to reduce these potential impacts based on the MoD for terrestrial, wetland, and aquatic plants available in the relevant pesticide specific risk assessment or from analysis conducted similar to Step 1 recommendations. **Table 6-6** provides a summary of the different points identified for different ranges of MoD. As explained further in **Case Study Summary and Process**, given the variability in exposure estimates and toxicity data, EPA assumed the precision in the MoD to be an order of magnitude (*i.e.*, a factor of 10). When there is an order of magnitude difference in the MoD, there is confidence that the potential for impacts is substantially different. EPA is proposing to identify the points based on the level of reduction in exposure to reduce the potential for population-level impacts. In other words, the higher the MoD for a particular herbicide, the higher the level of mitigation identified and therefore number of points needed.

EPA developed the proposed decision framework to show how runoff/erosion mitigation measures and points would be identified as described in **Figure 4-4**. Runoff/erosion mitigation measures would be identified when the MoD is greater than one. EPA is proposing that the number of points identified to reduce offsite transport would be determined based on 1) the MoD (as described in **Table 5-1** and **Table 6-6**), 2) the organic-carbon normalized soil-water distribution coefficient (K_{oc})²⁴ of the active ingredient and any residues of concern for plants, and 3) the aerobic soil metabolism half-life of the herbicide of parent and any residues of concern. EPA found that runoff/erosion mitigations are more effective for chemicals with K_{oc} greater than 1000 L/kg-organic carbon (Alix *et al.* 2017) or a solid-water distribution coefficient (K_d) of 50 L/kg-soil.²⁵ Pesticides that have an aerobic soil metabolism half-life less than 10-day tend to have reduced exposure estimates when the application does not occur within 48-hours of 1 inch of rain (USEPA, 2023a). Therefore, when all aerobic soil metabolism half-life values for the relevant

²⁴ The K_{oc} is a measure the propensity of an herbicide to be dissolved in water or sorbed to soil or sediment.

²⁵ EPA assumed the K_d value of 50 L/kg-soil was similar to 1000 L/kg-soil using the same criteria utilized in the CFR to identify when sediment toxicity data are required (40 CFR § 158.630 Subpart G Ecological Effects). The Agency's justification for selecting $K_d \geq 50$ L/kg as a criterion for requiring the study was that this value would capture those chemicals with about 80% adsorption of a chemical to sediment organic carbon (2%).

residues are less than 10-days, one less runoff/erosion mitigation point would be identified, assuming the label includes the 48-hour rain restriction. However, this would not be applicable if the 48-hour rain restriction was not on the label. When the MoD is greater than 1000 or if the mitigation points identified are not achievable, other options to reducing the potential for population-level impacts to plants may be considered. For example, the use of offsets as discussed in **Section 8** may be considered.

Table 6-6. Potential Number of Points Identified to Reduce Exposure via Runoff and Erosion

Magnitude of Difference (MoD) ¹	Points Identified ²	
	Runoff Prone (K _{oc} <1000 L/kg-oc or K _d <50 L/kg-soil) ⁴	Erosion prone (K _{oc} ≥1000 L/kg-oc or K _d ≥ 50 L/kg-oc) ⁴
<1	No mitigation	No mitigation
1 – <10	1 if lines of evidence indicate population level impacts ³ may occur at an MoD of 10 3 if lines of evidence indicate population level impacts ³ may occur at an MoD of 1	
10 – <100	6	5
100 – <1000	9	7
1,000 or higher	9 plus other mitigations	

¹ The MoD is the ratio of the exposure estimate to the relevant toxicity endpoint for population-level impacts, as described in **Section 5.1**.

² If the 48-hour rain restriction is on the label and the aerobic soil metabolism half-life for parent and residues of concern is less than 10-days, the number of mitigation points could be reduced by one point. The 48-hour rain restriction states, “Do not apply when soil in the area to be treated is saturated or if NOAA/National Weather Service (available at weather.gov) predicts a 50% chance or greater of 1 or more inches of rainfall to occur within 48 hours following application.”

³ **Section 5.3** describes the lines of evidence considered to determine whether population-level impacts may occur.

⁴ The solid-water distribution coefficient (K_d) and organic-carbon normalized solid-water distribution coefficient (K_{oc}) are measures of the propensity of an herbicide to be dissolved in water or sorbed to soil or sediment. These are measured in OCSPP Guideline 835.1230 (USEPA, 2008).

EPA would identify fewer points for pesticides mainly transported in the sorbed phase as data demonstrates that the efficacy of mitigation measures for these pesticides is higher than the efficacy for pesticides mainly transported in the dissolved phase (Alix *et al.* 2017). EPA considers the sorption coefficients for parent and transformation products that are residues of concern for plants. For MoD between 1 and 10, the points EPA is proposing for the Strategy for both runoff and erosion prone herbicides are the same because the data for many of the measures did not show differences in efficacy. For MoD between 10 and 100, EPA is proposing to identify one less point for erosion prone pesticides than for runoff prone pesticides because efficacy of the mitigation is generally higher for erosion transport. For higher MoD herbicides, EPA increased this difference by 2 points because the Agency expects that multiple measures would apply, and all would likely have an increased efficacy for the erosion prone pesticides (Alix *et al.* 2017).

6.2.2 Runoff and Erosion Mitigation Measures Menu, Exemptions, and Efficacy Evaluation

As described in detail in the **Technical Support for Mitigation**, EPA collected information from various publications, conducted modeling, and developed runoff/erosion mitigation measures. As described in more detail below, the efficacy of reducing pesticide offsite transport in the studies for a particular measure varies considerably. For some measures, efficacy data is limited and for others, there are hundreds of efficacy studies.

EPA categorized mitigation measure efficacy at reducing exposure estimates and offsite transport into adjacent areas considering 1) the number of scientific studies available to support that the measure, on average, reduces runoff or erosion transport; 2) the range and average percent reductions across studies (when available in a review) and/or modeling results; and 3) best professional judgement.

Two major considerations in evaluating available literature on the effectiveness of a particular mitigation measure is the number of available studies and whether those studies show, on average, a percent reduction in offsite transport (Alix *et al.*, 2017; FOCUS, 2007; Reichenberger *et al.*, 2007; Yuan *et al.*, 2022). This is particularly important for many of the runoff/erosion mitigation measures as efficacy can vary considerably from site to site and within a site. For example, for some measures, the range of the efficacy from the studies is from 0% to 100%. EPA refers to the number of the available efficacy studies as the strength of evidence. This is a key factor because as the number of sites/studies increases, EPA can gain a better understanding of the efficacy of the measure in different environmental conditions. As multiple scientific studies confirm previous research, there is greater confidence in the efficacy of the measure across different environments and pesticides.

EPA employed the same strength of evidence approach as was used in a workshop where a group of experts reviewed efficacy data for runoff and erosion mitigation measures for pesticides titled: *Mitigating the Risks of Plant Protection Products in the Environment. Proceedings of the MAgPIE Workshop (referred to as MAgPIE; Alix et al, 2017)*. The measures were scored as follows: + few scientific publications existing; ++ many scientific publications existing; and +++ abundant scientific publications existing. For the evaluation described in this document, EPA's default for a specific measure was to use the MAgPIE Workshop score unless additional literature is now available that the workshop did not consider. When a score for a measure was not available from MAgPIE, EPA relied on other studies and reviews, as available, and scored the strength of evidence relying on the number of studies as described in **Table 6-7**. EPA acknowledges that one study may cover multiple sites and another only a few sites and that the quality of the studies also influences the reliability of the study results. These factors all need to be considered when evaluating the reliability of a measure at reducing offsite transport. EPA may update the efficacy analysis as additional information related to the efficacy becomes available.

Table 6-7. Strength of Evidence Categories for Runoff/erosion Mitigation Measure Efficacy Score

Strength of Evidence Category	Criteria	# of Studies
+	Few scientific publications existing	1 – 10
++	Many scientific publications existing	>10-20
+++	Abundant scientific publications existing	>20

The number of studies/sites evaluated is one consideration for evaluating the efficacy of mitigation measures. The second main consideration is the percent reduction in offsite transport or percent reduction in exposure observed in available studies or from modeling (either conducted by EPA or results reported in a scientific publication). For a particular measure, EPA scored the efficacy of a measure as high, medium, or low. To do so, EPA used a combination of: 1) the efficacy based on the totality of the available data; and 2) the strength of evidence score as shown in **Table 6-8** below.

Table 6-8. Summary of Efficacy Rating for Runoff and Erosion Mitigation Measures

Mitigation Measure Efficacy Rating	Lines of Evidence Score, Average Percent Reduction from Field or Modeling
Low	+ , at least 10% on average reduction ++ or +++ , ~25% reduction
Medium	++ or +++ ; > 25 – 50% on average reduction
High	++ or +++ , ~50% or more average reduction

¹ For example, residues were measured downstream when rain did not occur and when irrigation management measures were not implemented.

In this effort, EPA considered targeted field data as well as model estimates when evaluating efficacy of mitigation measures and the percent reduction in exposure that could occur from a measure. EPA conducted modeling to evaluate the potential reduction in exposure for the 48-hour rain restriction, for defining areas less vulnerable to runoff and erosion, and to evaluate the vegetative filter strip efficacy. EPA also considered modeling assumptions for the field characteristics in the selection of efficacy category because the field characteristics are reflected in the exposure estimates. Due to the limitations of the model, sometimes modeling does not capture the reduction in offsite transport or exposure that may occur with a mitigation measure (see discussion in the **Technical Support for Mitigation**); however, the mitigation measure may still be effective in the field when considering targeted field study results. The target for incorporation of the mitigation measure on labels is whether the measure is likely to be effective at reducing offsite transport of pesticides, not whether the result would influence the ecological risk assessment results and exposure estimates.

As outlined in **Table 6-8**, EPA rated the efficacy of a measure as high when the strength of evidence score was +++ and 50% or greater reduction, on average, was observed or modeled. EPA rated the efficacy of measure as medium when the strength of evidence score was ++ and 25 to 50% reduction, on average, was observed or modeled. EPA rated the efficacy of a measure as low when the strength of evidence score was + and at least a 10% reduction, on average, was observed or when the strength of evidence was ++ or +++ and a 25% reduction, on average, was observed or modeled. In some cases, the data or information available did not fit into this

system, so EPA placed the measure in an efficacy category based on best professional judgement (see discussion in the **Technical Support for Mitigation**). When the literature indicated that a measure is efficacious, but this was not captured in modeling, EPA relied on the literature for the efficacy rating.

Although runoff and erosion often occur together, a distinction is necessary to understand how pesticide mitigation measures can be most effective. In the context of the discussion provided in this document, the term *runoff* will refer to water-only runoff, and the term *erosion* will refer to only the solid portion (*i.e.*, eroded solids, sediment, soil) that is picked up by the runoff and transported offsite. Pesticides with high sorption coefficients (*i.e.*, high K_d ²⁶ or K_{oc} ²⁷) will tend to attach to the eroded solids while those with lower sorption coefficients will tend to run off with water.

With the information on the efficacy of the various measures, EPA developed a runoff/erosion mitigation menu for the Strategy. EPA assigned points to the measure depending on the efficacy level for runoff prone pesticides:

- Low = 1 point
- Medium = 2 points
- High = 3 points

EPA acknowledges that as shown in the various literature studies, the actual percent reduction will be site and pesticide specific. In addition to the variability in the available efficacy data, EPA acknowledges that some of these mitigation measures (including saturation buffers and controlled drainage areas) may be overwhelmed by extreme weather events, lowering their efficacy. While the efficacy may be reduced in high rain events, these may not be frequent, depending on the site. Even when these large rainfall events occur, the frequency and duration of these higher runoff and erosion events will be reduced with these mitigation measures.

Table 6-9 lists the identified proposed mitigation measures for runoff and erosion pesticide transport for which EPA has efficacy data. Several of the proposed mitigation measures are similar in measure and efficacy, so EPA grouped them together. For example, since alley cropping, strip cropping, and inter-row vegetative filter strips (VFS) all have inter-row VFS, EPA included all of them in a measure titled in-field VFS. In other words, for this example, if the grower employed alley cropping, then they could not also claim credit for in-field VFS because they are all essentially the same measure, and EPA's current thinking is that a grower would only receive credit for in-field VFS once. This simplifies the mitigation menu terminology and provides a bridge to common terminology. EPA has brief descriptions of mitigation measures in the mitigation menu in the **Technical Support for Mitigation** with additional descriptions available in the November 2022 ESA Workplan Update (USEPA, 2022b). Updated descriptions and specifications are expected to be published in EPA decision documents for specific pesticides

²⁶ The K_d is the solid-water distribution coefficient where the solid is typically soil or sediment.

²⁷ The K_{oc} is the organic-carbon normalized solid-water distribution coefficient where the solid is typically soil or sediment.

starting in autumn of 2023. **Table 6-9** provides info on these groupings, the category of the mitigation, and points assigned. EPA recognizes that not all mitigations included on the menu will be able to be utilized by all growers due to differences in geography, crop production system, and whether they own or lease the land on which they farm. EPA has included all known run-off/erosion mitigations for which efficacy data is available in an effort to provide flexibility in the mitigation measures for the grower. EPA welcomes efficacy data on additional measures that they may be using that are not included here.

EPA acknowledges that the groupings of the mitigation measures can be confusing, particularly for VFS. Vegetative filter strips may occur in the field or adjacent to the field, and thus, they are listed under both the ‘in-field’ and ‘adjacent to the field’ categories. Additionally, in-field VFS can occur in contoured fields or in fields that are not planted with contours or sloped. The in-field VFS measure descriptions indicate that many of the measures may occur in flat fields or contoured fields and thus some measures occur in the contour field measure category and the in-field VFS without a contour field. EPA’s intent is not to confuse growers and EPA welcomes ideas on ways to simplify this information.

Table 6-9. Potential Mitigation Measures and Efficacy Points

Mitigation Menu Item ¹	Measures that qualify ²	Efficacy Points
Field Characteristics (one field may rely on multiple field characteristics if they are applicable)		
Application area is to the west of the Interstate-35 and east of U.S. Route 395 ³	Not applicable	1
Application area has predominantly sand, loamy sand, or sandy loam soil without a restrictive layer that impedes the movement of water through soil. See USDA’s Web Soil Survey tool to determine soil texture: https://websoilsurvey.nrcs.usda.gov/app/ .	Not applicable	1
The application area has a slope of less than 2%	Naturally low slope or flat fields/ Flat laser leveled	1
Application Parameters		
The maximum single application rate (lbs active ingredient/acre/application) allowed on the label for the specific crop is reduced or only a partial area in the acre is treated. Considered on a per application basis. The percent reduction is calculated as the applied lbs active ingredient applied per acre divided by the maximum single application rate in lbs active ingredient per acre allowed on the label for the crop and application equipment. If only a spot or portion of the field is treated, the reduction in the application over the entire field is considered in the calculation provided the field is draining to the same area. Follow all label requirements related to application rate including not making applications at a lower rate than the minimum required on the label to avoid resistance issues and to avoid no control of the weed/pest.	Reduced application rate, partial treatment of the field, banded application, spot treatment, precision agriculture or sprayers	Percent reduction = Applied application rate in lbs a.i./A divided by the maximum application rate allowed on the label for the crop in lbs a.i./A 90% reduction; 9 80% reduction; 8 70% reduction; 7 60% reduction; 6 50% reduction; 5 40% reduction; 4 30% reduction; 3 20% reduction; 2 10% reduction; 1

Mitigation Menu Item ¹	Measures that qualify ²	Efficacy Points
Soil incorporation within a few hours of application. If soil incorporation is required on the label for the crop where the application is being utilized, these points are not applicable.	Watering-in or via discing before runoff producing rain event	2
In-field Management Mitigation Measures⁴		
Contour farming	Contour farming, contour tillage	2
	Contour buffer strips, contour strip cropping, prairie strip, alley cropping	3
Cover crop/continuous cropping	Cover crop, double cropping, relay cropping	1
Grassed waterway	Grassed waterway	1
In-field vegetative filter strip (not occurring on a contoured field)	Inter-row vegetated strips, strip cropping, alley cropping, strip	3
Irrigation water management	Not applicable	1
Mulch amendment with natural materials	Mulching	3
Residue tillage management	No till, reduced till	2
Terrace farming	Terrace farming, terracing, field terracing	2
Adjacent to the Field⁴		
Riparian area	Riparian forest buffer, riparian herbaceous cover	3
Vegetated ditch	Vegetated ditch	1
30-foot Vegetative filter strips – adjacent to the field	Vegetated filter strip, field border, vegetative barrier	2
Other Mitigation Measures⁴		
Water retention systems	Constructed wetland, irrigation and drainage tailwater recovery, retention pond, sediment basins	2
Mitigation measures from multiple categories (<i>i.e.</i> , in-field, adjacent to the field, or water retention systems) are utilized ⁵	See options in categories above.	1

¹ Proposed mitigation measure descriptions specific to pesticides were published with the ESA Workplan update: *Nontarget Species Mitigation for Registration Review and Other FIFRA Actions* (USEPA, 2022b). These will be updated based on comments received on the workplan update. If the state law has a more restrictive requirement, that may be followed instead. Not all measures are applicable to all fields and crops. If a mitigation measure results in an increase in the amount of pesticides applied to the area, it is recommended that an alternative mitigation measure be selected.

² Only one of the ‘measures that qualify’ from a ‘mitigation menu item’ can be used for points at a time. For example, credit is given for contour farming or contour buffer strips but not both. Some of the measures that involve in-field VFS may occur in a contoured field or on a flat field without contours. The measure would only qualify for points once for the field.

³ See **Section 6.3** and **Appendix C** in the **Technical Support for Mitigation** document for additional details.

⁴ Voluntary programs implemented by the National Resource Conservation Service, and state programs help farmers with implementation of some of these mitigation measures. These programs are voluntary and not linked to label requirements. Participation in these programs may allow for exemptions from following the runoff/erosion mitigation menu or support the development of the mitigation measures. EPA is considering specifications for the programs such that if the program were followed, the reduction in runoff/erosion would be functionally equivalent to following the mitigation menu.

⁵ For example, if a grassed waterway an in-field mitigation measure and an adjacent to the field VFS are both utilized, the efficacy of the mitigation measures in combination may be increased and a point is provided when both are being utilized in the same field.

Table 6-10 summarizes exemptions from run-off/erosion mitigation requirements (does not apply to 48-hour rain requirement).

Table 6-10. Potential Exemptions from Needing to Follow the Mitigation Menu

Exemption	Justification.
Follow recommendations from Conservation Specialist or Certified Expert to Reduce Runoff/erosion ¹	Growers may work with an expert to develop mitigation plans that are designed for their field and are efficacious in reducing offsite transport of pesticides substantially. While conservation programs are not specifically designed for reduction of offsite transport of pesticides, the same types of measures used for reducing offsite transport of nutrients and erosion of soil from the field also reduce offsite transport of pesticides. Evaluating a field for ways to reduce nutrient runoff and erosion are likely to result in similar recommended measures as those in the proposed runoff/erosion mitigation menu. EPA is currently developing criteria where this option would be considered functionally equivalent to relying on the mitigation menu. EPA requests feedback on the types of experts, conservation programs, and appropriate criteria that could be relied upon to ensure that this is an effective measure, including for pesticides that need a high level of reduction of offsite transport to be protective of listed species. EPA will develop specific definitions and criteria for programs and experts based on feedback received on this exemption. Preliminarily, if the expert/conservation program evaluated a field for potential areas where runoff/erosion could occur and supported the grower in the development of those conservation practices in the field to reduce that offsite transport, those mitigations may be more likely to be effective and well maintained.
Field is more than 1000 feet away from a terrestrial or aquatic habitat for listed species	Off-site transport adjacent to the field is highest when the field is adjacent to the habitat for listed species. Maximum overland flow distances are commonly assumed to be near 1000 to 1200 feet in engineering handbooks (TXDOT, 2019; USDA, 2010; VADEQ, 1992) and 1000 feet is on the high-end of the overland flow distances observed for wetlands in the prairie pothole region (Wu and Lane, 2017).
Field has subsurface drainage or tile drains installed	If the field has subsurface drainage installed, the mitigation measures are not applicable. The subsurface must release the effluent (water) into controlled drainage (such as release into a retention pond) or saturation buffer ¹ zones that do not release water into downstream off-farm aquatic areas. Runoff from the entire field would need to be controlled and directed into a pond or saturation zone. ²

¹ A saturated buffer is a conservation measure designed to remove nitrate from agricultural tile water by modifying the outlet so that water is diverted to a vegetated filter strip.

Field data support modeling observations that aqueous runoff is highest when rainfall occurs near the application event (see **Technical Support for Mitigation** for details). **Table 6-11** summarizes rain restrictions that EPA has identified for most pesticides. The rain restrictions in this table are consistent with those proposed for FIFRA IEMs (See November 2022 [ESA Workplan](#)

[Update](#)) and reflect updated language based on input from the public comments received.²⁸ The 48-hour rain restriction may not be required when the restriction would limit the efficacy of a pesticide.

Table 6-11. Summary of Potential Restrictions Included on All Herbicide Labels

Restriction	Language on the Label
Rain Restrictions	Do not apply during rain.
48-hour restriction ¹	Do not apply when soil in the area to be treated is saturated (if there is standing water on the field or if water can be squeezed from soil) or if NOAA/National Weather Service predicts 50% chance or greater of a 1 or more inches of rainfall to occur within 48 hours following application. Detailed National Weather Service forecasts for local weather conditions may be obtained on-line at: http://www.nws.noaa.gov , on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office.

NOAA=National Oceanic and Atmospheric Administration

¹ The 48-hour rain restriction may not be required when the restriction would limit the efficacy of a pesticide.

EPA developed examples of combinations of runoff/erosion mitigation measures for different crops and different areas of the country that might be utilized. These are available in the document titled, “*Application of EPA’s Draft Herbicide Strategy Framework Through Scenarios that Represent Crop Production Systems*”. EPA acknowledges that some of these combinations of measures may be difficult for growers to implement and is open to recommendations to reduce the burden of implementing these mitigation measures while still adequately reducing exposure and the potential for population-level impacts to listed species. The consideration of possible offsets is discussed in **Section 9.4**.

6.3 Descriptions for Aquatic and Terrestrial Habitat for Listed Species that Can Be Included in Buffer Distances and Setbacks

Spray drift and runoff/erosion mitigation measures to reduce pesticide exposure to non-target species often include a buffer between the pesticide application and an adjacent area where listed species may occur (*i.e.*, habitat for listed species). Listed species occur in almost all types of terrestrial and aquatic habitats; however, they are less likely to occur in managed areas (*e.g.*, agricultural fields, buildings, roads, *etc.*). Therefore, for the purpose of identifying mitigations for listed species, EPA is including habitats as all areas within the species range or CH except managed areas. Managed areas may be included in the buffer because EPA has found that listed species are less likely to be in these areas. EPA will develop mitigation needs for the few listed plants (*e.g.*, Spring Creek bladderpod, *Lesquerella perforata*) that occur on the field in a separate effort, as on-field exposure was not part of the scope of the Strategy. EPA will work with the FWS to develop mitigations for species that commonly occur on agricultural fields when the programmatic consultation process is developed.

²⁸ The ESA Workplan Update, [comments](#), are available at <https://www.regulations.gov> under docket ID: EPA-HQ-OPP-2022-0908.

Below are area descriptions and example label language that could be used when either spray drift or runoff/erosion buffers would apply. If the buffer identified for terrestrial habitat for listed species is greater than the buffer identified for aquatic habitat for listed species, the buffer applies to both aquatic and terrestrial areas because the terrestrial area around the aquatic area would need a buffer. If only a buffer is identified for the aquatic habitat for listed species, or the aquatic habitat has a greater buffer identified than the terrestrial habitat buffer, that buffer only applies to the aquatic habitat.

Labels may describe crops or sensitive plants that may be damaged by the herbicide and specific restrictions to protect those non-target plant species. Follow label restrictions to prevent damage to sensitive crops or vegetation in a buffer.

EPA defines a field for this purpose as the areas where the crop is grown (including fallow land). Identified buffers would begin where the application ends and therefore may be in-field, adjacent to the field, or a combination of both. The immediate area within 10 feet of the field is often a disturbed area that is managed and may be considered part of any buffer. **Figure 6-1** illustrates a terrestrial buffer, in-field buffer, and an aquatic buffer where part of the buffer is in the field and part is not. In summary for spray drift, the buffer represents areas that are not directly treated with the pesticide. Terrestrial buffers for runoff and erosion need to meet the standards for that type of mitigation measure which often includes specific vegetation and vegetation maintenance. While buffers and some areas associated with mitigation or conservation measures may be attractive to species (as described in **Definition Box 7**), they are not considered habitat for listed species for general agricultural use patterns for the purposes of the Strategy.

Definition Box 7.

A **buffer** is the area between a pesticide application and a habitat for listed species. It can be in-field, off-field, or both.

A **habitat for listed species** is an area with characteristics consistent with listed species' habitats or that may provide habitat to non-target organisms. For the purposes of agricultural pesticides, areas that are managed (*e.g.*, agricultural fields, roads, *etc.*) are not considered a habitat for listed species for general agricultural use patterns.

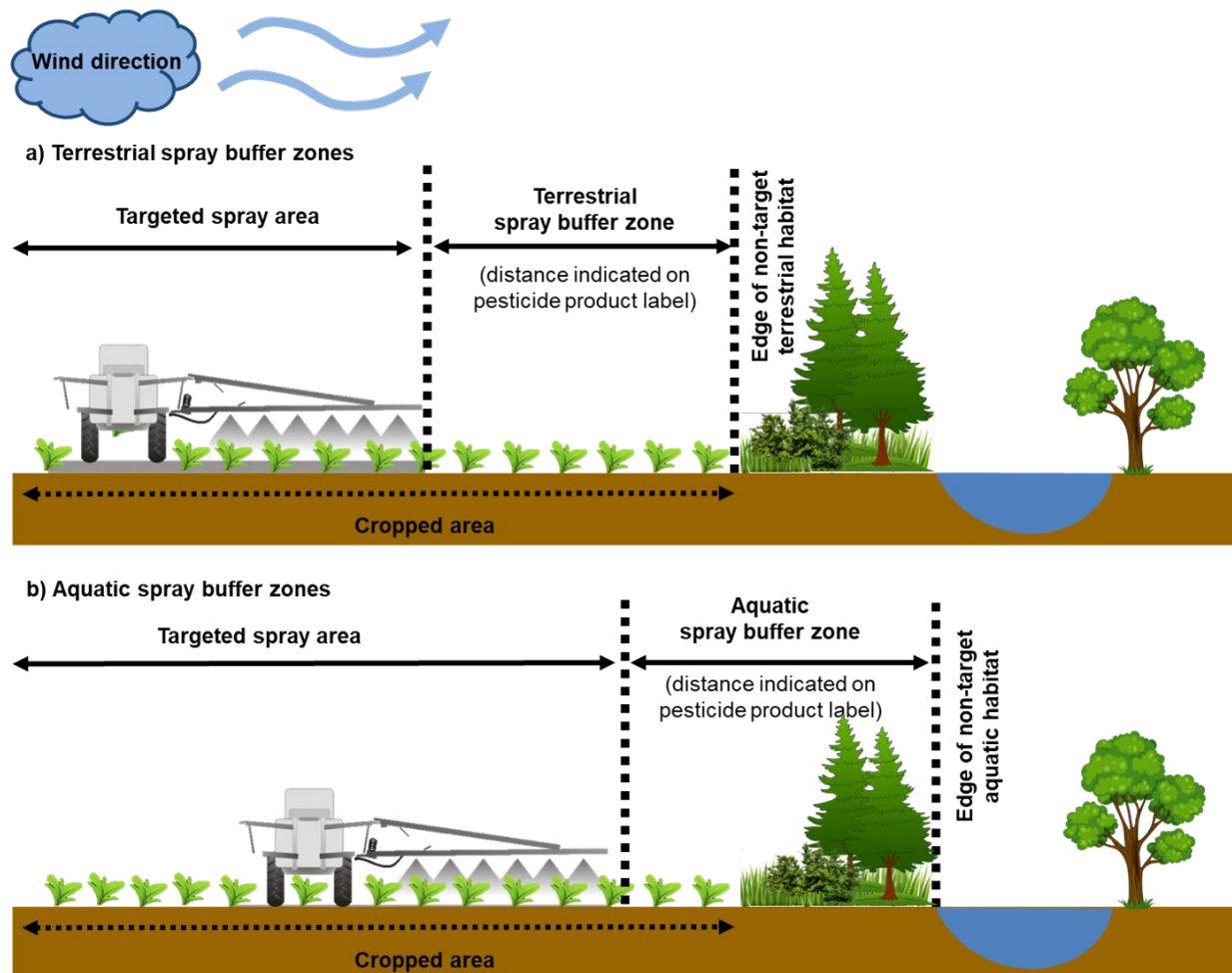


Figure 6-1. Diagram of the Field (Cropped Area) and Terrestrial and Aquatic Buffer Zones²⁹
The buffer would begin where the application ends and therefore may be an in-field buffer, adjacent to the field, or a combination of both. The immediate area within 10 feet of the field is often a disturbed area that is managed and may be considered part of any buffer.

The **Definition Box 7** provides a general definition of habitat for listed species. More specific definitions for terrestrial and aquatic sensitive areas are provided below.

The reason EPA includes areas associated with some mitigation measures as part of identified buffers is to avoid disincentives for growers to provide such habitats, which may have considerable benefits to species. EPA is focused on mitigation exposure off of the treated field for the Strategy.³⁰

²⁹ Terrestrial and aquatic spray drift buffer zones diagram reproduced with permission from the Pest Management Regulatory Agency of Health Canada (2020). Available at: <https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/growers-commercial-users/drift-mitigation/protecting-habitats-spray-drift.html>.

³⁰ Other areas not covered by the Strategy will be considered in other strategies or during consultation with the Services on the pesticide.

Description of Terrestrial Habitat for Listed Species

For all herbicide products that have been identified to have direct impacts to terrestrial listed plants or diet and habitat impacts to listed animals due to impacts to plants due to exposure in runoff, erosion, or spray drift.

Terrestrial habitat for listed species includes any terrestrial area except the following managed areas, which can be included as a mitigation buffer when they are not treated with the pesticide:

- a. Agricultural fields, including the treated field or adjacent fields;
- b. Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated area;
- c. Areas occupied by a building and its perimeter, silo, or other man-made structure with walls and/or roof;
- d. Areas maintained for runoff or drift control, such as vegetative filter strips, field borders, hedgerows, and other areas on the mitigation menu; and
- e. Conservation Reserve Program (CRP) and Agricultural Conservation Easement Program (ACEP) areas.³¹ CRP and ACEP areas may provide habitat to listed species, so movement of pesticides into these areas should be minimized.

Terrestrial habitat for listed species includes but is not limited to naturalized areas, parks, wildlife refuges, or wilderness areas and cannot be included in the buffer composition.

All of the habitat exceptions described above may be counted as part of a buffer between the treated field and adjacent habitat for listed species. While these areas are not considered habitat for listed species, vegetation in the buffer may be damaged by the use of herbicides in adjacent areas.

Description of Aquatic (including Wetlands) Habitat for Listed Species

For all products that have been identified to have direct impacts to listed wetland or aquatic listed plant species or diet and habitat impacts to animals due to impacts to plants due to exposure in runoff, erosion, or spray drift.

Aquatic habitat for listed species includes all aquatic areas except:

- a. On-farm contained irrigation water resources that are not connected to adjacent waters, including on-farm irrigation canals and managed irrigation/runoff retention basins;
- b. Vegetated ditches, drainage ditches; and

³¹ The Conservation Reserve Program (CRP) is a land conservation program administered by the Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Agricultural Conservation Easement Program (ACEP) supports long-term viability of productive farmland from being converted into non-agricultural areas.

- c. Managed wetlands including constructed wetlands on the farm. Wetlands may provide habitat to listed species and movement of pesticides into these areas should be minimized.

Aquatic habitat for listed species includes but is not limited to lakes, reservoirs, rivers, permanent streams, wetlands or ponds, and estuaries.

EPA acknowledges that some listed species may occupy areas that are not habitat for listed species in this Strategy. For example, the whorled sunflower (*Helianthus verticillatus*) is commonly found on agricultural fields (USFWS, 2023). EPA expects to address this situation with FWS when the agencies are in a consultation involving this listed species.

7 Detailed Explanation of Step 3: Identify Geographic Extent of Mitigation

For the Strategy, EPA may identify a combination of mitigation across the conterminous United States as well as identifying mitigation in specific geographic areas. This section describes how EPA identified when herbicide mitigations are identified throughout the lower 48 conterminous states versus when BLT would be used for geographic specific mitigation. This geographic framework is relevant to both runoff/erosion mitigation measures and spray drift mitigation measures; however, different geographic scales may be used for spray drift and runoff/erosion mitigations (for the same herbicide). Spray drift and runoff/erosion proposed mitigations are covered in further detail above in **Section 6**.

7.1 Identified Mitigation Measures proposed to be Implemented on General Labels

When EPA identifies mitigation that would cover the entire use area, EPA is proposing that such restrictions would be expected on the general label. In general, EPA expects mitigations would apply across the entire use site when diet and habitat population-level impacts are expected for listed animals that plants generally rely on.³² **Figure 7-1** presents the distribution of listed animal species that 1) are found in terrestrial environments and have a generalist relationship to terrestrial plants (**Figure 7-1a**), 2) are found in wetland environments and have a generalist relationship to wetland plants (**Figure 7-1b**) or are found in aquatic environments and have a generalist relationship to aquatic plants (**Figure 7-1c**). Listed generalist animals in terrestrial, wetland, and aquatic habitats are distributed across the United States (**Figure 7-1d**). For the Strategy, mitigation would likely apply throughout the conterminous US when there are concerns for population-level impacts for plants that could impact the diet and/or habitat of listed animal generalists in all of these environments. EPA proposes that implementation would include mitigations for animals on the general labels because they are distributed throughout the majority of the conterminous US. Spatially limited mitigations would not apply.

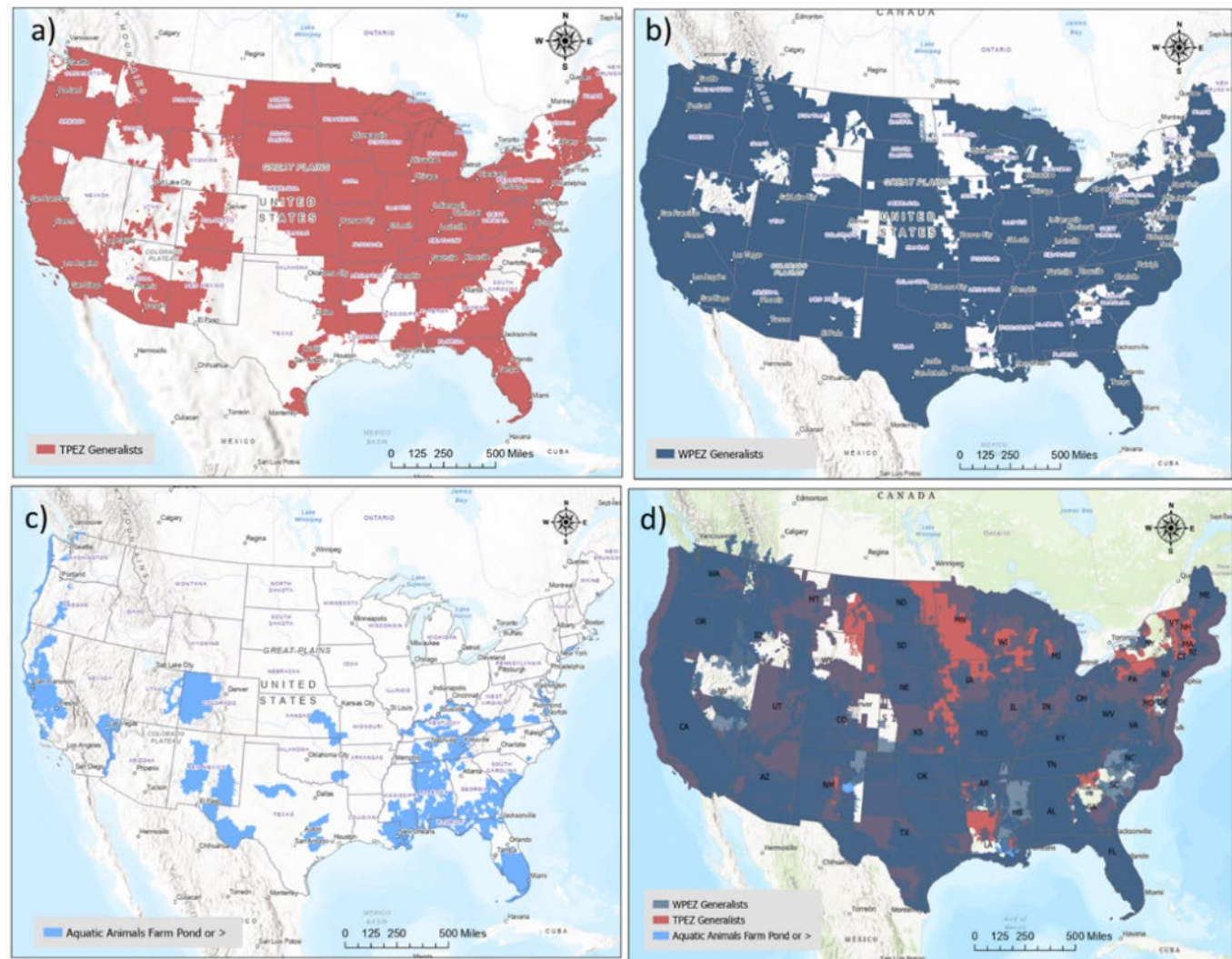
³² Generalist listed species do not have an obligate relationship to another species, whereas listed species that cannot survive and/or complete their life-cycle without the specific species are called obligates.

Figure 7-1. a) Terrestrial Generalists: Listed animals that generally rely on terrestrial plants (plus their CHs) and have $\geq 5\%$ overlap with the Cultivated Use Data Layer (UDL) plus 300 m. This list does not include fully aquatic species that are captured in the wetland generalists and/or aquatic animals lists.

b) Wetland Generalists: Listed animals that generally rely on wetland plants (plus their CHs) and have $\geq 5\%$ overlap with the Cultivated UDL plus 300 m. This list includes aquatic animals found in waterbodies smaller than the EPA farm pond.

c) Aquatic Generalists: Listed animals that rely on aquatic plants (plus their CHs), are found in waterbodies that are equivalent in size to the EPA farm pond or larger, and have $\geq 5\%$ overlap with the Cultivated UDL plus 300 m.

d) All Listed Animal Generalists



7.2 Identified Mitigations proposed to be implemented using Bulletins

7.2.1 Bulletins Live! Two and PULAs

As described earlier in **Section 4.3**, EPA usually prefers to provide directions for pesticide use directly on the general label. However, when pesticide use directions related to listed species include geographically specific requirements, EPA typically creates a bulletin that is made available to the public on the Bulletins Live! Two (BLT) website³³ to communicate these requirements. EPA references on the pesticide product labeling the need to access and follow bulletins on BLT. Doing so allows EPA to minimize complexity on labels, increase flexibility for growers, and limit the geographically specific listed species protections to only where they would apply. Bulletins typically include: 1) the geographic extent (referred to as the “pesticide use limitation area” or PULA) of the area where the same set of mitigations apply, and 2) a description of additional mitigations that apply to that geographic extent (referred to as “pesticide use limitations”). Under the Strategy, when the mitigation measures apply only to a limited geographic area for an herbicide use, the specific PULA representing that area would be identified. The spray drift and/or runoff/erosion mitigations described in **Section 6** would be incorporated into the bulletin to represent the pesticide use limitations.

As described earlier, the Strategy is focused on listed species under the jurisdiction of FWS. For the proposed Strategy, EPA used species-specific location information (species range and CH, if applicable) provided by FWS to establish proposed PULAs. In establishing PULAs, EPA’s default is to use the species’ ranges and CHs to identify protection areas. For the proposed Strategy, EPA used spatial data representing the listed species range and designated CH locations provided by the FWS as of February 16, 2022 (USFWS, 2022).³⁴ FWS has embarked on an effort to refine its species range maps and now has refined range maps for about half of the listed species under its jurisdiction. Additionally, for the consultation with FWS on malathion (USFWS 202210), species experts at FWS provided alternative, even more refined areas where protections are needed for select species. Recognizing the efforts FWS has been undertaking to refine species ranges and areas where protections are most needed for certain species, EPA’s current thinking is that it would update any PULAs developed for the final Strategy on a periodic and known basis (e.g., once per year in a given month), ensuring its geographic restrictions reflect the best available information not only today but into the future.

PULAs can represent the spatial extent of a single listed species range or designated CH, or can represent the combined ranges and designated CHs of multiple listed species. EPA develops PULAs with multiple species ranges/CHs when the locations all share the same pesticide use limitations (*i.e.*, mitigations). To efficiently and effectively implement mitigations for the Strategy, EPA is not proposing to develop single species PULAs and bulletins, but rather to

³³ Bulletins Live! Two can be accessed at: <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>

³⁴ For the final Strategy, EPA may use the most current information available in the FWS Environmental Conservation System (ECOS) range and CH available during that time.

produce bulletins that represent multiple species that have common taxonomy and habitats and thus need the same mitigations. EPA considered applying a more complex approach but chose a simpler approach in the interest of its available resources, achieving implementation more expeditiously, and having simpler and consistent mitigation instructions for all.

7.2.2 Grouped Species PULAs

Listed plants do not occur throughout the conterminous US (unlike listed animals discussed above). Therefore, when specific mitigations are identified for listed plants, bulletins are an effective approach to focus mitigations on areas where they are identified and limiting impacts on potential use sites where less or no mitigation is identified. For the Strategy, EPA is proposing to use an approach where listed plants are grouped by taxon (*e.g.*, dicots, monocots and obligates versus generalists) and habitat type (*e.g.*, terrestrial, wetland). This approach is proposed for calculating MoDs, identifying mitigations, and applying those mitigations for bulletins.

For the Strategy, EPA is proposing to use 4 grouped PULAs to represent the following categories of listed plants: monocots in wetlands and aquatic habitats; dicots in wetlands and aquatic habitats; monocots in terrestrial areas; and dicots in in terrestrial areas. Listed animals with obligate relationships to one of the above categories were also grouped into the PULAs (based on range and CH). EPA also grouped in the limited number of non-flowering plants with the monocot and dicot PULAs because EPA uses monocot and dicot toxicity data and associated MoDs as surrogates for the non-flowering plants. **Table 7-1** summarizes the four proposed PULAs. **Appendix C** includes additional information on these PULAs, including how they were derived and characterization of the extent of agricultural lands that overlap with the four PULAs. The document titled, “*List of Species in Each Grouped Species Pesticide Use Limitation Area*” includes the species ranges and CHs that were used to develop the 4 PULAs. **Figure 7-2** presents the spatial extents for the four proposed PULAs. EPA expects that the most up to date range and CH data would be utilized to develop these spatial extents when the Strategy would be implemented.

PULAs 1 and 2 include those listed plant species and listed animals with obligate relationships to plants that only occur in terrestrial habitats. PULAs 3 and 4 include listed plants that all occur in wetlands but may also occur in terrestrial or aquatic habitats. In Step 2, EPA identifies what mitigations are needed for terrestrial and wetland/aquatic habitats. For spray drift, mitigations are not expected to differ by the type of habitat. In cases where EPA identifies different mitigation for terrestrial and wetland/aquatic habitats, EPA would propose two sets of mitigations for PULAs 3 and 4—one set for terrestrial habitats and one for the wetland/aquatic habitats.

Table 7-1. Taxa and Habitat Associated Pesticide Use Limitation Areas (PULAs).

Group ¹ (includes species and their CHs)		Applicable Grouped Species PULA (Corresponding Figure)	Magnitude of Difference (MoD) ²
Listed Plants	Listed Animals		
Dicots in Terrestrial Habitats	Animals found in terrestrial environments that are obligately dependent on dicots	PULA 1 (Figure 7-2a)	TPEZ EEC/5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for dicots
Monocots in Terrestrial Habitats	Animals found in terrestrial environments that are obligately dependent on monocots	PULA 2 (Figure 7-2b)	TPEZ EEC/5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for monocots
Dicots in Wetland and Aquatic Habitats	Animals found in wetlands/aquatic habitats ³ that are obligately dependent on dicots	PULA 3 (Figure 7-2c)	WPEZ EEC/5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for dicots
Monocots in Wetland and Aquatic Habitats	Animals found in wetlands/aquatic habitats ³ that are obligately dependent on monocots	PULA 4 (Figure 7-2d)	WPEZ EEC/5 th percentile of SSD of IC ₂₅ or lowest IC ₂₅ for monocots
Non-Flowering Plants in Terrestrial Habitats	Animals found in terrestrial environments that are obligately dependent on non-flowering plants ⁴	PULAs 1 and 2 (Figure 7-2a and Figure 7-2b)	Highest MoD across monocots and dicots for direct effects in TPEZ
Lichens & Non-Flowering Plants in Wetland and Aquatic Habitats	Animals found in wetlands/small water bodies ³ that are obligately dependent on lichens or non-flowering plants	PULAs 3 and 4 (Figure 7-2c and Figure 7-2d)	Highest MoD across monocots and dicots for direct effects in WPEZ

EEC = estimated environmental concentration; SSD = Species Sensitivity Distribution; TPEZ = Terrestrial Plant Exposure Zone; WPEZ = Wetland Plant Exposure Zone; PULA = Pesticide Use Limitation Area; IC₂₅ = concentration resulting in 25% inhibition in growth; IC₅₀ = concentration resulting in 50% inhibition in growth

¹ The group assignment is determined based on the listed species taxon (plant or animal) and its habitat (terrestrial, wetland, small waterbodies, waterbodies equivalent to or larger than the farm pond). For listed plants, the plant group is also considered (monocot, dicot, non-flowering plant, lichen). For listed animals, the relationship to plants (obligate or generalist) is considered. These group assignments link the species to the endpoint used to calculate the MoD. The areas considered in the PULA reflect both the off-field range and designated critical habitat expanded to 300 m to account for offsite transport distances.

² The MoD determines whether a PULA is applicable for a specific herbicide. If the MoD indicates that there is potential for population-level impacts, then the PULA is applicable.

³ All of the listed species in PULAs 3 and 4 occur in wetland habitats. Some of these species also occur in varying types of aquatic habitats. Runoff/erosion mitigations applied to PULA 3 and 4 would be applied to wetland and aquatic habitats (see **Section 6.3** for habitat description), regardless of whether listed plants occur in aquatic habitats in specific portions of the PULA.

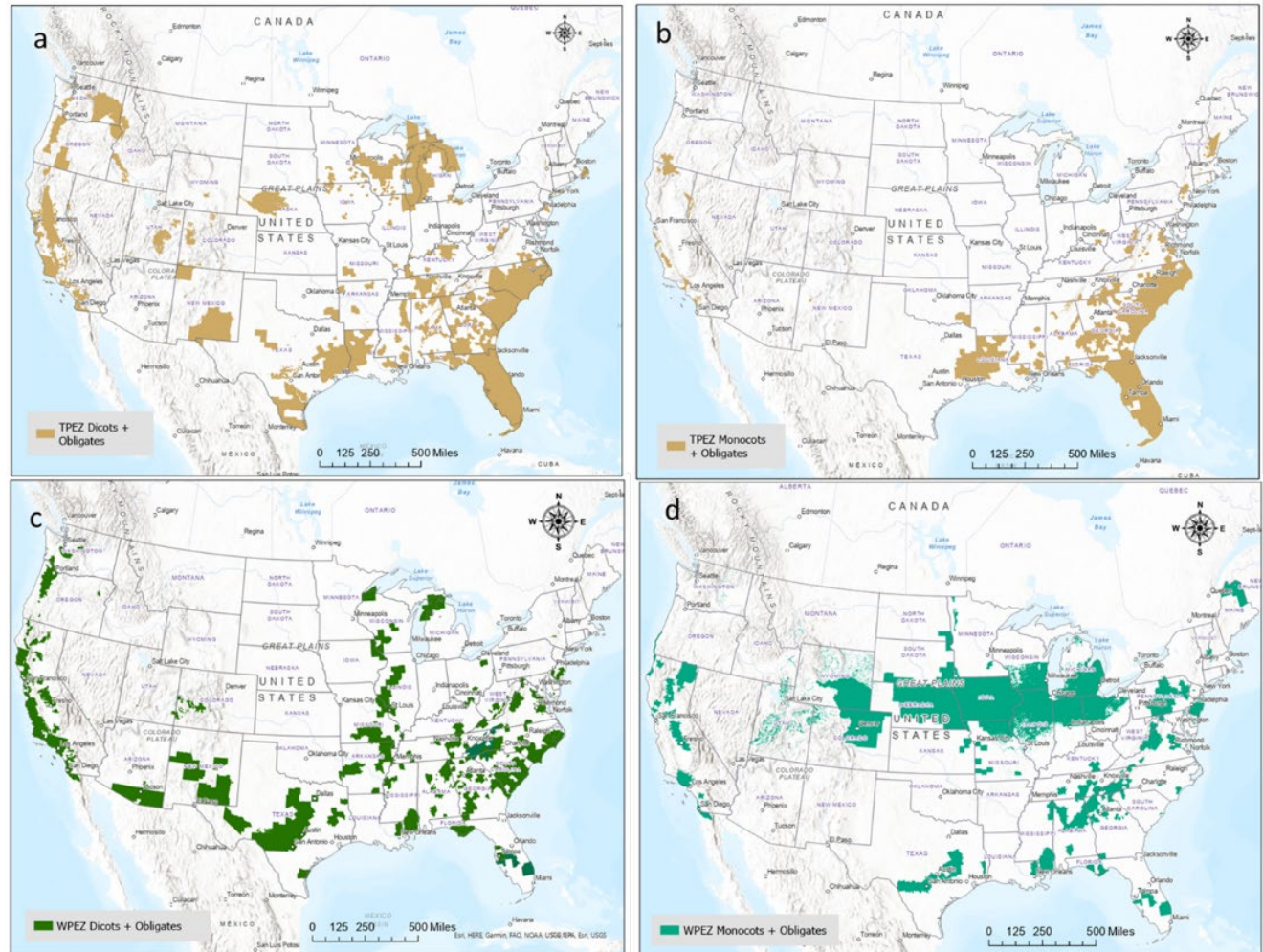
⁴ This is inclusive of animals that obligately depend on gymnosperms.

Figure 7-2. a) PULA 1: Listed dicots, non-flowering plants, and animals with an obligate relationship to these plants located in terrestrial habitats. All species and CHs have $\geq 5\%$ overlap at 300 m using the Cultivated Use Data Layer (UDL);

b) PULA 2: Listed monocots, non-flowering plants, and animals with an obligate relationship to these plants located in terrestrial habitats. All species and CHs have $\geq 5\%$ overlap at 300 m using the Cultivated UDL;

c) PULA 3: Listed dicots, non-flowering plants, lichens, and animals with an obligate relationship to these plants located in wetland and aquatic habitats. All species and CHs have with $\geq 5\%$ overlap at 300 m using the Cultivated UDL; and

d) PULA 4: Listed monocots, non-flowering plants, lichens, and animals with an obligate relationship to these plants located in wetland and aquatic habitats. All species and CHs have with $\geq 5\%$ overlap at 300 m using the Cultivated UDL.



8 Case Studies

8.1 Development of Case Studies

EPA conducted case studies of representative herbicides to evaluate and calibrate the proposed three step framework of the Strategy. EPA developed these case studies concurrently with the framework. EPA used an iterative process to develop the proposed framework by considering the different toxicity data and use patterns for the selected herbicides. EPA drafted an initial framework and set of mitigations and then applied and revised them based on the case studies. For the case studies, EPA selected conventional agricultural herbicides that differ by 1) modes of action (MOAs; e.g., photosystem inhibition, growth regulators, lipid peroxidation), 2) use patterns, 3) physical-chemical properties and 4) toxicities to plants. EPA conducted case studies for the following example herbicides:

1. 2,4-D and its salts and esters (referred to collectively as '2,4-D'),
2. dicamba and its salts (referred to collectively as 'dicamba'),
3. diuron,
4. MCPA (2-methyl-4-chlorophenoxyacetic acid) and its salts and esters (referred to collectively as 'MCPA'),
5. metolachlor and its isomer S-metolachlor (referred to collectively as 'metolachlor'),
6. metribuzin,
7. oxyfluorfen,
8. paraquat dichloride,
9. pendimethalin,
10. propanil,
11. thiobencarb, and
12. trifluralin.

The 12 chemical example case studies reflect the draft proposed framework that is presented in this document (**Sections 4-7**). Each case study includes two components. The first component is an application of the three-step process proposed for the Strategy. The second component is an analysis identifying specific listed species and CHs with potential population-level impacts.

The purpose of the first component of the case studies is to demonstrate how the draft framework would be applied to different herbicides and illustrate how herbicide specific information may influence the mitigations that are identified. In these analyses, EPA presents the three steps of the Strategy, including estimates of exposure, a summary of the toxicity endpoints used to calculate MoDs and identify the MoE, discussion of the level of mitigation needed for terrestrial and wetland/aquatic habitats, and identification of which spray drift and runoff/erosion mitigations would be proposed for the general label and for the four PULAs. For this analysis, EPA applied the framework that is described in **Sections 4-7** above. In some cases, EPA simplified the pesticide-specific information, including labeled use information, to concisely demonstrate the framework. The case studies are not intended to support a regulatory action for the specific herbicide active ingredients. **Section 8.2** below summarizes the mitigations that

are identified for each of the 12 herbicides when EPA applied the proposed herbicide framework.

In the second component of these example case studies, EPA identified potential listed species and CHs of listed plants and animals located in the 48 conterminous United States where there may be population-level impacts. The purpose of this analysis was to support future streamlined consultation with FWS. EPA's proposed Strategy relies upon a streamlined, taxon-based assessment to identify mitigations; however, EPA is providing species specific examples to connect the dots between the species groups and specific species that would receive similar proposed mitigations. To identify those species and CHs with potential population-level impacts, EPA adapted some elements of FWS's method used in the malathion biological opinion (USFWS, 2022); however, EPA did not fully address several aspects of the method that would be necessary to predict the likelihood of potential J/AM. For example, EPA considered the magnitude of effect and degree of overlap to identify these species and CHs, but EPA did not consider species vulnerability nor life history modifiers. The **Case Study Summary and Process** includes details on the method EPA used in these example case studies to identify specific species and CHs with potential population-level impacts prior to mitigation. Although EPA conducted this analysis to establish a starting point for consultation discussions with FWS, EPA anticipates it may revisit the analyses to incorporate other considerations important to FWS in future consultations.

8.2 Application of Proposed Three Step Framework to Identify Mitigations

8.2.1 Spray drift

For all 12 herbicides in the example case studies, EPA identified that spray drift mitigations for liquid spray applications to registered uses. EPA identified a variety of mitigation options for the general label to minimize exposure to plant communities upon which listed animals are dependent (generalists). These mitigations differ by single application rate, application method, and DSD. In some cases, EPA identified that the maximum buffer distances would apply for the general label (*e.g.*, for some application rates and methods) for some of the herbicides. For the majority of herbicides, EPA identified different spray drift mitigations for the general label and the PULAs. In those cases, EPA identified more restrictive spray drift mitigations (*i.e.*, larger buffers) for implementation through the PULAs to protect listed plants. This is because when EPA is able to generate an SSD, EPA uses a lower toxicity endpoint for listed plants and animals obligately relying on plants (5th percentile of the SSD) compared to the endpoint for generalist animals (25th percentile of the SSD).

For illustration purposes, **Table 8-1** and **Table 8-2** include the spray drift mitigations identified for metolachlor to be implemented on the general label or PULAs, respectively. For the general label (**Table 8-1**), spray drift buffers of 25 ft or less are proposed for aerial applications. A 20 ft buffer is identified for the highest rates when applied as a ground spray of very fine-fine droplets and a high boom. No mitigations are proposed for other ground spray applications.

Because exposure needs to be minimized further for listed plants and animals with obligate relationships to plants, larger spray drift buffers are identified for implementation through the four PULAs (**Table 8-2**). EPA is not identifying separate spray drift mitigations based on habitat type because the same toxicity endpoints and exposures are used to determine necessary mitigations for terrestrial and wetland habitats when evaluating deposition in lbs a.i./A and utilizing the terrestrial plant toxicity endpoints for monocots and dicots. For the case studies, drift buffers for terrestrial and wetland plants were larger than those needed to reduce impacts on listed aquatic animal habitats and diet. Therefore, the mitigations identified in **Table 8-2** would be implemented on all four PULAs.

Table 8-1. General label spray drift mitigations identified for metolachlor. Mitigations Related to Single Maximum Application Rate, Application Method and Droplet Size.¹

Single Maximum Application Rate (lb ai/A) ²	Identified Downwind Spray Drift Buffer Distances (ft)						
	Aerial Application			Ground Application			
	Fine-Medium	Medium-Coarse	Coarse-Very Coarse	Very Fine-Fine, High Boom	Very Fine-Fine, Low Boom	Fine-Medium/Coarse, High Boom	Fine-Medium/Coarse, Low Boom
2.67	25 ^a	20 ^a	20 ^a	20 ^b	None ³	None ³	None ³
1.9 – 2.0	10 ^a	None ³	None ³	None ³	None ³	None ³	None ³
1.0 – 1.2	None ³	None ³	None ³	None ³	None ³	None ³	None ³
Mitigation Measures the Pesticide Applicator can Elect to Reduce Buffer Distances ⁴	^a The applicator would achieve sufficient mitigation with a windbreak (release height below the top of the windbreak) alone without a buffer.			^b The applicator would achieve sufficient mitigation with a windbreak or hedgerow (release height below the top of the windbreak/hedgerow) or hooded sprayers alone without a buffer.			

¹ Very fine to fine droplets are not included for aerial applications because this droplet size is not typically used when applying herbicides aerially.

² Single maximum label rates reflect the range of uses for metolachlor.

³ EPA did not identify a spray drift buffer as a mitigation measure because the magnitude of difference is <10 at 10 ft off the treated field.

⁴ See **Section 6.1** for discussion of these mitigation measures.

Table 8-2. PULAs 1-4 spray drift mitigations identified for metolachlor. Mitigations Related to Single Maximum Application Rate, Application Method, and Droplet Size.¹

Single Maximum Application Rate (lb ai/A) ²	Identified Downwind Spray Drift Buffer Distances (ft)						
	Aerial Application			Ground Application			
	Fine-Medium	Medium-Coarse	Coarse-Very Coarse	Very Fine-Fine, High Boom	Very Fine-Fine, Low Boom	Fine-Medium/Coarse, High Boom	Fine-Medium/Coarse, Low Boom
2.67	300 ft + windbreak ₃	300 ft + windbreak ₃	200 ft + windbreak ₃	175 ^{e,g,h}	75 ^{g,h}	50 ^{g,h}	25 ⁱ
1.9 – 2.0	300 ft + windbreak ₃	250 ^{a,b,c}	175 ^{a,b,d}	125 ^{e,g,h}	50 ^{g,h}	25 ⁱ	20 ⁱ
1.0 – 1.2	300 ^{a,b,c}	175 ^{a,b,d}	125 ^{b,d}	75 ^{g,h}	50 ^{g,h}	20 ⁱ	10 ⁱ
Mitigation Measures the Pesticide Applicator can Elect to Reduce Buffer Distances ⁴	^a Buffers ≥175 ft could be reduced by 25 ft if crop height at application is ≥1 ft. ^b Windbreak (release height below top of windbreak) reduces buffer distance by half. ^c Buffers ≥250 ft could be reduced by 25 ft if relative humidity at application is >70% ^d Buffers 75-175 ft could be reduced by 25 ft if windspeed at application is 3-7 miles per hour			^e Buffers ≥100 ft could be reduced by 25 ft if relative humidity at application is >60% ^f Fine-Medium/Coarse-Low Boom buffers ≥75 ft could be reduced by 25 ft with coarse or coarser droplets ^g Windbreak/Hedgerow (release height below top of windbreak) reduces buffer distance by half ^h Hooded Sprayers reduce buffer distance by half ⁱ The applicator would achieve sufficient mitigation with a windbreak or hedgerow (release height below the top of the windbreak/hedgerow) or hooded sprayers alone without a buffer.			

¹Very fine to fine droplets are not included for aerial applications because this droplet size is not typically used when applying herbicides aerially.

²Single maximum label rates reflect the range of uses for metolachlor.

³Additional mitigation measures (e.g., windbreak, hedgerow) would apply for aerial applications at this rate using this droplet size because the magnitude of difference exceeds 10 at the maximum buffer distance. Use of these additional mitigation measures do not result in reduced buffer distances.

⁴See **Section 6.1** for discussion of these mitigation measures.

In other case studies (e.g., 2,4-D), EPA identified buffers for the general label that are protective for generalists and some of the listed species (e.g., listed monocots; and animals with an obligate relationship to monocots). **Table 8-3** includes the spray drift mitigations identified for 2,4-D for the general label. At higher application rates, EPA determined that the maximum buffer distances would apply. 2,4-D is more toxic to dicots compared to monocots, so the general label mitigations would also apply to monocots (as explained further in the 2,4-D case study) and PULAs 2 and 4 would not be needed. To further reduce exposures to listed dicots and animals with obligate relationships with dicots, greater spray drift mitigations would be implemented using PULAs 1 and 3 (**Table 8-4**). Spray drift mitigations identified for the other 10 herbicides are included in the chemical-specific case studies.

Table 8-3. General label spray drift mitigations identified for 2,4-D. Mitigations Related to Single Maximum Application Rate, Application Method, and Droplet Size.^{1,2}

Single Maximum Application Rate (lb ai/A) ³	Identified Downwind Spray Drift Buffer Distances (ft)						
	Aerial Application			Ground Application			
	Fine-Medium	Medium-Coarse	Coarse-Very Coarse	Very Fine-Fine, High Boom	Very Fine-Fine, Low Boom	Fine-Medium/Coarse, High Boom	Fine-Medium/Coarse, Low Boom
2.0	300 ^{a,b,c}	300 ^{a,b,c}	200 ^{a,b}	200 ^{f,g,h}	100 ^{f,g,h}	100 ^{f,g,h}	50 ^{g,h}
1.5	300 ^{a,b,c}	300 ^{a,b,c}	200 ^{a,b}	200 ^{f,g,h}	100 ^{f,g,h}	75 ^{g,h}	50 ^{g,h}
0.50	300 ^{a,b,c}	175 ^{a,b,d}	125 ^{b,d}	100 ^{f,g,h}	50 ^{g,h}	20 ⁱ	10 ⁱ
0.07	50 ^b	20 ^e	20 ^e	20 ⁱ	10 ⁱ	None ⁴	None ⁴
Mitigation Measures the Pesticide Applicator can Elect to Reduce Buffer Distances ⁵	^a Buffers ≥ 175 ft could be reduced by 25 ft if crop height at application is ≥ 1 ft. ^b Windbreak with a release height below top of windbreak reduces buffer distance by half. ^c Buffers ≥ 250 ft could be reduced by 25 ft if relative humidity at application is $>70\%$ ^d Buffers 75-175 ft could be reduced by 25 ft if windspeed at application is 3-7 miles per hour ^e The applicator would achieve sufficient mitigation with a windbreak (release height below the top of the windbreak) alone without a buffer.			^f Buffers ≥ 100 ft could be reduced by 25 ft if relative humidity at application is $>60\%$ ^g Windbreak/Hedgerow (release height below top of windbreak) reduces buffer distance by half ^h Hooded Sprayers reduce buffer distance by half ⁱ The applicator would achieve sufficient mitigation with a windbreak or hedgerow (release height below the top of the windbreak/hedgerow) or hooded sprayers alone without a buffer.			

¹ Very fine to fine droplets are not included for aerial applications because this droplet size is not typically used when applying herbicides aerially.

² EPA proposes to use the spray drift buffer distances in this table (based on the 25th percentile of the SSD) for listed monocots, animals obligately relying on monocots, and generalist animals.

³ Single maximum label rates reflect the range of uses for 2,4-D.

⁴ EPA did not identify a spray drift buffer as a mitigation measure because the magnitude of difference is ≤ 0.5 at 10 ft off the treated field.

⁵ See **Section 6.1** for discussion of these mitigation measures.

Table 8-4. PULAs 1 and 3 spray drift mitigations identified for 2,4-D. Mitigations Related to Single Maximum Application Rate, Application Method, and Droplet Size.¹

Single Maximum Application Rate (lb ae/A) ²	Identified Downwind Spray Drift Buffer Distances (ft)						
	Aerial Application			Ground Application			
	Fine-Medium	Medium-Coarse	Coarse-Very Coarse	Very Fine-Fine, High Boom	Very Fine-Fine, Low Boom	Fine-Medium/Coarse, High Boom	Fine-Medium/Coarse, Low Boom
2.0	300 + windbreak ³	300 ^{a,b,c}	200 ^{a,b}	200 ^{e,g,h}	100 ^{e,g,h}	100 ^{e,g,h}	100 ^{e,f,g,h}
1.5	300 + windbreak ³	300 ^{a,b,c}	200 ^{a,b}	200 ^{e,g,h}	100 ^{e,g,h}	100 ^{e,g,h}	100 ^{e,f,g,h}
0.50	300 ^{a,b,c}	300 ^{a,b,c}	200 ^{a,b}	200 ^{e,g,h}	100 ^{e,g,h}	100 ^{e,g,h}	50 ^{g,h}
0.07	175 ^{a,b,d}	125 ^{b,d}	75 ^{b,d}	50 ^{g,h}	20 ⁱ	10 ⁱ	10 ⁱ
Mitigation Measures the Pesticide Applicator can Elect to Reduce Buffer Distances ⁴	^a Buffers ≥175 ft could be reduced by 25 ft if crop height at application is ≥1 ft. ^b Windbreak (release height below top of windbreak) reduces buffer distance by half. ^c Buffers ≥250 ft could be reduced by 25 ft if relative humidity at application is >70% ^d Buffers 75-175 ft could be reduced by 25 ft if windspeed at application is 3-7 miles per hour.			^e Buffers ≥100 ft can be reduced by 25 ft if relative humidity at application is >60% ^f Fine-Medium/Coarse-Low Boom buffers ≥75 ft can be reduced by 25 ft with coarse or coarser droplets ^g Windbreak/Hedgerow (release height below top of windbreak) reduces buffer distance by half ^h Hooded Sprayers reduce buffer distance by half ⁱ The applicator would achieve sufficient mitigation with a windbreak or hedgerow (release height below the top of the windbreak/hedgerow) or hooded sprayers alone without a buffer.			

¹Very fine to fine droplets are not included for aerial applications because this droplet size is not typically used when applying herbicides aerially.

²Single maximum label rates reflect the range of uses for 2,4-D.

³Additional mitigation measures (e.g., windbreak, hedgerow) would apply for aerial applications of fine-medium droplets at application rates of 1.5 and 2.0 lb a.e./A because the magnitude of difference exceeds 10 at the maximum buffer distance. Use of additional mitigation measures do not result in reduced buffer distances.

⁴ See **Section 6.1** for discussion of these mitigation measures.

8.2.2 Runoff/Erosion

Mitigations identified to minimize runoff/erosion exposure varied by herbicide. Mitigations vary in two ways: first, whether and how mitigations are implemented using the general label and the four PULAs; second, the number of points assigned.

Table 8-5 summarizes how mitigations may be applied using the general label and PULAs (Step 3 of the framework). For four chemicals (diuron, metolachlor, oxyfluorfen and pendimethalin), different mitigations would apply for the general label and the PULAs. Also, mitigations differ by type of land (i.e., terrestrial and wetland/aquatic), but not by dicot/monocot taxonomy of plants. Therefore, four different sets of mitigation points would apply:

1. general label for terrestrial habitats,
2. general label for wetland/aquatic habitats,
3. PULAs 1 and 2 (terrestrial habitats) and
4. PULAs 3 and 4 (wetland/aquatic habitats).

Note that because PULAs 3 and 4 include terrestrial areas relevant to listed plants, the terrestrial habitat points for PULAs 1 and 2 would also be applied to PULAs 3 and 4. There are two example chemicals (MCPA and metribuzin) where separate mitigations are identified for generalists and listed plants; however, mitigations do not differ by habitat type. Therefore, only one set of runoff points would apply for the general label for all habitat types and a separate set of higher runoff points is needed for the four PULAs to be applied to all habitat types. For 2,4-D and dicamba, mitigations are identified for the general label to address impacts on listed animals and listed monocot plants. Dicots are more sensitive, so, higher points are identified for PULAs 1 and 3 to minimize exposure to listed dicots and animals that are obligate to dicots. There are four chemicals where PULAs would not apply for mitigations. No mitigations would apply for paraquat based on its physical, chemical and fate properties. For propanil and thiobencarb, which are only registered for use on rice, mitigations would only apply for wetland/aquatic habitats when rice fields do not include levees or berms. This mitigation would be applied using the general label.

Table 8-5. Implementation of runoff/erosion mitigations for case study chemicals through general label and PULAs.

Herbicide	PULAs Applicable?	Comments ¹
2,4-D	Yes	PULAs 1 and 3 because more mitigations identified for listed dicots
Dicamba	Yes	PULAs 1 and 3 because more mitigations identified for listed dicots
Diuron	Yes	PULAs 1 and 2 same mitigations would be applied for terrestrial habitats. PULAs 3 and 4 same mitigations would be applied for wetland/aquatic habitats.
MCPA	Yes	Same mitigations for all 4 PULAs because there is no difference between runoff/erosion mitigations based on habitat type.
Metolachlor	Yes	PULAs 1 and 2 same mitigations would be applied for terrestrial habitats. PULAs 3 and 4 same mitigations would be applied for wetland/aquatic habitats.
Metribuzin	Yes	PULAs 1 and 2 same mitigations would be applied for terrestrial habitats. PULAs 3 and 4 same mitigations would be applied for wetland/aquatic habitats.
Oxyfluorfen	Yes	PULAs 1 and 2 same mitigations would be applied for terrestrial habitats. PULAs 3 and 4 same mitigations would be applied for wetland/aquatic habitats.
Paraquat	No	No runoff/erosion mitigations identified
Pendimethalin	Yes	PULAs 1 and 2 same mitigations would be applied for terrestrial habitats. PULAs 3 and 4 same mitigations would be applied for wetland/aquatic habitats.
Propanil	No	Runoff/erosion mitigations only identified for wetland/aquatic habitats
Thiobencarb	No	Runoff/erosion mitigations only identified for wetland/aquatic habitats
Trifluralin	No	All mitigations indicated on general label

¹ When “same mitigations” are identified for PULAs, this is either due to similar potential for population-level impact to monocots and dicots.

For the same chemical, mitigation points sometimes varied by use. In general, when considering similar use patterns across chemicals, different numbers of points were identified by chemical, meaning that not all herbicides would need the same levels of mitigation. **Tables 8-6 through 8-11** include the runoff/erosion points identified for the case study herbicides. In this table, uses are grouped by the 13 Use Data Layers (UDLs) for convenience to allow for easy comparisons across chemicals and uses; however, on labels the uses would be specific to the use pattern. Of the 12 herbicides, diuron has the highest number of points identified, with 9 points needed for most uses on the general label and 9 or 9+³⁵ points needed for the four PULAs. Oxyfluorfen also tends to have higher points, ranging 5-7 (Oxyfluorfen has a Koc >1000, so fewer maximum points are needed). Other herbicides have fewer points identified for a similar use pattern and general label or PULAs. 2,4-D, dicamba, metolachlor and metribuzin most often need 6 points for uses implemented on the label, but sometimes need more points on the PULAs. MCPA, pendimethalin and trifluralin generally need fewer points, ranging 3-6 across uses, habitat type and general label versus. Both propanil and thiobencarb are registered for use on rice; however, propanil was identified as needing more points compared to thiobencarb. As indicated above, no runoff mitigation is needed for paraquat.

When conducting the analysis for the 12 case studies, EPA followed the three-step framework described above. EPA calculated MoDs for species and habitats according to **Table 5-1**. Because the wetland and aquatic lands are lumped into one category, EPA selected the MoDs and corresponding numbers of points for the most conservative combination of species and habitat. Often, EPA found that the number of points needed to minimize exposures to wetlands would be more than for aquatic habitats. For MCPA, trifluralin and dicamba, EPA found that mitigations would not apply for aquatic habitats, but would apply for wetland habitats. EPA recognizes that this may result in requiring mitigations in some areas where less mitigations may be needed. Therefore, in the future, EPA is considering creating separate sets of mitigations and habitat descriptions for aquatic and wetland habitats.

³⁵ Nine runoff/erosion mitigation points plus other mitigation measures are identified when the MoD is 1,000 or greater (**Table 4-3**).

Table 8-6. General Label: Runoff/erosion Points for Terrestrial Areas

UDL	2,4-D	Dicamba	Diuron	MCPA	Metolachlor	Metribuzin	Oxyfluorfen	Paraquat	Pendimethalin	Propanil	Thiobencarb	Trifluralin
Alfalfa	NA	NA	9	3	NA	6	NA	0	3	NA	NA	5
Citrus	3	NA	9	NA	NA	NA	5	0	3	NA	NA	5
Corn	6	6	6	NA	6	6	7	0	3	NA	NA	5
Cotton	NA	6	6	NA	6	NA	5	0	3	NA	NA	5
Grapes	3	NA	9	NA	NA	NA	7	0	5	NA	NA	5
Other Crops	NA	NA	NA	3	NA	6	NA	0	3	NA	NA	NA
Other Grains	6	3	6	3	1	6	NA	0	3	NA	NA	5
Other Orchards	6	NA	9	NA	NA	NA	5	0	3	NA	NA	5
Other Row Crops	6	NA	NA	NA	NA	NA	NA	0	3	NA	NA	5
Rice	NA	NA	NA	NA	NA	NA	NA	0	NA	0	0	NA
Soybeans	6	6	NA	NA	6	6	5	0	NA	NA	NA	5
VGF	6	6	6	3	6	6	5	0	3	NA	NA	5
Wheat	6	6	6	3	NA	6	NA	0	NA	NA	NA	5

UDL = use data layer

VGF = vegetables and ground fruit

NA = not applicable because herbicide is not registered for uses within this UDL.

Table 8-7. General Label: Runoff/erosion Points for Wetland and Aquatic Areas

UDL	2,4-D	Dicamba	Diuron	MCPA	Metolachlor	Metribuzin	Oxyfluorfen	Paraquat	Pendimethalin	Propanil	Thiobencarb	Trifluralin
Alfalfa	NA	NA	9	3	NA	6	NA	0	5	NA	NA	3
Citrus	3	NA	9	NA	NA	NA	7	0	3	NA	NA	3
Corn	6	6	6	NA	6	6	7	0	3	NA	NA	3
Cotton	NA	6	9	NA	6	NA	7	0	3	NA	NA	5
Grapes	3	NA	9	NA	NA	NA	7	0	5	NA	NA	3
Other Crops	NA	NA	NA	3	NA	6	NA	0	3	NA	NA	NA
Other Grains	6	3	9	3	6	6	NA	0	3	NA	NA	3
Other Orchards	6	NA	9	NA	NA	NA	7	0	3	NA	NA	3
Other Row Crops	6	NA	NA	NA	NA	NA	NA	0	3	NA	NA	3
Rice	NA	NA	NA	NA	NA	NA	NA	0	NA	9	5	NA
Soybeans	6	6	NA	NA	6	6	5	0	NA	NA	NA	3
VGF	6	6	9	3	6	6	5	0	3	NA	NA	3
Wheat	6	6	9	3	NA	6	NA	0	NA	NA	NA	3

PULA = Pesticide Use Limitation Area

UDL = use data layer

VGF = vegetables and ground fruit

NA = not applicable because herbicide is not registered for uses within this UDL.

Table 8-8. PULA 1: Runoff/erosion Points for Terrestrial Areas and Dicots

UDL	2,4-D	Dicamba	Diuron	MCPA	Metolachlor	Metribuzin	Oxyfluorfen	Paraquat	Pendimethalin	Propanil	Thiobencarb	Trifluralin
Alfalfa	NA	NA	9	3	NA	6	NA	General	5	NA	NA	General
Citrus	6	NA	9+	NA	NA	NA	7	General	5	NA	NA	General
Corn	6	9	9	NA	9	6	7	General	5	NA	NA	General
Cotton	NA	9	9	NA	9	NA	7	General	5	NA	NA	General
Grapes	6	NA	9+	NA	NA	NA	7	General	7	NA	NA	General
Other Crops	NA	NA	NA	3	NA	6	NA	General	5	NA	NA	NA
Other Grains	6	6	9	6	6	6	NA	General	5	NA	NA	General
Other Orchards	6	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Other Row Crops	6	NA	NA	NA	NA	NA	NA	General	5	NA	NA	General
Rice	NA	NA	NA	NA	NA	NA	NA	General	NA	General	General	NA
Soybeans	6	9	NA	NA	9	6	7	General	NA	NA	NA	General
VGF	6	9	9	3	9	6	5	General	5	NA	NA	General
Wheat	6	6	9	6	NA	6	NA	General	NA	NA	NA	General

PULA = Pesticide Use Limitation Area

UDL = use data layer

VGF = vegetables and ground fruit

NA = not applicable because herbicide is not registered for uses within this UDL.

General = no PULA needed, mitigations only needed on general label

Table 8-9. PULA 2: Runoff/erosion Points for Terrestrial Areas and Monocots

UDL	2,4-D	Dicamba	Diuron	MCPA	Metolachlor	Metribuzin	Oxyfluorfen	Paraquat	Pendimethalin	Propanil	Thiobencarb	Trifluralin
Alfalfa	NA	NA	9	3	NA	6	NA	General	5	NA	NA	General
Citrus	General	NA	9+	NA	NA	NA	7	General	5	NA	NA	General
Corn	General	General	9	NA	9	6	7	General	5	NA	NA	General
Cotton	NA	General	9	NA	9	NA	7	General	5	NA	NA	General
Grapes	General	NA	9+	NA	NA	NA	7	General	7	NA	NA	General
Other Crops	NA	NA	NA	3	NA	6	NA	General	5	NA	NA	NA
Other Grains	General	General	9	6	6	6	NA	General	5	NA	NA	General
Other Orchards	General	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Other Row Crops	General	NA	NA	NA	NA	NA	NA	General	5	NA	NA	General
Rice	NA	NA	NA	NA	NA	NA	NA	General	NA	General	General	NA
Soybeans	General	General	NA	NA	9	6	7	General	NA	NA	NA	General
VGF	General	General	9	3	9	6	5	General	5	NA	NA	General
Wheat	General	General	9	6	NA	6	NA	General	NA	NA	NA	General

PULA = Pesticide Use Limitation Area

UDL = use data layer

VGF = vegetables and ground fruit

NA = not applicable because herbicide is not registered for uses within this UDL.

General = no PULA needed, mitigations only needed on general label

Table 8-10. PULA 3: Runoff/erosion Points for Wetland/aquatic Areas and Dicots

UDL	2,4-D	Dicamba	Diuron	MCPA	Metolachlor	Metribuzin	Oxyfluorfen	Paraquat	Pendimethalin	Propanil	Thiobencarb	Trifluralin
Alfalfa	NA	NA	9	3	NA	6	NA	General	5	NA	NA	General
Citrus	6	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Corn	9	9	9	NA	9	6	7	General	5	NA	NA	General
Cotton	NA	9	9	NA	9	NA	7	General	5	NA	NA	General
Grapes	6	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Other Crops	NA	NA	NA	3	NA	6	NA	General	5	NA	NA	NA
Other Grains	6	6	9	6	9	6	NA	General	5	NA	NA	General
Other Orchards	6	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Other Row Crops	6	NA	NA	NA	NA	NA	NA	General	5	NA	NA	General
Rice	NA	NA	NA	NA	NA	NA	NA	General	NA	General	General	NA
Soybeans	6	9	NA	NA	9	6	7	General	NA	NA	NA	General
VGF	6	9	9	3	9	6	5	General	5	NA	NA	General
Wheat	6	6	9	6	NA	6	NA	General	NA	NA	NA	General

PULA = Pesticide Use Limitation Area

UDL = use data layer

VGF = vegetables and ground fruit

NA = not applicable because herbicide is not registered for uses within this UDL.

General = no PULA needed, mitigations only needed on general label

Table 8-11. PULA 4: Runoff/erosion Points for Wetland/aquatic Areas and Monocots

UDL	2,4-D	Dicamba	Diuron	MCPA	Metolachlor	Metribuzin	Oxyfluorfen	Paraquat	Pendimethalin	Propanil	Thiobencarb	Trifluralin
Alfalfa	NA	NA	9	3	NA	6	NA	General	5	NA	NA	General
Citrus	General	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Corn	General	General	9	NA	9	6	7	General	5	NA	NA	General
Cotton	NA	General	9	NA	9	NA	7	General	5	NA	NA	General
Grapes	General	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Other Crops	NA	NA	NA	3	NA	6	NA	General	5	NA	NA	NA
Other Grains	General	General	9	6	9	6	NA	General	5	NA	NA	General
Other Orchards	General	NA	9	NA	NA	NA	7	General	5	NA	NA	General
Other Row Crops	General	NA	NA	NA	NA	NA	NA	General	5	NA	NA	General
Rice	NA	NA	NA	NA	NA	NA	NA	General	NA	General	General	NA
Soybeans	General	General	NA	NA	9	6	7	General	NA	NA	NA	General
VGF	General	General	9	3	9	6	5	General	5	NA	NA	General
Wheat	General	General	9	6	NA	6	NA	General	NA	NA	NA	General

PULA = Pesticide Use Limitation Area

UDL = use data layer

VGF = vegetables and ground fruit

NA = not applicable because herbicide is not registered for uses within this UDL.

General = no PULA needed, mitigations only needed on general label

9 Implementation Plan

This section describes EPA’s current thinking as to how it may implement the Strategy through registration and registration review decisions. Additionally, EPA is considering ways to ensure that the mitigations can be employed effectively and expeditiously, as well as adding mitigation options as they become available. This could lead to providing more feasible options for growers and users. One option the Agency is considering is whether use of an EPA website to host the applicable mitigation measures would provide more flexibility and efficiencies to growers and users. EPA is considering whether including a website reference on labeling could avoid the need to amend hundreds to thousands of product labels, perhaps multiple times, if additional mitigation options become available over time. The resources EPA would need to amend such a large number of labels to include additional mitigation would not allow the Agency to complete this work in a timely fashion, leading to delays in expanding options to users and growers and differing mitigation requirements across herbicides until all herbicide labels have been reviewed for this purpose. EPA’s thinking on web labels is in the early stages, as EPA is investigating the utility of this approach to ensure that, as more data become available on existing measures and emerging technologies, EPA could efficiently add options for pesticide product users to meet any necessary mitigations. EPA expects that further public input could be necessary before employing a website as described below. This section also describes EPA’s current thinking as to how the Strategy interplays with FIFRA IEM and other ESA strategies (*e.g.*, the Vulnerable Species Project). Finally, this section describes how the Strategy may inform a future programmatic consultation with FWS.

9.1 Proposed Approach to incorporating Mitigation measures into Registration and Registration Review Decisions

EPA intends to begin implementing this Strategy once finalized. EPA is currently planning on finalizing the Strategy in early 2024. In addition to its standard FIFRA evaluations, when the EPA evaluates applications for new conventional herbicides or in its registration review processes for conventional herbicides that have agricultural uses, EPA will apply the final Strategy. Using the Strategy decision framework, EPA would apply needed mitigations to reduce herbicide exposures to the 900+ listed species covered by this Strategy.

In addition to the Strategy, EPA has also released in its ESA Workplan Update proposed FIFRA IEM that may be determined to be necessary in registration review decisions and registration actions. The proposed IEM was published for public comment from November 16, 2022 to February 14, 2023. EPA received comments from over 100 individual stakeholders and stakeholder groups as well as two mass mail campaigns for a total of over 7,700 public comment submissions. EPA is in the process of reviewing the comments received and updating the proposed mitigation measures. EPA considered the need to be consistent across the FIFRA IEM and Strategy mitigations to the extent appropriate, given that IEM must consider benefits as required under FIFRA and the Strategy cannot because it proposes measures to address ESA requirements. To that end, EPA expects to use the same runoff/erosion “mitigation menu” for

IEMs and the Strategy (and other ESA strategies) and is considering how the “mitigation menu” approach could work for other types of mitigation across strategies. There are differences between the IEMs and the Strategy related to the factors considered in determining the need, level, and extent of mitigations. For example, when considering whether mitigations are identified for conventional agricultural uses on herbicides, EPA expects that the level of mitigation in the final Strategy would supersede the IEM for those uses. Refining the example further, both the Strategy and IEM include mitigations for spray drift and runoff/erosion. For herbicides, EPA’s current thinking is that it would apply any spray drift and/or runoff/erosion requirements based on the Strategy instead of the IEM because the mitigations for the Strategy to protect listed species would be at least as stringent as mitigation identified under the IEMs for all non-target species. It is possible that other parts of IEM may be appropriate for herbicides. EPA plans to make clear in its regulatory decision documents which measures EPA considered appropriate for the herbicide and why, given the context of different yet overlapping efforts of IEM, the Herbicide Strategy, and other ESA strategies. For example, EPA expects to propose the other IEM label language not covered by the Strategy (*e.g.*, pollinator stewardship language, incident reporting language). As discussed in the November 2022 ESA Workplan Update (USEPA, 2022b) and in the Vulnerable Species Pilot (USEPA, 2023d), EPA has and continues to propose language on pesticide product labels that directs pesticide applicators to check the Bulletins Live Two! Website when mitigations may be implemented using bulletins (**Section 7**).

EPA acknowledges that it is not feasible to implement mitigations proposed in the Strategy on all herbicide products at the same time. As to registration review actions, the current workload includes hundreds of pesticide active ingredients, representing thousands of individual products. Taking into consideration the upcoming ESA strategies, EPA updated its registration review schedule on April 10, 2023³⁶ to align it with the strategies discussed in the ESA Workplan Update.³⁷ Several conventional herbicides in registration review are now scheduled for a proposed interim decision in calendar year 2024. The updated schedule is designed to align timing of review of herbicides with the timing of the final Strategy. This should result in better regulatory certainty as it relates to early mitigations for the protection of listed species and improve the efficiency and consistency in EPA’s registration review work. As ESA strategies are developed and finalized, EPA may determine that additional revisions are necessary to its current registration review schedule.

EPA also acknowledges that many growers use multiple herbicides on the same field at the same time. In this case, once EPA finalizes the Strategy, if a grower applies more than one herbicide that is subject to the Strategy at the same time to a field, then the grower would need to meet the most restrictive set of mitigations from the Strategy among the herbicides they plan to apply.

³⁶ <https://www.epa.gov/pesticides/epa-publishes-updated-registration-review-schedule>

³⁷ <https://www.epa.gov/pesticide-reevaluation/upcoming-registration-review-actions>

After the Strategy is finalized, as conventional herbicides with agricultural uses undergo Registration Review, EPA expects to propose applicable Strategy mitigation measures in its registration review process, including Proposed Interim Decisions (PID) and Proposed Final Decisions (PFD), depending on where an herbicide is in the Registration Review process. Through the public comment process established for these decisions, stakeholders will have this additional opportunity to comment on the incorporation of the Strategy measures in the registration review process for each herbicide. After comments are considered on the PID or PFD, EPA will determine what is appropriate for any Interim Decisions (ID) or Final Decisions (FD). As described in **Section 7**, EPA expects that once finalized with an ID or FD, the mitigations would be implemented through labeling statements as well as the use of bulletins, as appropriate. The use of a “menu” of mitigations should provide applicators the needed flexibility, while also providing protections for listed species.

For registration decisions outside of the registration review program, as indicated in the ESA Workplan, EPA plans to prioritize ESA analyses for new active ingredients proposed for registration. Once the Strategy is finalized and EPA has formalized the Strategy with FWS, then the Strategy would serve as the basis for initial registration applications for new herbicide active ingredients with agricultural use sites. EPA expects that this would greatly increase the efficiency of EPA’s ESA analyses and facilitate consultation. Until then, the proposed Strategy may serve as a tool to guide registrants and the EPA towards identifying mitigations that could be put into place on labels for currently registered herbicides prior to our BE and prior to entering formal consultation with the Services. EPA expects the Strategy to evolve from its draft form as we gain experience and get feedback from stakeholders. As EPA gains experience through implementation of the Strategy, EPA expects to consider how the Strategy may be applied to other registration actions.

9.2 Considerations for Future Additions and Updates on Mitigation Measures

EPA acknowledges that stakeholders may provide additional information on the proposed mitigations (*e.g.*, efficacy information for mitigation measures not yet on the menu) as well as information on other measures that the Agency may want to consider when determining whether revisions to the Strategy are necessary. EPA may become aware of information after the Strategy is finalized. To ensure that mitigation measures continue to be identified and updated as necessary, EPA realizes the need to provide ways to incorporate current and future emerging technologies in the mitigation menu as efficacy data become available. As such, EPA is considering ways to expand the proposed mitigation menus (once finalized) over time. Due to the limitations of EPA’s current labeling review process, the Agency would like to investigate ways to provide information on labeling that would allow for future updates, without the need to repeatedly request label amendments. One way to do this would be for applicants/registrants to include on pesticide product labeling the mitigation identified (as discussed with EPA during registration or registration review) along with a direction to access and follow additional information contained on an EPA website. EPA envisions the website could include the list of mitigation measures that could be used along with descriptions of how to implement those measures. The product label could include the extent of mitigation

measures necessary (e.g., mitigation points) along with the current list of mitigation measures and a reference to the EPA website that could be updated with additional mitigation measures that would be allowed to meet the amount of mitigation needed. In this way, users would have the same options in terms of mitigation measures regardless of when any individual herbicide undergoes registration or re-evaluation in registration review. Keeping mitigations up to date on a website rather than including the mitigations on labels would provide growers and pesticide applicators with the certainty that their investment in one mitigation measure would receive credit for any herbicide they need to apply (even if their mitigation measures are added to the menu later in time). This also creates more consistency across the pesticide marketplace, which is a common concern among pesticide registrants. EPA looks forward to input on this idea as well as other options to provide certainty and flexibility to use future technologies.

Similarly, EPA is currently developing two other ESA efforts that would apply to herbicides as well as other conventional pesticides. The first is EPA's Vulnerable Species Pilot (VSP) where EPA has drafted proposed mitigations for 27 highly vulnerable, limited-range listed species. In June 2023, EPA released its proposed mitigation measures for the VSP.³⁸ Once EPA finalizes the Strategy, if a grower is located in an area where mitigations identified in the pilot and the Strategy are necessary, EPA would apply the more restrictive set of mitigations (which would likely be the vulnerable species mitigations because they are intended to have the maximum set of spray drift and runoff/erosion mitigations that may be used for the Strategy, and thus offer the most progress toward full ESA compliance).

9.3 Decision support tools and training

EPA intends for the mitigation menus proposed in the Strategy to provide flexibility to applicators and growers so that they may choose mitigation measures that suit their circumstances. As a result, applicators and growers would have multiple options when deciding what mitigation measures to apply. Similarly, when growers have choices between different herbicides and/or may apply more than one herbicide, they may need to evaluate the different mitigation measures necessary across those herbicides. EPA welcomes feedback and engagement on decision support tools and training that stakeholders would find helpful when deciding among multiple mitigation options across a variety of crop uses and herbicide products.

9.4 Future Consideration of Offsets

To meet ESA obligations, federal agencies often use offsets (also known as compensatory mitigation) to address the effects of their actions that cannot be avoided or minimized. FWS defines offsets as measures to *"compensate for remaining unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied, by replacing or providing substitute resources or environments...through the restoration,*

³⁸ <https://www.regulations.gov/docket/EPA-HQ-OPP-2023-0327>

establishment, enhancement, or preservation of resources....” (USFWS, 2016). Offsets can include actions such as habitat preservation or restoration, invasive species control, and species reintroductions. These actions can directly further species recovery (sometimes more than on-site avoidance and minimization) and can provide even greater flexibility by creating more options for EPA to meet its ESA obligations.

As described in the April 2022 ESA Workplan (USEPA, 2022a) and the November 2022 ESA Workplan Update (USEPA, 2022b), EPA plans to identify opportunities for offsets to complement traditional FIFRA avoidance and minimization measures for ESA species. The Agency will do so through a multi-step process that includes working with the Services to develop general guidance on using offsets for pesticide consultations, working with registrants to identify and adopt offsets for specific pesticides and species, ensuring that adopted offsets are legally binding as a condition of a FIFRA registration, and working with the Services to oversee implementation of offsets. EPA continues to welcome proposals to incorporate offsets into pesticide consultations. Any registration or registration review action that includes offsets will need to follow the Services’ offset policies, particularly the mitigation hierarchy of first avoiding impacts, then minimizing, and finally offsetting.

9.5 Future consultation with the Services

One of the goals of the Strategy is to help increase the efficiency of the pesticide consultation process by creating an important component of a programmatic consultation, or other streamlining process, that is potentially larger in scope than just the Strategy. Programmatic consultation is defined in the Services’ ESA regulations as “*consultation addressing an agency’s multiple actions on a program, region, or other basis expected to be implemented in particular geographic areas* (50 CFR § 402.02). EPA is also considering other options such as using its overall EPA strategy as outlined in the Workplan (and Update) to develop a conservation plan that outlines EPA’s overall strategy for working with FWS to protect listed species from pesticides and to streamline the consultation process on specific actions. The EPA’s Strategy is an opportunity for EPA and FWS to consider the potentially significant contribution to consultation efficiency the Strategy could provide because there are over 400 listed plants in the lower 48 states that are under the authority of FWS. In addition, FWS has authority of over 500 listed animals and over 300 CHs located in the lower 48 states that may be impacted by effects to plants. By providing mitigation measures, through the Strategy, designed to address the main taxa affected by herbicides (plants), existing and future consultations on herbicides would be much more efficient.

The EPA and FWS have been collaborating on developing the Strategy. EPA and FWS plan to develop a programmatic consultation, or other streamlining process, for pesticides, of which the evaluation of herbicides using the Strategy will be a part. This includes the more efficient approach to determine the need for, the level of, and geographic extent of early mitigations for listed species from agricultural uses of conventional herbicides described in the proposed Strategy. As part of any consultation, EPA and FWS can also consider how the mitigation measures may help minimize potential for J/AM and take of listed animals. EPA envisions that any programmatic consultation or other streamlining process would consider as part of the

action the outcomes of the Strategy. In turn, as EPA develops future BEs, implementation of the Strategy should result in fewer resources for ESA compliance. By incorporating mitigation measures directly into EPA's actions prior to consultation, the mitigation needs for these species would already be partly or fully addressed prior to any future consultation for an agricultural herbicide. For future herbicide BEs and consultations, EPA and FWS could then focus on potential effects not addressed in this Strategy (e.g., effects to animals on the treated field or newly listed species, and non-agricultural uses).

The National Marine Fisheries Service (NMFS) and EPA are currently working separately on developing a programmatic process for conventional pesticides. Therefore, species under the purview of NMFS were not included in the Strategy. The Strategy may inform programmatic consultation with NMFS.

10 Conclusions and Next Steps

EPA developed the proposed Herbicide Strategy to identify and implement early protections for listed species (before EPA has made effects determinations or completed consultation, if necessary) and to increase the efficiency of future effects determinations, and consultations with FWS for herbicides in the lower 48 states with agricultural uses. In turn, this should also create efficiencies in pesticide registration and registration review actions.

In particular, the Strategy is designed to reduce exposure to listed plants (and listed species that depend on plants) from spray drift and run-off/erosion. The Strategy reflects a more efficient analytical approach – one based on analyses EPA generally already performs to estimate exposure and assess impacts of a pesticide – to determine the need, level, and extent of mitigations for a particular herbicide to protect the listed species covered by the Strategy.

EPA is soliciting public comments on this proposed Strategy. After considering public comment, EPA plans to finalize it in early 2024.

11 Literature Cited

- Alix, A., Brown, C., Capri, E., Goerlitz, G., Golla, B., Knauer, K., et al. 2017. *Society of Environmental Toxicology and Chemistry. Mitigating the Risks of Plant Protection Products in the Environment. Proceedings of the MAgPIE Workshop*. Available at: <https://www.spraydriftmitigation.info/mitigation-toolbox>.
- FOCUS. 2007. *Landscape and Mitigation Factors in Aquatic Risk Assessment. Volume 1: Extended Summary and Recommendations. Version 2*. EC Document Reference SANCO/10422/2005. September 2007. Report of the FOCUS Working Group on landscape and mitigation factors in ecological risk assessment. Available at: <https://esdac.jrc.ec.europa.eu/projects/focus-landscape-mitigation>.
- Reichenberger, S., Bach, M., Skitschak, A., & Frede, H.-G. 2007. Mitigation strategies to reduce pesticide inputs into ground- and surface water and their effectiveness; A review. *Science of The Total Environment*, 384(1), 1-35.

- TXDOT. 2019. *Section 11 Time of Concentration, Hydraulic Design Manual*: Texas Department of Transportation (TXDOT). Available at: http://onlinemanuals.txdot.gov/txdotmanuals/hyd/time_of_concentration.htm.
- USDA. 2010. Chapter 15 Time of Concentration. In *Part 630 Hydrology National Engineering Handbook* U.S. Department of Agriculture. National Resource Conservation Service. Available at: <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=27002.wba>.
- USEPA. 1998a. *Guidelines for Ecological Risk Assessment*. EPA/630/R-95/002F. Risk Assessment Forum. Office of Research and Development. U.S. Environmental Protection Agency. Available at: <http://www.epa.gov/raf/publications/guidelines-ecological-risk-assessment.htm>.
- USEPA. 1998b. *Guidelines for Ecological Risk Assessment, United States Environmental Protection Agency (USEPA)*. Washington, D.C.: Government Printing Office. Available at: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=12460>.
- USEPA. 2004. *Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs*. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs.
- USEPA. 2008. *Fate, Transport, and Transformation Guidelines. OPPTS 835.1230 Adsorption/Desorption (Batch Equilibrium)*. EPA 712-C-08-009. October 2008. U.S. Environmental Protection Agency. Office of Prevention, Pesticides, and Toxic Substances. Available at: http://www.epa.gov/ocspp/pubs/frs/publications/Test_Guidelines/series835.htm.
- USEPA. 2012a. *Ecological Effects Test Guidelines. OCSPP 850.4150: Vegetative Vigor*. EPA 712-C-011. January 2012. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Available at: <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPPT-2009-0154-0024>.
- USEPA. 2012b. *Ecological Effects Test Guidelines. OCSPP 850.4500: Algal Toxicity*. EPA 712-C-006. January 2012. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Available at: <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPPT-2009-0154-0003>.
- USEPA. 2012c. *Ecological Effects Test Guidelines. OCSPP 850.4550 Cyanobacteria (Anabeana flos-aquae) Toxicity*. EPA 712-C-005. January 2012. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Available at: <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPPT-2009-0154-0004>.
- USEPA. 2013. *Guidance on Modeling Offsite Deposition of Pesticides Via Spray Drift for Ecological and Drinking Water Assessment*. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. Environmental Fate and Effects Division.
- USEPA. 2017. *Pesticide Industry Sales and Usage 2008 - 2012 Market Estimates*. U.S. Environmental Protection Agency. Office of Pesticide Programs. Biological and Economic Analysis Division. Available at: https://www.epa.gov/sites/default/files/2017-01/documents/pesticides-industry-sales-usage-2016_0.pdf.
- USEPA. 2018. *Guidance for Using ECOSAR as a Line of Evidence for Identifying Residues of Toxicological Concern*. September 26, 2018. U.S. Environmental Protection Agency.

- Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. Environmental Fate and Effects Division. Available at: <https://www.epa.gov/system/files/documents/2022-06/Procedure-for-using-ECOSAR-as-a-%20Line-of-Evidence.pdf>.
- USEPA. 2019. *Methods for Assessing Aquatic Exposure to Residue(s) of Concern*. June 20, 2019. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. Environmental Fate and Effects Division.
- USEPA. 2020. *Revised Method for National Level Listed Species Biological Evaluations of Conventional Pesticides*. March 12, 2020. Environmental Fate and Effects Division. Office of Pesticide Programs. U.S. Environmental Protection Agency. Available at: <https://www.epa.gov/endangered-species/revised-method-national-level-listed-species-biological-evaluations-conventional>.
- USEPA. 2022a. *Balancing Wildlife Protection and Responsible Pesticide Use: How EPA's Pesticide Program Will Meet its Endangered Species Act Obligations*. April 2022. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. . Available at: https://www.epa.gov/system/files/documents/2022-04/balancing-wildlife-protection-and-responsible-pesticide-use_final.pdf.
- USEPA. 2022b. *ESA Workplan Update: Nontarget Species Mitigation for Registration Review and Other FIFRA Actions*. Docket ID EPA-HQ-OPP-2022-0908. November 2022. United States Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. Available at: <https://www.epa.gov/system/files/documents/2022-11/esa-workplan-update.pdf>.
- USEPA. 2023a. *Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation to Protect Non-Target Plants and Wildlife*. Docket ID EPA-HQ-OPP-2023-0327-0003. June 22, 2023. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. Available at: <https://www.regulations.gov/document/EPA-HQ-OPP-2023-0327-0003>.
- USEPA. 2023b. *Pesticide in Water Calculator User Manual for Versions 2.001*. United States Environmental Protection Agency. Office of Pesticide Programs. Environmental Fate and Effects Division. Available at: <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/models-pesticide-risk-assessment>.
- USEPA. 2023c. *Plant Assessment Tool Version 2.7.1*. Washington, D.C. Available at: <https://www.epa.gov/endangered-species/provisional-models-and-tools-used-epas-pesticide-endangered-species-biological>.
- USEPA. 2023d. *Vulnerable Listed (Endangered and Threatened) Species Pilot Project: Proposed Mitigations, Implementation Plan, and Possible Expansion: Draft Plan*. Docket ID EPA-HQ-OPP-2023-0327-0002. June 2023. U.S. Environmental Protection Agency. Office of Chemical Safety and Pollution Prevention. Office of Pesticide Programs. Available at: <https://www.regulations.gov/document/EPA-HQ-OPP-2023-0327-0002>.
- USFWS. 2016. Endangered and Threatened Wildlife and Plants: Endangered Species Act Compensatory Mitigation Policy. *Federal Register* Volume 81. Number 248. Pages 95316. December 27, 2016.

- USFWS. 2021. *Draft Biological and Conference Opinion on the Registration of Malathion Pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act*. February 2021. U.S. Fish and Wildlife Service Available at: <https://www.epa.gov/endangered-species/biological-opinions-available-public-comment-and-links-final-opinions>.
- USFWS. 2022a. *Biological and Conference Opinion on the Registration of Malathion Pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act*. February 28, 2022. U.S. Fish and Wildlife Service. Ecological Services Program. Available at: <https://www.epa.gov/endangered-species/biological-opinions-available-public-comment-and-links-final-opinions>.
- USFWS. 2022b. *Final Biological and Conference Opinion on the Registration of Malathion Pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act*. February 28, 2022. U.S. Fish and Wildlife Service. Ecological Services Program. Available at: <https://fws.gov/media/biological-and-conference-opinion-registration-malathion>.
- USFWS. 2023. *Environmental Conservation Online System (ECOS)*. United States Fish and Wildlife Service. Available at: <https://ecos.fws.gov/ecp/>.
- VADEQ. 1992. Chapter 5 Engineering Calculations. In *Virginia Erosion and Sediment Control Handbook. Third Edition*. Richmond, VA: Virginia Department of Environmental Quality (VADEQ). Available at: <https://www.deq.virginia.gov/water/stormwater/stormwater-construction/handbooks>.
- Wu, Q., & Lane, C. R. 2017. Delineating wetland catchments and modeling hydrologic connectivity using lidar data and aerial imagery. *Hydrological Earth System Science*, 21(7), 3579-3595.
- Yuan, Y., Book, R. S., Mankin, K. R., Koropecjy-Cox, L., Christianson, L., Messer, T., et al. 2022. An overview of the effectiveness of agricultural conservation practices for water quality improvement. *Journal of American Society of Agricultural and Biological Engineers*, 65(2), 419-426.

12 Abbreviations and Nomenclature

a.e.	acid equivalents
ACEP	Agricultural Conservation Easement Program
APEZ	Aquatic Plant Exposure Zone
BE	Biological Evaluation
BiOp	Biological Opinion
BLT	EPA's Bulletins Live! Two website
CFR	Code of Federal Regulations
CH	designated critical habitat
CRP	Conservation Reserve Program
DSD	Droplet size distribution
ECOS	FWS Environmental Conservation System
EEC	Estimated Environmental Concentration
EFED	Environmental Fate and Effects Division
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FD	Final Decision
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
ft	feet
FWS	United States Fish and Wildlife Service
GIS	Geographic Information System
ha	hectare
HUC	Hydrologic Unit Code
IEM	Interim Ecological Mitigations
in	inch
ID	Interim Decision
J/AM	Jeopardy to the continued existence of a species or adverse modification to a designated critical habitat
K_d	solid-water distribution coefficient where the solid is soil or sediment
K_{oc}	organic-carbon normalized solid-water distribution coefficient where the solid is soil or sediment
lb	pound
m	meters
MAGPIE	Model of Agricultural Production and its Impact on the Environment
MCPA	2-methyl-4-chlorophenoxyacetic acid) and its salts and esters
MOA	Mode of Action
MoD	Magnitude of Difference/ratio of exposure estimate to population level toxicity endpoint
MoE	Magnitude of Effect
mph	miles per hour
NASS	National Agricultural Statistics Service
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	National Resource Conservation Service
°F	degrees Fahrenheit

OPP	Office of Pesticide Programs
PAT	Plant Assessment Tool
PBF	Physical and Biological Features
PFAM	Pesticide in Flooded Applications Model
PFD	Proposed Final Decision
PID	Proposed Interim Decision
PULA	Pesticide Use Limitation Area
PWC	Pesticide in Water Calculator
RH	Relative Humidity
RQ	Risk Quotient
SSD	Species Sensitivity Distribution
TPEZ	Terrestrial Plant Exposure Zone
U.S.	United States
UDL	Use Data Layer
USDA	United States Department of Agriculture
USEPA/ EPA	U.S. Environmental Protection Agency
VFS	vegetative filter strip
VSP	Vulnerable Species Pilot
WPEZ	Wetland Plant Exposure Zone

Appendix A. Representation of Aquatic Bodies of Water Relevant to Listed Species

EPA and the Services worked together to develop “aquatic bins” to match estimated exposure concentrations (EECs) in surface water to the listed species assigned to these bins based on habitat requirements (USEPA, 2020). Each bin varies in depth, volume, and flow (**Table A1**).

Aquatic bin 1 is used to represent riparian habitats or other land-based habitats adjacent to waterbodies that may occasionally be inundated with surface water (such as wetlands) and provide habitat or influence the water quality for aquatic and semi-aquatic organisms.

Aquatic bins 2, 3, and 4 are used to simulate flowing waterbodies. Bin 2 represents low flow (*i.e.*, 0.001 m³/sec), bin 3 represents moderate flow (*i.e.*, 1 m³/sec), and bin 4 represents high flow (*i.e.*, 100 m³/sec). Bins 5, 6, and 7 are used to simulate static waterbodies. Bin 5 represents low volume, bin 6 represents moderate volume, and bin 7 represents high volume.

EPA uses the Pesticide in Water Calculator (PWC) and the Plant Assessment Tool (PAT) models to estimate exposures in bodies of water that represent the aquatic bins discussed above. Within the PWC model, the standard farm pond is used to develop EECs for the medium and large static and flowing bins (*e.g.*, bins 3, 4, 6 and 7). For the smaller flowing and static bins (aquatic bins 1, 2 and 5) exposure estimates are generated with the PAT. More discussion of the models used here is provided in the sections below.

The tidal and marine environments are not modeled, however the PAT Wetland Plant Exposure Zone (WPEZ) model and PWC EPA Farm Pond are used as surrogate EECs. No differentiation of these estuarine marine environments from freshwater systems are made in the Strategy. Because of the different types of dynamic hydrologic and tidal influence in estuarine/marine environments, the approach of using the PAT WPEZ and EPA Farm Pond as surrogates is considered conservative and protective.

Table A1. Generic Aquatic Habitats (Bins)¹

Generic Habitat (Bin #)	Depth (meters)	Width (meters)	Length (meters)	Flow (m ³ /second)	Waterbody Used for Exposure Modeling
Aquatic-associated terrestrial habitats (1)	NA	NA	NA	NA	PAT-Wetland
Low-flow (2)	0.1	2	Length of treated area	0.001	PAT-Wetland
Moderate-flow (3)	1	8	Length of treated area	1	PWC - Standard Farm Pond
High-flow (4)	2	40	Length of treated area	100	PWC - Standard Farm Pond
Low-volume (5)	0.1	1	1	0	PAT-Wetland
Moderate-volume (6)	1	10	10	0	PWC - Standard Farm Pond

Generic Habitat (Bin #)	Depth (meters)	Width (meters)	Length (meters)	Flow (m³/second)	Waterbody Used for Exposure Modeling
High-volume (7)	2	100	100	0	PWC - Standard Farm Pond
Intertidal nearshore (8)	0.5	50	Length of treated area	NA	PAT-Wetland
Subtidal nearshore (9)	5	200	Length of treated area	NA	PWC - Standard Farm Pond
Offshore marine (10)	200	300	Length of treated area	NA	PWC - Standard Farm Pond

PAT = Plant Assessment Tool; PWC = Pesticide in Water Calculator; NA = not applicable

¹Length of treated area – The habitat being evaluated is the reach or segment that abuts or is immediately adjacent to the treated area. The habitat is assumed to run the entire length of the treated area.

Appendix B. Lines of Evidence Considered in Step 1 for Interpreting the Potential for Population-Level Impacts

EPA considered the following lines of evidence when evaluating the potential for impacts to plants that could result in population-level impacts to animals that depend on those plants. These are consistent with the lines of evidence recommended in the *Revised Method for National Level Listed Species Biological Evaluations of Conventional Pesticides* and other ecological impact analysis guidance documents (USEPA, 1998b; USEPA, 2004; USEPA, 2020). EPA summarizes most of these lines of evidence in the ecological risk analysis developed to support registration decisions under FIFRA. What may not have been available in that analysis is an SSD of the plant toxicity endpoints and the Plant Assessment Tool (PAT) modeling results. EPA considered these lines of evidence in Step 1. Identify Population-Level Impacts and for interpreting the MoD and identifying the appropriate mitigation that is appropriate in Step 2. Identify the Type and Level of Mitigation. These are especially important for consideration when the MoD is between 1 and 10, where the MoE could be either low or medium because the lines of evidence that would be needed to change the conclusion for MoDs less than one and greater than ten occur rarely (**Table 5-2**).

When multiple lines of evidence are complementary (*e.g.*, laboratory- and field-based data are consistent in terms of effect) and there are monitoring and incident data which reinforce estimates of exposure and the likelihood of effects at a landscape level, then these increase confidence in predicting the potential for population-level impacts. When field data and lines of evidence are not consistent, EPA considers why the inconsistency may have occurred, whether additional data are needed, or whether additional mitigation may be appropriate to reduce the potential for further incidents. While incident and monitoring data are not available for all pesticides, the MoD and ecological impact analysis is developed based on some of the most robust environmental fate and toxicity data available for most chemicals. Therefore, the MoD should be reliable without these additional results.

Considerations in Exposure Estimate

- EPA uses laboratory fate data along with modeling to develop exposure estimates. EPA considers whether the modeling and fate data inputs are likely to result in an over or underestimate of potential for exposure. For example, when EPA uses a total residue approach (USEPA, 2019) to calculate the EEC, the EEC is more likely to provide a high estimate of exposure because the exposure estimate reflects the potential for exposure to parent and transformation products of potential concern.
- EPA uses monitoring data to serve as a line of evidence in ground-truthing the environmental fate characterization in terms of the mobility and persistence of the chemical and to evaluate the estimated exposure. EPA considers whether the laboratory data and modeling results are consistent with targeted monitoring results.
- EPA evaluates whether monitoring data support the predicted exposures. For example, if monitoring data are available reflecting current use of a pesticide, EPA considers whether

the predicted concentrations are higher or lower than the monitoring data. Predicted EECs and monitoring may not be similar as they reflect very different timescales, environments, and pesticide use but EPA does expect that EECs should be on the high end of measured exposure in the environment, especially for targeted monitoring.

- EPA evaluates whether monitoring detections commonly occur in the environment at or close to EECs in the range or CH. If detections are occurring within the range or CH, there is likely a potential for exposure. In general, lack of detections is not used to support that exposure is not occurring because it may simply indicate that no one conducted monitoring in the area or near where an application occurred.

Considerations in The Toxicity Characterization

- Type of impact observed in studies. When higher percent reductions in growth are predicted at the EECs or the EECs exceed survival effects, there is more confidence in the prediction of potential population-level impacts occurring. When only a low level of percent reductions in growth were observed at the EECs, there is more confidence that population-level impacts will occur and if they did occur, full recovery is often possible.
- Percentage of the species sensitivity distribution that would be impacted at the predicted EECs. The slope of the SSD or of the dose/response curve is a relevant consideration because when the slope is steep a small change in the EEC would result in a big increase in the potential number of species impacted. When the slope is shallow, there would be small changes in the number of species impacted with larger changes in the EEC.
- For guidelines designed as a hypothesis-driven test designs, consider if the regression-based estimates are aligned with the empirical endpoints. Using a study designed to test a hypothesis does not always produce a reliable dose/response curve and considerations should be given as to whether the concentration (or dose) response relationship is sufficiently bracketed to provide reliable estimates (*e.g.*, do estimates fall within the domain of the data). Depending on data available across studies and the degree that the regression-based endpoint falls outside of the empirical data, if the regression-based toxicity endpoint is not aligned with the empirical endpoints, an alternative toxicity endpoint may be utilized for the MoD.
- Evaluate variables associated with different studies that generated toxicity data used for SSDs. For example, evaluate different environmental conditions, and different product formulations, and species represented in the SSD.

Incidents

- When reliable incidents exist and indicate that impacts to plants may have occurred, these are considered in determining the potential for population-level impacts for a species with similar characteristics to the species in the reported incident.
- If different species of plants are impacted in incidents for a particular herbicide, habitat and diet impacts may also be considered.
- To consider incidents, the incidents should have enough information to provide confidence that the incidents occurred due to the use of the pesticide (*e.g.*, measured residues, application information).

- The lack of incidents does not indicate that impacts to species is not occurring because incidents are not always reported.
- EPA also evaluates whether the incidents are consistent with the types of impacts observed in lab studies or found in the risk assessment. If incidents are not consistent with the results of the MoD analysis, EPA would evaluate why that might be occurring, whether additional analysis or data were needed to better understand the issue, or whether additional mitigation was appropriate for the case.

Regarding incidents, the certainty index (*e.g.*, probable, highly probable) assigned to an incident provides a means of identifying whether there are measured residues and/or use information which may link a pesticide more clearly with an incident and increase confidence that the incident occurred due to the use of the pesticide, thereby increasing the relevancy of incident data as a line of evidence. When EPA does not have incident or monitoring data, EPA relies on the registrant submitted data to predict the potential for population-level impacts. This does not undermine our confidence in our MoD because the registrant submitted data and EPA's ecological analysis use the best available information available to understand the potential for impacts to populations. Data submitted to support registration of pesticides provides a robust dataset to understand the potential for population-level effects from the use of pesticides.

Appendix C. Development, Characterization and Discussion of Four Pesticide Use Limitation Areas (PULAs)

Approach used to Derive Four Proposed PULAs

As discussed in **Section 7**, EPA is proposing to use four PULAs to represent areas where proposed runoff/erosion and spray drift mitigations would apply to reduce exposures to listed plants and those animals that have obligate relationships to plants. The four PULAs are divided by habitat type (i.e., either terrestrial or aquatic/wetland) and plant taxon (i.e., either dicots or monocots). Non-flowering plants were grouped with the monocot and dicot PULAs.

EPA used taxonomy information associated with all listed plants located in the lower 48 to identify different plant groupings: dicots, monocots and non-flowering plants. EPA used life history information available for listed animals to identify those species with obligate relationships to either dicots, monocots, or non-flowering plants. EPA also used life history information available for all listed plants and listed animals with obligate relationships to plants to identify the habitat type relevant to the listed species (to identify whether the species should be placed in the terrestrial or the wetland/aquatic PULA). In many cases, listed plants occur within two or more of the standard habitat types: terrestrial, wetland and aquatic habitats. EPA grouped the wetland and aquatic species into one PULA because the land definition for aquatic areas also includes wetlands (See **Section 6.3** for descriptions). In cases where species use terrestrial only habitats, species were placed in one of the terrestrial PULAs. In cases where species use both terrestrial and wetland/aquatic habitats, species were placed in the wetland/aquatic habitat PULA. In cases where EPA identifies proposed mitigations for both the terrestrial and wetland/aquatic habitats, both sets of mitigations would apply to PULAs 3 and 4. This is because those two PULAs include listed plants and obligate animals that may use terrestrial, wetland, and aquatic habitats.

The Strategy is focused on agricultural uses of conventional herbicides. Therefore, EPA used the cultivated landcover in the lower 48 states to represent potential exposure areas. EPA extended these potential use sites to account for offsite movement of spray drift and runoff (300 m; 1000 ft). EPA identified all listed plants in the conterminous US that have ranges and/or CHs $\geq 5\%$ overlap with off-site exposure areas from cultivated lands.³⁹ EPA used the Use Data Layer Overlap Tool,⁴⁰ to post-process the percentage of overlap data with the exposure area (based on off-site transport areas discussed in previous section) for the cultivated landcover and each species range or CH. Those species ranges and CHs were used to define the grouped PULAs.⁴¹ EPA used the overlap of 5% or more to be consistent with FWS's approach to identifying those

³⁹ The 2017 cultivated use data layer identifies cultivated land cover for the lower 48 states and is based on land cover information derived from USDA's Crop Data Layer from 2013 through 2017 (Boryan et al, 2011; USDA, 2017).

⁴⁰ The Use Data Layer Overlap Tool can be found at: <https://www.epa.gov/ endangered-species/provisional-models-and-tools-used-epas-pesticide-endangered-species-biological>

⁴¹ Ranges and CHs obtained from FWS on February 16, 2022

species and CHs where there may be a potential for future J/AM (USFWS, 2021; USFWS, 2022a). **Table C1** summarizes the number of species and CHs included in each of the 4 proposed PULAs. The docket includes the full list of species and CHs that are currently proposed for inclusion in the 4 PULAs.

Table C1. Summary of four proposed Pesticide Use Limitation Areas (PULAs).

PULA #	PULA Description	# of species	# of CHs	# Counties ¹	Millions of acres of cultivated land ²
1	Dicots and non-flowering plants in Terrestrial Habitats	218 dicots 5 non-flowering plants ³ 21 obligate animals	48	1120	84
2	Monocots and non-flowering plants in Terrestrial Habitats	13 monocots 5 non-flowering plants ³ 2 obligates	3	346	10
3	Dicots and non-flowering plants in Wetland and Aquatic Habitats	86 dicots 6 non-flowering plants ⁴ 2 obligates	25	1033	71
4	Monocots and non-flowering plants in Wetland and Aquatic Habitats	29 monocots 6 non-flowering plants ⁴ 2 obligates	9	1311	170

¹This represents the number of counties that partially or completely overlap with the PULA.

²Calculated using cultivated land Use Data Layer.

³ The same non-flowering plant species were incorporated into the monocot and dicot PULAs for terrestrial habitats.

⁴ The same non-flowering plant species were incorporated into the monocot and dicot PULAs for wetland and aquatic habitats.

The overlap analysis involves calculating the percent of a species range or CH that overlaps with the offsite pesticide exposure area. For the Strategy, EPA is focused on estimating the extent of overlap of areas where spray drift and runoff/erosion may be transported from herbicide uses on cultivated lands. All listed plants and animals with obligate relationships to plants with $\geq 5\%$ overlap with their range and/or CH were included in one of the 4 PULAs. For terrestrial and wetland species, EPA extended the cultivated crop Use Data Layer out by 300 m (approximately 1000 feet) distance to approximate the area off the field that is relevant to population-level exposures from spray drift and runoff/erosion. For spray drift, this distance was based on the upper bound of the Tier 1 AgDRIFT[®] model. For runoff/erosion, maximum overland flow distances are commonly assumed to be approximately 300 to 370 m (1000 to 1200 feet) in engineering handbooks (TXDOT, 2019; USDA, 2010; VADEQ, 1992). Wu and Lane (2017) estimated flow path lengths for more than 32,000 wetlands in the prairie pothole region and 300 m was in the upper end of the distribution, with an average flow path length of 138 m and median of 83 m (Wu and Lane, 2017). Based on the potential spray drift and runoff/erosion transport distances, EPA set off site transport distance to 300 m (1000 ft). The area represented by the off-site exposure area was used to calculate the overlap with species ranges and CHs and

to develop the four PULAs proposed for the Strategy. PULAs represent areas where listed plants, obligate animals or their CHs occur and there is a potential population level impact of herbicides from applications to cultivated lands.

Discussion of proposed PULAs

The four proposed PULAs vary in size, extent and spatial locations. In some cases, the PULAs overlap with each other (See **Figure 7-2**). Individually, the PULAs overlap with 10-170 million acres of cultivated lands (**Table C1**). The largest proposed PULA #4 reflects ranges and CH of monocots in wetland and aquatic habitats and overlaps with 170 million acres of cultivated lands. Although PULA 4 includes only 37 species and 9 CHs, it includes species that have some of the largest ranges among the listed plants located in the conterminous US (*e.g.*, prairie fringed orchids). Comparatively, the listed dicot PULA for wetland/aquatic areas (PULA 3) overlaps with 100 million fewer acres of cultivated lands but has many more species (N= 94) and CHs (N = 25). When these PULAs are implemented, only the areas representing potential registered use sites of the herbicides would receive the mitigations. **Figure C1** shows the extent of acres of specific crops (*e.g.*, corn, cotton, wheat) or groups of crops (*e.g.*, vegetables and ground fruit; **Table C2**) within each of the four PULAs.

EPA traditionally implements mitigations through changes to pesticide labels or through limited areas where specific species may occur using bulletins and BLT. EPA is not proposing to implement spatially limited mitigations for specific species because of the large number of listed plants and their extents throughout the conterminous US and because of the large amount of time and effort needed to generate and maintain individual PULAs. For the Strategy, EPA is proposing a new approach to bulletins where large numbers of species and CHs are grouped to identify areas where higher mitigations are needed compared to the general label (which is implemented throughout the lower 48 states). This approach is being proposed to limit impacts on growers and focus mitigations in areas where they are needed most. Although there are hundreds of millions of acres of cultivated lands that overlap with the PULAs, there are hundreds of millions of cultivated lands that are outside of the PULAs. **Figure C1** includes comparisons of the amount of total acres of cultivated land in the conterminous US compared to the amount of acres of cultivated land within the four PULAs. This figure also includes similar comparisons of all acres in the conterminous US and within the PULAs for specific or groups of crops. As shown in this figure, when EPA applies step 3 of the Strategy, mitigations applied using the PULAs will result in higher mitigations (compared to the rest of the conterminous US) on only a portion of the total acres of crops.

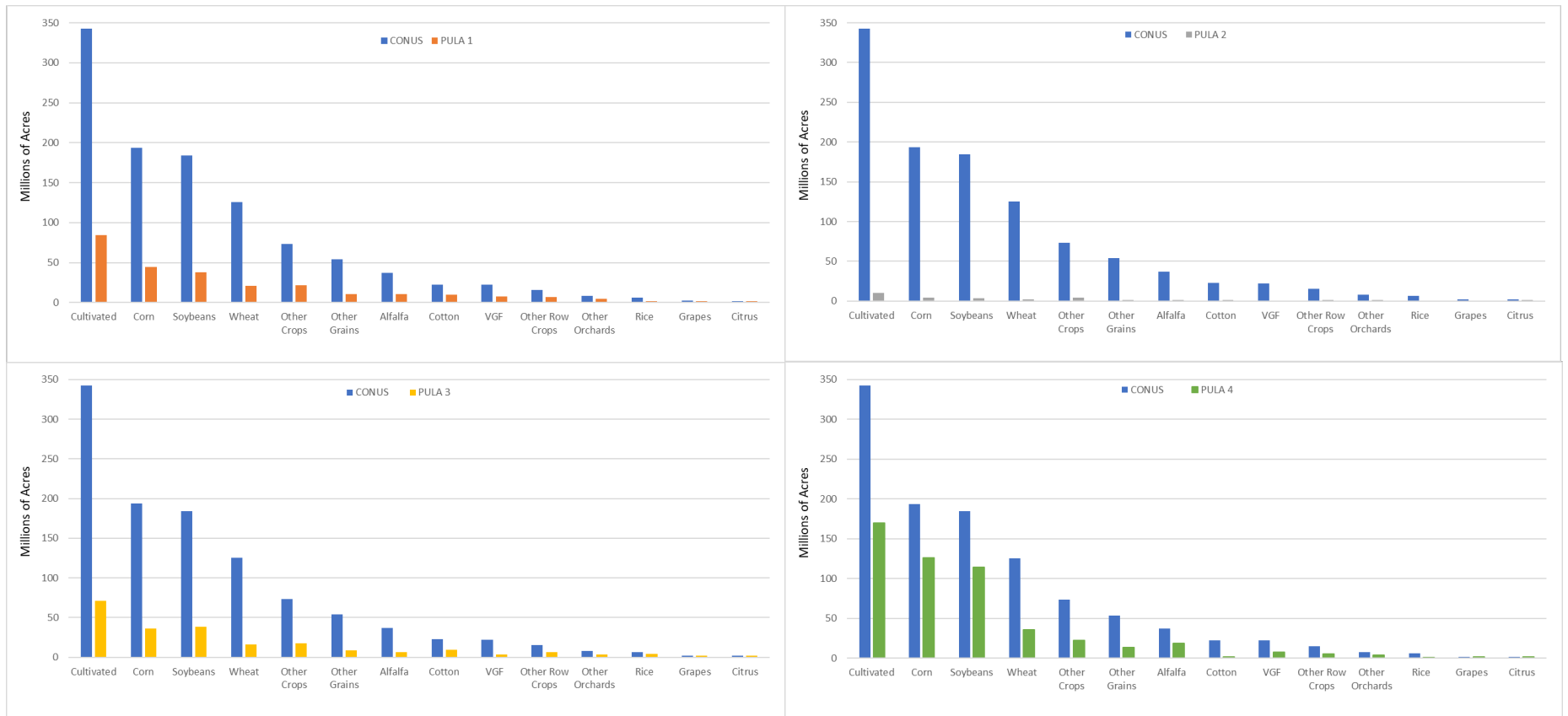


Figure C1. Extent of Acres of Cultivated Land and Specific Crops or Crop Groups in the Lower 48 states and in each of the Pesticide Use Limitation Areas (PULAs). Acres based on Use Data Layers (UDLs). Table C2 includes crops for each UDL. VGF = vegetables and ground fruit

Table C2. Relevant uses included in Use Data Layers.

Use Data Layer (UDL)	Uses included in UDL
Alfalfa	Alfalfa, Vetch, Switchgrass
Citrus	Citrus (other), Grapefruit, Kumquat, Lemon, Lime, Orange, Tangelo, Tangerine
Corn	Corn (grain), Corn (silage), Corn (traditional/Indian)
Cotton	Cotton
Grapes	Grapes
Other Crops	Field Crops (other), Fallow (other), Flaxseed, Grasses & Legumes (other, seed), Bahia Grass (seed), Bentgrass (seed), Bermuda Grass (seed), Kentucky Bluegrass (seed), Bromegrass (seed), Fescue (seed), Orchardgrass (seed), Ryegrass (seed), Sudangrass (seed), Timothy (seed), Wheatgrass (seed), Jojoba, Alfalfa (seed), Birdsfoot Trefoil (seed), Crimson Clover (seed), Red Clover (seed), White Clover (seed), Lespedeza (seed), Vetch (seed), Mustard (seed), Sesame
Other Grains	Barley, Buckwheat, Canola, Emmer & Spelt, Proso Millet, Oats, Rapeseed, Rye, Safflower, Sorghum (grain), Sorghum (silage), Sorghum (syrup), Sugarcane (seed), Sugarcane (sugar), Triticale
Other Orchards	Almond, Apricot, Avocado, Banana, Cherimoya, Sweet Cherry, Tart Cherry, Chestnut, Coffee, Date, Fig, Apple, Guava, Hazelnut, Macadamia, Mango, Nectarine, Other Non-Citrus (excluding berries), Olive, Papaya, Passion Fruit, Peach, Pear, Pear, Persimmon, Pistachio, Plum-Apricot Hybrids (including plumcots & pluots), Plum & Prune, Pomegranate, Other Tree Nuts, English Walnut
Other Row Crops	Hops, Peanut, Sugar Beet, Sunflower, Tobacco
Rice	Rice, Wild Rice
Soybeans	Soybean
Vegetables and Ground Fruit (VGF)	Aronia Berry, Artichoke, Asparagus, Dry Edible Bean (excluding chickpeas & lima), Dry Edible Lima Bean, Green Lima Bean, Snap Bean, Beet, Other Berries, Blackberry (including dewberry & marionberry), Tame Blueberry, Wild Blueberry, Boysenberry, Broccoli, Brussel Sprout, Chinese Cabbage, Head Cabbage, Mustard Cabbage, Camelina, Carrot, Cauliflower, Celery, Chickpea, Chicory, Cranberry, Cucumber, Currant, Daikon, Dill (oil), Eggplant, Elderberry, Escarole & Endive, Garlic, Ginger Root, Ginseng, Collard Greens, Kale, Mustard Greens, Turnip Greens, Guar, Dry Herbs, Fresh Cut Herbs, Horseradish, Kiwifruit, Lentil, Lettuce, Loganberry, Cantaloupe, Honeydew Melon, Watermelon, Mint (oil), Mint Tea Leaves, Okra, Dry Onions, Green Onions, Parsley, Austrian Winter Pea, Chinese Pea (sugar & snow), Dry Edible Pea, Dry Southern Pea (cowpea), Green Pea (excluding Southern), Green Southern Pea (cowpea), Bell Pepper, Chile Pepper, Pineapple, Shelled Popcorn, Potato, Pumpkin, Radish, Raspberry, Rhubarb, Spinach, Squash, Strawberry, Sweet Corn, Sweet Potato, Taro, Tomato, Turnip, Other Vegetables, Watercress
Wheat	Wheat

By establishing the PULAs using the entire cultivated land UDL and not individual UDLs for each herbicide, it is possible that EPA identified a need for mitigations in areas with low overlap (<5%) of the specific registered uses of a particular herbicide that has more limited labeled uses, particularly on crops that are grown on a small number of acres. By using the cultivated land UDL, EPA conservatively identifies a larger PULA; however, if there are limited use sites within the PULA, the impacts will also be limited. Because one of the main goals of the Strategy is to employ a simpler, much more efficient process to identify and implement mitigations, EPA's current thinking is that it would implement the mitigations by standardizing PULAs across

all herbicides based on the types of species potentially affected by the herbicide as described above. By applying this approach across all cultivated lands for herbicides, all herbicide uses would be mitigated with a consistent approach within the same area. Thus, all herbicides would have reduced exposures to the species where cultivated lands may lead to population level impacts. Moreover, the alternative of generating chemical, use and species specific PULAs is not feasible given the challenges EPA is facing as discussed in the introduction (**Section 1**).

For the PULAs described here, EPA used the current species ranges and CHs provided by the FWS as of February 16, 2022. When developing PULAs for the malathion BiOp, FWS, EPA, and the registrant reached out to species experts and sometimes refined the areas where mitigation was identified to reflect other information available on species location. It is possible in the future that EPA and FWS could work to refine some of the ranges that inform the PULAs proposed in this proposed Strategy; however, because they include hundreds of species, this is likely a longer-term effort. In addition, EPA did not consider several factors that FWS included in its' J/AM analyses, such as vulnerability and modifiers. These factors could result in changes to the list of species and CHs that are included in the 4 proposed PULAs (see the **List of Species in PULAs** in the docket). EPA expects to discuss these factors with FWS in the future. In addition, EPA expects to update the PULAs over time in order to incorporate new data (e.g., updated species ranges).

When considering the 4 PULAs, there are approximately 350 listed plant species that are used to represent the four PULAs (**Table C1**). As indicated previously, there are over 400 listed plants located within the lower 48 states. Some of those other listed plant species are included in the Vulnerable Species Pilot (N = 12). The other species are not included in the PULAs because they have <5% overlap with the exposure area of cultivated lands. Therefore, the listed plants species not included in the PULAs or in the vulnerable species pilot are not expected to have population-level impacts from herbicides. EPA plans to work with FWS in the future to evaluate whether a streamlined approach can be applied to consulting on these other species that have low overlap with cultivated lands.

**Vulnerable Listed (Endangered and Threatened) Species Pilot Project:
Proposed Mitigations, Implementation Plan, and Possible Expansion**

Draft Plan

**USEPA, Office of Pesticide Programs
June 2023**

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1. Introduction

Under section 7(a)(2) of the Endangered Species Act (ESA), EPA must ensure that any action authorized, funded, or carried out by the Agency (referred to as an “agency action”) is not likely to jeopardize the continued existence of federally threatened and endangered (listed) species or destroy or adversely modify designated critical habitat. In fulfilling the requirements of ESA section 7(a)(2), EPA must use the best scientific and commercial data available. When appropriate for the agency action, EPA consults with the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) (hereinafter the Services). As EPA works towards meeting its ESA obligations for FIFRA actions, EPA’s ESA Workplan¹ identified several pilot projects to ensure that EPA adopts meaningful protections for listed species without waiting until the Agency has completed effects determinations (the precursor to consulting with the Services) or completed consultation with the Services. These pilots included the “EPA Vulnerable Species Pilot Project,” to identify early mitigations for listed species that EPA has determined are particularly vulnerable to potential pesticide effects, and the “Federal Mitigation Pilot Project” (federal pilot), a collaboration between EPA, the Services, and the U.S. Department of Agriculture (USDA). This paper is focused on the Vulnerable Species Pilot. The federal pilot is briefly discussed in this introduction because it informed the proposed mitigations for the Vulnerable Species Pilot. During the public comment period, EPA welcomes stakeholders and the general public to review the proposal, provide input and propose suggested improvements.

Through EPA’s Vulnerable Species Pilot, the Agency has identified an initial set of “pilot” listed species (**Section 2**) and is proposing pesticide mitigation measures designed to reduce the pilot species’ exposures to conventional pesticides from non-residential outdoor uses of those pesticides (*e.g.*, agricultural, rights of way, mosquito adulticide; **Section 3**). Among listed species, the pilot species are particularly vulnerable to the potential effects of pesticides due to a combination of factors including a limited geographic range, small population size, and general susceptibility to environmental stressors where effects to even a small number of individuals may be highly impactful to populations or the entire species. As a result, these species face a higher likelihood of a future jeopardy or adverse modification determination for certain pesticide uses. To proactively address this situation, the Vulnerable Species Pilot focuses on implementing early protections (before EPA has made effects determinations or completed any necessary consultation) for multiple types of registered pesticides (*e.g.*, insecticides, herbicides) to protect the pilot species. By incorporating early measures to avoid and minimize exposure, EPA expects to reduce the likelihood of future jeopardy or adverse modification determinations and to minimize potential take² for the pilot species from the ongoing use of registered conventional pesticides.

For the Vulnerable Species Pilot, EPA is proposing mitigations to avoid pesticide exposures in areas where the pilot species are expected to occur and to minimize pesticide transport (via spray drift and runoff/erosion) from the application site to those areas, as applicable. Because the pilot species are some of the most vulnerable to potential effects, EPA designed the mitigation measures to be broad enough that the mitigations protect the pilot species while being implemented efficiently and effectively, and clear enough that pesticide users can understand and apply the use-limitation

¹ <https://www.epa.gov/endangered-species/epas-workplan-and-progress-toward-better-protections-endangered-species#workplan>

² Take means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” ESA § 3(19), 16 U.S.C. § 1532(19). Incidental take is a take “that result[s] from, but [is] not the purpose of, carrying out an otherwise lawful activity.” See 50 C.F.R. § 402.02.

instructions. EPA expects that the proposed mitigations would apply to the majority of conventional outdoor-use pesticides³. To efficiently and effectively implement mitigations for these pilot species, EPA is proposing one set of mitigations for all conventional outdoor-use pesticides, regardless of their differences in exposure or potential effects. EPA considered applying more complex combinations of mitigations to different pesticides but chose a simpler approach in the interest of improving EPA's confidence that implementing the mitigations could potentially reduce the likelihood of future jeopardy or adverse modification determinations for the majority of conventional pesticide applications, achieving implementation more expeditiously, and having simpler and consistent mitigation instructions for all users.

Because the pilot species have relatively small ranges, EPA intends to implement the mitigations for the pilot species through geographic-specific restrictions located in Endangered Species Protection Bulletins that are accessed through the Bulletins Live! Two (BLT) website, which are made enforceable through directions to access and follow them on pesticide labeling.⁴ Where EPA identifies mitigations specific to certain geographic areas, it uses Geographic Information System (GIS) mapping information typically in combination with species location information to delineate pesticide use limitation areas (PULAs). PULAs are the spatial files in BLT that allow users to determine if their intended pesticide application falls within a location where additional use restrictions or mitigations are necessary to protect listed species or their designated critical habitat. Because EPA is proposing to use BLT, and the ranges of these species are relatively small, the area potentially affected is spatially limited.

Accompanying the release of this white paper in the public docket, EPA is also releasing a series of StoryMaps⁵ that offer the unique ability to convey geospatial information about the location of the pilot species, the mitigations EPA is proposing, where specific agricultural commodities are grown, monitoring data, habitat descriptions, and other visual information. Users can zoom in on the StoryMaps to view specific locations that may be of interest to them (*e.g.*, where pesticide use restrictions may apply through PULAs for the pilot species). The StoryMaps help to convey some of the complex information described in this white paper in an easy-to-understand manner, offering a greater sense of the place-based mitigations to protect the pilot species from pesticides. Any mitigations and associated geographic locations discussed in the StoryMaps are for informational purposes only and are not changes to pesticide use requirements until they are incorporated into bulletins and the relevant labels reference the BLT website.

Following the public comment period on this draft plan, EPA will work to consider public comments and determine whether any mitigations should be revised, or additional measures are necessary. EPA expects this part of the pilot to be completed by December 2023. In 2024, EPA will consider whether the pilot can be expanded to other selected vulnerable listed species.

Through the federal pilot,⁶ EPA, the Services, and USDA began to develop approaches for identifying mitigation to minimize the effects of pesticides on a dozen listed species. One of the main goals of the federal pilot was for these federal agencies to gain a common understanding of how to reduce exposures to listed species from pesticides. Collaborating agencies made substantial progress discussing

³ Including non-residential outdoor uses of conventional pesticides, except for rodenticides and avicides.

⁴ <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>

⁵ <https://storymaps.arcgis.com/collections/896d140363174c9d8ee78e4c471bd7fd>

⁶ <https://www.epa.gov/endangered-species/implementing-epas-workplan-protect-endangered-and-threatened-species-pesticides>

practical, flexible, feasible, and effective measures that are expected to reduce pesticide exposure to the federal pilot species. EPA applied the lessons learned in the federal pilot collaboration as a starting point to developing the mitigations proposed below for the Vulnerable Species Pilot (**Section 4**) and evaluating their effectiveness (**Section 5**).

Another primary goal of the Vulnerable Species Pilot is to help increase the efficiency of the pesticide consultation process with FWS because FWS has authority over the listed species in the Vulnerable Species Pilot. Because the vulnerable pilot species are all under the jurisdiction of the FWS, EPA has been discussing the proposed mitigations with FWS during the development of this proposal. EPA intends to continue to work with the FWS before issuing the final mitigations and may incorporate additional species-specific information. EPA and FWS may develop a pesticide programmatic consultation, or other streamlining process, that will include the evaluation of pesticide exposure to pilot species using the Vulnerable Species Pilot. By implementing these earlier mitigations, EPA expects that a programmatic or other consultation could be more efficient and potentially allow FWS to make final determinations concluding that the actions are not likely to jeopardize the pilot species or adversely modify their designated critical habitats. In the meantime, EPA is proposing to start implementing the Vulnerable Species Pilot once it finalizes the proposed mitigations.

Concurrent with the timeline for the Vulnerable Species Pilot, the Office of Pesticide Programs (OPP) is also developing several other early mitigation efforts to reduce exposure to non-target wildlife, such as the Herbicide Strategy and the FIFRA Interim Ecological Mitigation Measures. Where possible, OPP has sought to harmonize the mitigation measures across these ongoing projects to reduce exposure to listed species from run-off, erosion and spray drift. In some situations, however, there may be inconsistencies between the proposed mitigations described in this draft plan and the upcoming publications for other strategies. OPP may not be able to resolve all inconsistencies between the different efforts due to differences in timing and goals of these efforts as well as the evolving nature of EPA's ESA strategies. However, OPP will more comprehensively harmonize the mitigation menu options and approaches across the various ongoing efforts, to the extent possible, as the Vulnerable Species Pilot evolves.

This document describes EPA's proposal for the Vulnerable Species Pilot. The sections below describe the species included in the pilot, the general approach to drafting the mitigations, the draft mitigations (avoidance and minimization), and where they would apply to the pilot species. This document also describes the proposed mitigations effectiveness in reducing exposure to the pilot species using a subset of pesticides that have been observed in monitoring data relevant to some of the pilot species. Also, this document describes EPA's proposed implementation plan for the Vulnerable Species Pilot. The implementation plan discusses development of bulletins and EPA's proposal on how to incorporate BLT language on labels through different FIFRA actions. The implementation plan also describes EPA's thoughts on training and outreach to encourage voluntary adoption of protections. Finally, this document includes a discussion of how the Vulnerable Species Pilot effort may be expanded to identify and implement mitigations for other vulnerable species.

2. Pilot species

EPA identified the 27 pilot species listed below using documentation (*e.g.*, 5-year reviews, biological opinions) from FWS and NMFS and spatial data for species' ranges. All of the selected pilot species are under the authority of FWS and are located within the continental United States. Although EPA considered the NMFS species, EPA decided they did not meet the criteria for the pilot species (mainly because they have large ranges). For the species that EPA identified for this pilot, FWS concluded that they have high or medium overall vulnerability (FWS 2022^{7,8}); they have limited ranges (**Figure 1**); and pesticides have already been identified as a stressor to the species (*e.g.*, in status of species assessments, biological opinions or EPA biological evaluations). Although the pilot species generally have small range sizes, many of the locations of their ranges overlap with ranges of other listed species not included in the pilot. Therefore, protections for the pilot species would protect additional listed species where they co-occur with the pilot species. **Table 1** includes a summary of the pilot vulnerable species. The 27 pilot species, and their designated critical habitat where relevant, are located throughout the continental United States, in all of the FWS regions, except Region 7 (which covers Alaska). Four of these species have designated critical habitats. The StoryMaps developed for the pilot species include additional information on the pilot species, including pictures, interactive maps, life history, and discussions of pesticides as stressors to these species.

EPA's list of pilot species includes seven plant species located in the Lake Wales Ridge area of Florida. Those species include Avon Park harebells, Garrett's mint, wireweed, scrub blazingstar, short-leaved rosemary, scrub mint and Florida ziziphus. In the FWS recovery plan amendment for the Lake Wales Ridge plants⁹, FWS includes five additional species: Highland scrub hypericum (*Hypericum cumulicola*), snakeroot (*Eryngium cuneifolium*), Carter's mustard (*Warea carteri*), sandlace (*Polygonella myriophylla*) and Lewton's polygala (*Polygala lewtonii*). Therefore, EPA expects that the mitigations proposed for the Lake Wales Ridge plants will reduce exposure for all 12 listed plants in this area, not just the pilot species.

⁷ FWS considered various factors when they determined the overall vulnerability of a species, including: Population size and trajectory, distribution, and other factors relevant to the environmental baseline.

⁸ USFWS 2022. Biological and Conference Opinion on the Registration of Malathion Pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act. U.S. Fish and Wildlife Service Ecological Services Program. February 28, 2022. Available at <https://www.epa.gov/endangered-species/biological-opinions-available-public-comment-and-links-final-opinions>.

⁹ https://ecos.fws.gov/docs/recovery_plan/Lake%20Wales%20Ridge%20Plants%20Recovery%20Plan%20Amendment_1.pdf

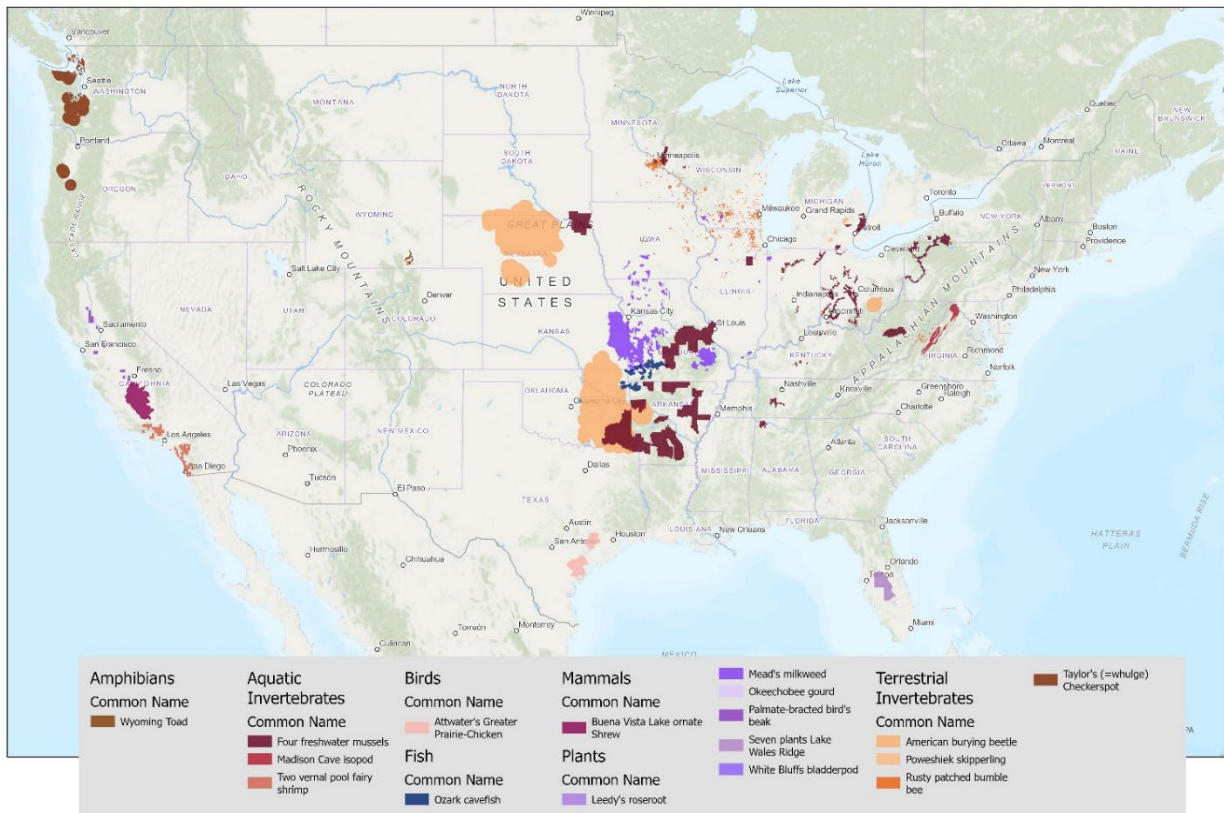


Figure 1. Locations of ranges and designated critical habitats (if available) of 27 vulnerable pilot species.

Table 1. Listed species included in vulnerable species pilot

Species (common name)	Species (Scientific name)	Entity ID(s)	Taxon	Status	Overall vulnerability (USFWS 2022)	FWS region	Designated Critical habitat?
Lake Wales Ridge plants (Avon Park harebells, Garrett's mint, wireweed, scrub blazingstar, short-leaved rosemary, scrub mint, Florida ziziphus)	<i>Crotalaria avonensis</i> , <i>Dicerandra christmanii</i> , <i>Polygonella basiramea</i> , <i>Liatris ohlingerae</i> , <i>Conradina brevifolia</i> , <i>Dicerandra frutescens</i> , <i>Ziziphus celata</i>	1235, 1046, 804, 752, 675, 695, 1234	Plant	Endangered	High	4	No
Mead's milkweed	<i>Asclepias meadii</i>	636	Plant	Threatened	Medium	3	No
Leedy's roseroot	<i>Rhodiola integrifolia ssp. leedyi</i>	1150	Plant	Threatened	High	3	No
Okeechobee gourd	<i>Cucurbita okeechobeensis ssp. okeechobeensis</i>	914	Plant	Endangered	High	4	No
Palmate-bracted bird's beak	<i>Cordylanthus palmatus</i>	679	Plant	Endangered	High	8	No
White bluffs bladderpod	<i>Physaria douglasii ssp. tuplashensis</i>	4565	Plant	Threatened	High	1	Yes
Ozark cavefish	<i>Amblyopsis rosae</i>	260	Fish	Threatened	Medium	4	No
Madison cave isopod	<i>Antrolana lira</i>	476	Invert	Threatened	High	5	No
Riverside and San Diego fairy shrimp	<i>Streptocephalus woottoni and Branchinecta sandiegonensis</i>	492 and 495	Invert	Endangered	High	8	Yes
Ouachita rock pocketbook	<i>Arkansia wheeleri</i>	343	Mussel	Endangered	Medium	2	No
Rayed bean	<i>Villosa fabalis</i>	6062	Mussel	Endangered	High	3	No
Scaleshell mussel	<i>Leptodea leptodon</i>	345	Mussel	Endangered	High	3	No
Winged mapleleaf	<i>Quadrula fragosa</i>	328	Mussel	Endangered	High	3	No
American burying beetle	<i>Nicrophorus americanus</i>	440	Invert	Threatened	Medium	2	No
Poweshiek skipperling	<i>Oarisma poweshiek</i>	10147	Invert	Endangered	High	3	Yes
Rusty patched bumble bee	<i>Bombus affinis</i>	10383	Invert	Endangered	High	3	No
Taylor's checkerspot	<i>Euphydryas editha taylori</i>	7495	Invert	Endangered	High	1	Yes
Attwater's prairie chicken	<i>Tympanuchus cupido attwateri</i>	83	Bird	Endangered	High	2	No
Buena Vista Lake ornate shrew	<i>Sorex ornatus relictus</i>	58	Mammal	Endangered	High	8	Yes
Wyoming toad	<i>Bufo hemiophrys baxteri</i>	202	Amphibian	Endangered	High	6	No

3. Approach to developing proposed mitigations for pilot species

EPA identified mitigations that are intended to apply broadly to conventional pesticide active ingredients that are applied outdoors. EPA designed the mitigations to be as general as possible so that they apply to groups of pesticides and species, rather than only certain pesticides or species. Mitigations focused on avoidance and minimization measures, specifically the predominant off-site transport routes for most pesticides (*i.e.*, spray drift and runoff/erosion). Avoidance was based on the current location and habitat information available for each of the pilot species. EPA is proposing to allow an exception to avoidance of applications to the habitat of the listed species when applicators get input and approval from local FWS experts. This would allow for applications to manage the habitats of the pilot species (*e.g.*, invasive species control) or under conditions or timing when effects to the species are not a concern to the species experts. When deciding upon spray drift and runoff/erosion mitigations, EPA first considered the life history of the species (*i.e.*, habitat) and potential overlaps with pesticide exposure areas to identify relevant transport routes. EPA also considered the life cycles of the species and their dependencies on other species (*e.g.*, insect pollinators) to identify any relevant timing restrictions. When identifying specific spray drift and runoff/erosion mitigations, EPA used existing mitigation approaches that are available to pesticide users. The avoidance and minimization measures proposed for the pilot species are intended to reduce the likelihood of future jeopardy/adverse modification determinations and to minimize potential take for the pilot species from the ongoing use of registered conventional pesticides. Although offsets (compensatory mitigation) are potentially useful for conserving the pilot species, EPA is not currently proposing offsets for the Vulnerable Species Pilot. This is because EPA is still considering when and how offsets can apply to pesticide actions and will continue discussions on this topic with the Services during consultations and with stakeholders, including to consider stakeholder proposals for offsets. EPA expects to work with FWS to identify species that may be particularly amenable to offsets, especially if offsets could substantially improve the conservation outcome for the species. Therefore, EPA's proposal for the Vulnerable Species Pilot relies upon avoidance and minimization.

EPA first developed mitigations for the Poweshiek skipperling. For this species, EPA identified avoidance mitigations to occur in the skipperling's designated critical habitat and spray drift and runoff/erosion mitigations to minimize exposure from application sites outside of the avoidance area. Then, EPA considered whether the mitigations could be applied directly to other terrestrial insects within the pilot (*i.e.*, rusty patched bumble bee and Taylor's checkerspot). Because of the similarity of the habitats (all three species inhabit grassland areas) and life histories of these three insect species, the pesticide exposure routes are similar (*i.e.*, all three may be exposed to pesticides from direct applications on their habitats or spray drift and runoff/erosion transport from adjacent use sites). EPA also chose not to apply timing restrictions for these three species because different life stages are expected to be present in their habitats throughout most of the year when pesticides may be applied. Therefore, the same runoff/erosion and drift mitigations are proposed for all three terrestrial insect species included in the pilot. What differs among these species is the locations where the proposed mitigations apply, which are based on the ranges and designated critical habitats (if applicable) of the three species.

After drafting mitigations for these three species, EPA considered the life history of the American burying beetle. When spray drift mitigations are needed for this species, EPA concluded that the same mitigations applied to the other three pilot insect species discussed in the previous paragraph would apply. Where there is a difference for the American burying beetle is due to some of its life history

considerations. Based on the life cycle of this species, there are times of the year when pesticide exposure from spray drift is not of concern. Therefore, there are timing considerations applied to the mitigations for the American burying beetle that are different than for the Poweshiek skipperling, rusty patched bumble bee and the Taylor's checkerspot. EPA also concluded that runoff/erosion is not a relevant exposure pathway for the American Burying Beetle. In addition, all four species have different geographic locations where the mitigations are proposed (*i.e.*, different PULAs).

After drafting mitigations for the terrestrial insects, EPA considered whether the same mitigations would apply to other terrestrial species in this pilot, including plants and animals. When spray drift and runoff/erosion transport apply to a species, EPA is proposing the same mitigations to address these routes of exposure. For some species (*e.g.*, White Bluffs bladderpod), EPA considered the location of the species relative to agricultural uses and concluded that runoff/erosion is not a likely relevant transport route. Therefore, EPA is proposing only drift mitigations for the White Bluffs bladderpod. For some species (*e.g.*, Leedy's roseroot), EPA is proposing to limit herbicide and insecticide mitigations to times when the vegetative part of the plant is above ground and when the plant is flowering, respectively. For many of the other terrestrial species, EPA expects that the proposed PULA will include some areas that do not necessarily include the habitat of the species. In those cases, EPA is proposing to apply the avoidance areas to the habitat of the species. When deciding whether to apply avoidance areas to the range (and designated critical habitat if applicable) or to use habitat descriptions, EPA considered the geographic extent of the species range and whether it likely includes other areas where the species is not likely to occur.

EPA also considered the pilot species that inhabit aquatic areas (*e.g.*, Riverside and San Diego fairy shrimp, rayed bean) and wetlands (*e.g.*, Buena Vista Lake ornate shrew). For all of the aquatic species, habitat descriptions are used to identify avoidance areas because the ranges include watersheds, not just aquatic habitats. EPA concluded that the same drift and runoff/erosion mitigations identified above for the Poweshiek skipperling would apply to these species, with some exceptions. For the cave species (Ozark cavefish and Madison Cave isopod), EPA is proposing different runoff/erosion mitigations in proximity of sink holes. Therefore, for many aquatic species, the baseline set of spray drift and runoff/erosion mitigations applied to the Poweshiek skipperling would apply; however, there are some changes to the mitigations for species that inhabit caves that could receive pesticides through sink holes.

EPA used an iterative process to develop the proposed the mitigations by considering the species effects and exposures from representative pesticides. EPA drafted an initial set of mitigations and then evaluated and revised them based on a representative set of pesticides that have been detected in monitoring data from locations relevant to many of the pilot species. EPA used the environmental fate and toxicity information for these pesticides to estimate exposures to general habitats relevant to the pilot species. EPA used standard methods and models to develop conservative analyses of the potential effects of these pesticides on the pilot species and their prey, pollination, habitat and/or dispersal. After EPA evaluated these pesticide-specific examples, EPA revisited and revised the mitigations as appropriate. For pesticides chosen for the evaluation, EPA used data from previous assessments and relied on previously modeled Environmental Exposure Concentrations (EECs) for both aquatic and terrestrial environments, including associated use patterns and relevant application rates. Exposures were compared to available toxicity data representing potential effects to the pilot species or taxa upon which the species depend for prey, pollination, habitat and/or dispersal. If exposures exceeded the toxicity endpoints, EPA considered the order of magnitude difference in exposures and toxicity endpoint. EPA then considered the anticipated order of magnitude reduction of the proposed

mitigations. In cases where the order of magnitude reductions anticipated by the mitigations were equal to or exceeded the difference in exposure and toxicity, EPA did not adjust the mitigations. In cases where the order of magnitude reductions anticipated by the mitigations were lower than the difference in exposure and toxicity, EPA made adjustments to the mitigations. EPA relied upon this qualitative approach (order of magnitude difference in exposure and effects) because it used a deterministic, conservative approach. Neither the EECs nor the effectiveness of mitigations are precise. Exposures and effectiveness of the proposed mitigations may vary because of weather, use site characteristics, habitats, equipment, and numerous other factors.

Section 4 includes EPA's proposed mitigations after the iterative process of drafting and evaluating was completed. **Section 5** includes the discussion of the relative difference in exposure and toxicity data and compares them to the effectiveness of the proposed mitigations. For spray drift mitigations, EPA relied upon existing models (AgDRIFT) and empirical studies to identify mitigation options for different application methods. For runoff/erosion, a weight-of-evidence approach was used to develop the menu of mitigation measures. Lines of evidence included open literature data and reviews, Pesticide in Water Calculator (PWC) modeling, and the results of a mitigation workshop titled *Mitigating the Risks of Plant Protection Products in the Environment. Proceedings of the MAGPIE Workshop*. The proposed combination of drift and runoff/erosion mitigations may reduce exposures by orders of magnitude. Available information on the effectiveness of mitigation practices is provided in the *Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation Practices to Protect Non-Target Plants and Wildlife* (referred to as "technical document"). This technical document outlines many of the drift-reduction strategies and is intended as a resource for drift mitigations as well as runoff/erosion measures. This accompanying document provides details on determining the efficacy to reduce movement off field, and full description of each mitigation measure. It should be noted that through the available public comment period, EPA is looking for feedback on the mitigation menu practices and if there are other practices that should be considered. EPA's intent is to build upon work previous completed to develop the mitigation menu and allow space for additional mitigation options that become available in the future.

4. Proposed Mitigations for Pilot Species

EPA is proposing to implement the mitigations for the pilot species through geographic-specific restrictions located in Bulletins that are accessed through the BLT website. Bulletins include two components: the pesticide use limitation area (PULA) and the pesticide use restrictions. PULAs are the spatial files in BLT that allow users to determine if their intended pesticide application falls within an area that requires mitigation. The pesticide use restrictions in BLT (as referenced on pesticide labeling) describe the avoidance and minimization measures that a user must follow. This section describes EPA's proposed PULAs for the pilot species (**Section 4.1**) and proposed pesticide use restrictions (**Section 4.2**). The PULAs are described first because they may influence the specific type of pesticide use limitation language provided in the bulletin.

For the vulnerable species included in this pilot, the proposed PULAs and pesticide use limitations would apply to all actions for non-residential outdoor uses of conventional pesticides after they are finalized, except for rodenticides and avicides. EPA expects these proposed limitations to apply to the majority of agricultural and non-agricultural use sites (*e.g.*, rights of way, nursery/ornamentals, forestry, industrial, pasture/rangeland, golf courses, athletic fields, aquatic applications, including mosquito adulticide and

larvicide applications). For spray drift mitigations, EPA expects the proposed mitigations would apply to aerial and ground broadcast sprays. EPA expects that runoff/erosion mitigations would be applicable to broadcast applications of liquid or granular formulations. EPA acknowledges that this is a broad approach with many strict mitigations, but it is important to note that this pilot project is applied to a relatively small area and is intended to protect the most vulnerable species. These mitigations are not intended to be applicable for small scale spot-treatment applications, indoor uses, or applications in residential areas. Rodenticides are not included here because EPA is developing a separate rodenticide strategy for protecting listed species and designated critical habitats from the use of rodenticides. After the release of the rodenticide strategy, EPA is planning on adapting the rodenticide strategy approach to address avicide exposure to listed species.

4.1. Pesticide use limitation areas (PULAs)

PULAs are generally defined by using geographic information that can be communicated to the pesticide user. In the context of listed species, this geographic information is typically listed species locations such as range and any designated critical habitat. For each vulnerable species in the pilot, EPA is using species-specific location information (species range and designated critical habitat, if applicable) provided by FWS to establish each pilot species PULA. The proposed PULAs for the pilot species are described in **Table 2**. This table also characterizes the maximum spatial extent of the proposed PULAs. As shown in **Figure 1**, some of the proposed PULAs overlap.

In establishing PULAs, EPA's default is to use the species' ranges to identify avoidance and minimization areas. Ranges are represented by the most current information available in the FWS Environmental Conservation Online System (ECOS). For the pilot species with designated critical habitats, EPA plans to include the designated critical habitats in the PULAs. Designated critical habitats are also represented by the most current information available in the FWS ECOS. For the consultation with FWS on malathion (USFWS 2022¹⁰), species experts at FWS provided alternative, more refined areas where protections are needed. For the pilot species, PULAs are available for: Lake Wales Ridge plant species and Attwater's prairie chicken. EPA is proposing to use these two PULAs from the malathion Biological Opinion (BiOp) because they incorporate species expert feedback on areas where these species need protections, which also allows for less limitations to pesticide applicators in other areas within the ranges of these species. For the other species, EPA has reached out to FWS for species expert feedback on the proposed PULAs. EPA will consider revising the proposed PULAs for the other pilot species based on FWS species expert feedback.

¹⁰ USFWS. 2022. Biological and Conference Opinion on the Registration of **Malathion** Pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act. U.S. Fish and Wildlife Service.

Table 2. Descriptions of Pesticide Use Limitation Areas (PULAs) for Pilot Species.

Species (Common Name)	State(s) Where PULAs are Located	Avoidance PULA Extent	Minimization PULA Extent	Minimization Mitigations	Max PULA Extent (Acres)	StoryMap Link
Mitigation Area: Delineated location, geographically explicit						
Leedy's roseroot	MN, NY	Part of range (excluding area in South Dakota)	2600 ft extension area around avoidance PULA	Drift, Run-off, Species specific ¹	Less than 50,000	Link
Okeechobee gourd	FL	Range	2600 ft extension area around avoidance PULA	Drift, Run-off, Species specific ¹	Less than 200,000	Link
Poweshiek skipperling	MI, WI, MN	Designated critical habitat	2600 ft extension area around the avoidance PULA	Drift, Run-off	Less than 50,000	Link
Rusty patched bumble bee	IL, IN, IA, ME, MA, MN, OH, VI, WV, WI	Range	2600 ft extension area around the avoidance PULA	Drift, Run-off, Species specific ¹	Greater than 1,000,000	Link
Taylor's checkerspot	OR, WI	Range, which includes designated critical habitat	2600 ft extension area around the avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
White Bluffs bladderpod	WA	Range, which includes designated critical habitat	2600 ft extension area around the avoidance PULA	Drift, Species specific ¹	Less than 10,000	Link
Mitigation Area: Known habitat, not delineated (see Table 3 for habitat description)						
American burying beetle	AR, KS, MA, NE, OH, OK, RI, SD, TX	Range	Same as avoidance PULA	Drift, Species specific ¹	Greater than 1,000,000	Link
Attwater's prairie chicken	TX	PULA from Malathion BiOp	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
Buena Vista Lake ornate shrew	CA	Range, which is inclusive of designated critical habitat	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link

Species (Common Name)	State(s) Where PULAs are Located	Avoidance PULA Extent	Minimization PULA Extent	Minimization Mitigations	Max PULA Extent (Acres)	StoryMap Link
Lake Wales Ridge plants	FL	PULA from Malathion BiOp	2400 ft extension area around the avoidance PULA	Drift, Run-off, Species specific ¹	Greater than 1,000,000	Link
Madison Cave isopod	VA, WV	Range	Same as avoidance PULA	Drift, Run-off, Species specific ¹	Greater than 1,000,000	Link
Mead's milkweed	IL, IN, IA, KS, MO, WI	Range	Same as avoidance PULA	Drift, Run-off, Species specific ¹	Greater than 1,000,000	Link
Ouachita rock pocketbook	AR, OK	Range	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
Ozark cavefish	AR, KS, MO, OK	Range	Same as avoidance PULA	Drift, Run-off, Species specific ¹	Greater than 1,000,000	Link
Palmate-bracted bird's beak	CA	Range	Same as avoidance PULA	Drift, Run-off, Species specific ¹	Less than 1,000,000	Link
Rayed bean	IN, KY, MI, NY, OH, PA, TN, WV	Range	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
Riverside and San Diego fairy shrimp	CA	Range	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
Scaleshell mussel	AR, IL, MO, NE, OK, SD	Range	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
Winged mapleleaf	AR, MN, MO, OK, TN, WI	Range	Same as avoidance PULA	Drift, Run-off	Greater than 1,000,000	Link
Wyoming toad	WY	Range	Same as avoidance PULA	Drift, Run-off	Less than 200,000	Link

¹ There is a species-specific minimization mitigation for example timing restriction.

For the pilot species, there are two types of mitigations that need PULAs. The first type of mitigation is avoidance areas where the proposed mitigations involve prohibiting pesticide applications in the areas where the species is most likely to occur based on specific and refined information from the FWS (*e.g.*, spatially defined habitat or habitat descriptions). The second type of mitigation is minimization of exposures from applications within areas that could result in off-site transport (through spray drift or runoff/erosion) to the areas where the species occurs.

EPA is proposing two approaches for defining where mitigations would be applied. The first approach is when the species area is very specific and assumed to represent the areas where the species habitat occurs (specifically: Poweshiek skipperling, Rusty patched bumble bee, Taylor’s checkerspot, White bluffs bladderpod, Leedy’s roseroot, and Okeechobee gourd). For these six species, EPA is proposing separate PULAs for avoidance and minimization areas. To show an example, **Figure 2** depicts part of the PULAs proposed for the Poweshiek skipperling, including the avoidance and minimization areas. The second approach is when range likely includes areas that are not habitat for the species (all of the other pilot species, *e.g.*, Attwater’s prairie chicken). In this case, EPA is proposing one PULA for both avoidance and minimization, where the different areas are defined by the habitat description of the species (**Table 3**). **Figure 3** depicts the proposed PULA for the Attwater’s prairie chicken, which would include areas subject to both avoidance and minimization. When the PULA includes both avoidance and minimization, avoidance would be relevant to the species habitat, based on a description (*e.g.*, for Attwater’s prairie chicken, avoidance would apply to “grasslands”). Minimization would apply to all areas that do not match the habitat description for the species habitat. For the Attwater’s prairie chicken, the range covers large sections of multiple counties that are known to include several different types of non-grassland habitat (*e.g.*, agricultural areas) where the minimization language would apply.

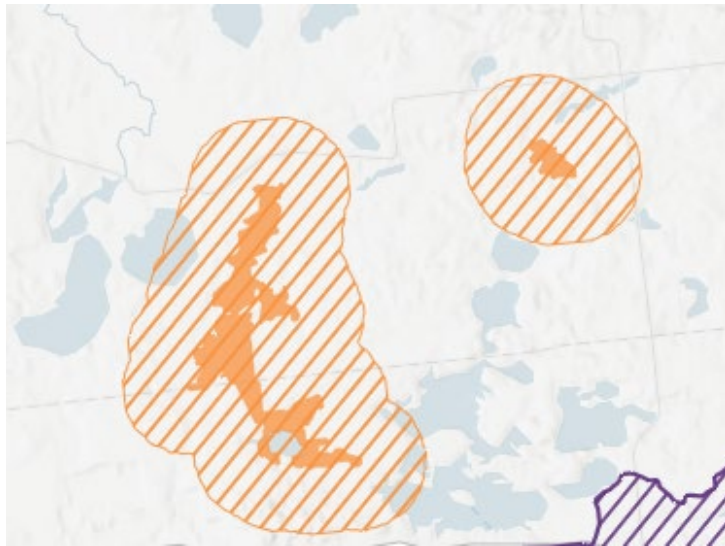


Figure 2. Subset of Poweshiek skipperling PULAs that depicts separate avoidance (solid orange) and minimization (orange hatch) areas.

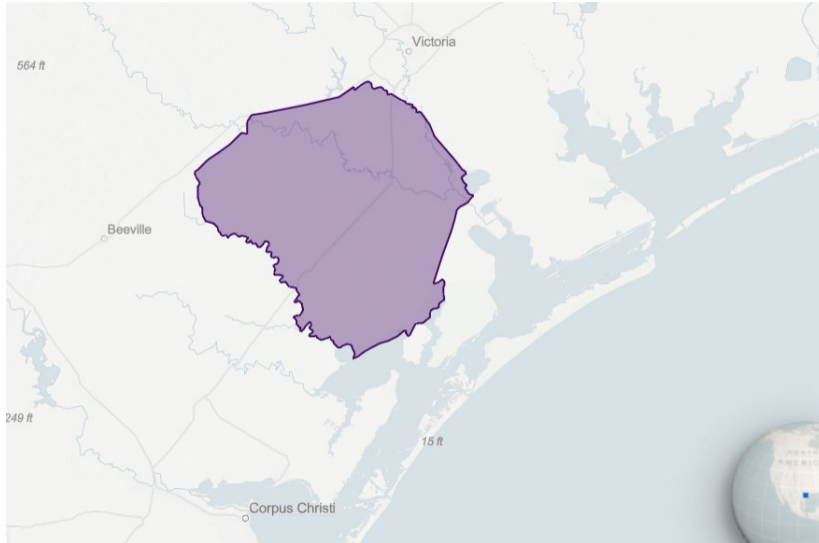


Figure 3. Subset of Attwater's prairie chicken PULA. Purple solid area represents avoidance and minimization areas.

Table 3 includes short descriptions of the habitats that are proposed for inclusion in the bulletins for the species where the PULA includes both avoidance and minimization areas. EPA used “plain language” for the short habitat descriptions so that these descriptions can be easily understood. This table also includes more detailed habitat descriptions provided by FWS (some species habitat descriptions are not yet available). To increase understanding of these habitats, these descriptions may be provided to users along with pictures (*e.g.*, pictures can be included within the vulnerable species StoryMaps).

Table 3. Habitat Descriptions (submitted by FWS experts) Used in Draft Pesticide Use Limitations for Avoidance and Minimization Measures.

Species (common name)	Short Habitat description	Detailed habitat description ¹
Lake Wales Ridge plants	Florida scrub and sandhills	Scrub and sandhill habitats are generally open habitats with sandy soil seen in patches between the trees, shrubs, and other plants that live in the habitat. Scrub may or may not have trees. If there are trees, they tend to be widely spaced in the case of pine trees, or clustered together in clumps in the case of the shrub-like oak trees found in these habitats. Between the trees (if present) you will see a variety of shrubs, flowering plants, grasses, and lichens
Mead's milkweed	Grasslands or prairies	Detailed description forthcoming.
Palmate-bracted bird's beak	Alkali sink-scrub habitats	Seasonally flooded, saline-alkali soils in low-lying areas throughout the Central Valley, CA. Occurs as patches of vernal meadows/pools in grassland habitat. Much of the suitable soils have been converted to agriculture and urban development.
Ozark cavefish	Karst groundwater systems	Features of karst groundwater systems of the Springfield Plateau aquifer that exists within a few hundred feet of the surface such as underground streams, pools, etc.
Madison Cave isopod	Sink holes, springs, disappearing streams or known cave systems	Not yet available
Riverside and San Diego fairy shrimp	Vernal pools: temporary wetlands that fill with rainwater in the winter and spring and then the water gradually evaporates away, until the pools become completely dry in the summer and fall.	San Diego Fairy Shrimp: Vernal pool habitat specialists, found in small, shallow vernal pools 5-30 cm (2-12 in) deep with a temperature range of 10-20°C (50-68°F). They are occasionally found in ditches and road ruts that support suitable conditions. Riverside Fairy Shrimp: Vernal pool habitat specialist, found in deep lowland vernal pools that retain water for 2-8 months, and are generally 12 in (30 cm) or deeper. They are also found in stock ponds, ditches and road ruts that support suitable conditions.
Ouachita rock pocketbook	Creeks, streams and large rivers	Not yet available
Rayed bean	Creeks, streams and large rivers, shallows of lakes	Not yet available
Scaleshell mussel	Creeks, streams and large rivers	Not yet available
Winged mapleleaf	Creeks, streams and large rivers	Locations with low sediment deposition and coarser and a more compacted sand and gravel mixture. Fast moving clean/clear water with low turbidity and sediment movement.
American burying beetle	Orchards, vineyards, grasslands, wetlands, meadows, forests, pastures, rangeland, and riparian zones	Not yet available

Draft for Public Comment

Species (common name)	Short Habitat description	Detailed habitat description ¹
Attwater's prairie chicken	Grasslands	Grasslands include savannas, prairies, and rangeland with few woody plants and a diversity of native or introduced grasses and forbs (<i>e.g.</i> , non-woody flowering plants).
Buena Vista Lake ornate shrew	Riparian or marsh areas near open water	Riparian or wetland vegetation communities with a dense understory that are in close proximity to a reliable body of water.
Wyoming toad	Floodplain ponds, rivers, and small seepage lakes	Not yet available

¹For the detailed habitat descriptions that are not yet available, EPA plans to update this information after it is provided by FWS.

For the six species¹¹ where EPA is proposing separate avoidance and minimization areas (not relying on habitat descriptions), avoidance areas are proposed to apply within spatial areas where the species is known to occur or within described species habitat or designated critical habitat. Minimization areas for the purpose of this pilot project are proposed to be within species range or designated critical habitat or within extensions surrounding the species locations. EPA is proposing a 2600 ft extension area around the range or designated critical habitat to address spray drift that may come in from outside the species range or designated critical habitat (*e.g.*, fields just adjacent to the species habitat but outside the range or designated critical habitat). EPA is proposing this distance as it is the farthest extent that pesticide spray drift is estimated to transport and, therefore, accounts for drift that may occur from applications adjacent to the species habitat that would otherwise contribute exposures to the pilot species. EPA is not proposing a 2600 ft spray drift or runoff/erosion buffer. EPA is also proposing to use this distance to expand the PULA for the Lake Wales Ridge species. This is because for malathion, FWS extended the original spatial extent of the Lake Wales Ridge area by 200 ft to account for the malathion specific spray drift distance. EPA is proposing to extend this PULA by 2400 ft to be consistent with the maximum spray distance used for the other species included in this pilot.

4.2. Pesticide use limitations (mitigation measures)

This section describes EPA's proposed avoidance, spray drift minimization and runoff/erosion minimization measures for the vulnerable species pilot. This section includes proposed avoidance and minimization language for the Vulnerable Species bulletins.

4.2.1. Avoidance

For species with designated critical habitats (or range) that serve as the basis of the Avoidance PULA (specifically: Poweshiek skipperling, Rusty patched bumble bee, Taylor's checkerspot, White bluffs bladderpod, Leedy's roseroot, and Okeechobee gourd), the following proposed bulletin language would apply to the entire range of a listed species or designated critical habitat:

Pesticide applications are prohibited within this area unless the applicator coordinates with the local FWS Ecological Services field offices to determine appropriate measures to ensure the proposed application is likely to have no more than minor effects on the species. The applicator must coordinate with FWS at least 3 months prior to the application.¹² FWS points of contact are available through the Information, Planning, and Consultation (IPaC) website (<https://ecos.fws.gov/ipac/>). If a permit has been granted by FWS¹³, no additional coordination with FWS is needed if a pesticide application is made in accordance with an existing FWS permit.

¹¹ Poweshiek skipperling, Rusty patched bumble bee, Taylor's checkerspot, White bluffs bladderpod, Leedy's roseroot, and Okeechobee gourd

¹² In the event of unexpected pest outbreaks-the applicator must coordinate with FWS to determine appropriate measures. Applications made by FWS or by partners approved by FWS in FWS lands, like Refuges, that rely on invasives control are exempt from these measures. This proposal is still being vetted by the species experts.

¹³ FWS permits include but are not limited to: depredation permit, scientific collection permit and other actions that that may act like a permit are a Biological Opinion.

For all other species, with Range or other defined PULAs, the following proposed bulletin language would apply to all habitat used by the species (see **Table 3** for habitat description relevant to avoidance area).

Pesticide applications are prohibited on [habitat description from Table 3] unless the applicator coordinates with the local FWS Ecological Services field offices to determine appropriate measures to ensure the proposed application is likely to have no more than minor effects on the species. The applicator must coordinate with FWS at least 3 months prior to the application⁸. FWS points of contact are available through the Information, Planning, and Consultation (IPaC) website (<https://ecos.fws.gov/ipac/>). If a permit has been granted by FWS⁹, no additional coordination with FWS is needed if a pesticide application is made in accordance with an existing FWS permit.

4.2.2. Spray drift minimization

The following mitigations apply to broadcast spray applications. EPA is not recommending that these proposed mitigations pertain to spray applications using handheld equipment, granular formulations, or seed treatment products. These spray drift mitigations are intended to include reasonable and prudent changes to application practices. EPA believes that these practices can be implemented by applicators, while still allowing use of the pesticides being applied. There is some degree of flexibility incorporated into these mitigations so that the applicator has options for achieving the desired reduction in exposure. In some cases, certain types of application methods or droplet sizes are prohibited, while for other application types, reasonable spray drift buffer distances are proposed. Those buffers are based on the location away from a treatment site where increasing distances result in a limited change in deposition. These buffers represent a practical extent of spray drift reduction that can be expected.

For the Ozark cavefish and the Madison Cave isopod, EPA expects the following pesticide use limitation language would apply to the bulletins:

1. *For aerial spray applications, do not apply within 300 ft of sink holes, springs, disappearing streams or known openings of cave systems.*
2. *For ground broadcast spray, do not apply within 100 ft of sink holes, springs, disappearing streams, or known cave systems.*
3. *For airblast applications, do not apply within 150 ft of sink holes, springs, disappearing streams, or known cave systems.*

For the four mussel species, fairy shrimp, Attwater's prairie chicken, Buena Vista Lake ornate shrew, and Wyoming toad, EPA expects that the following pesticide use-limitation language would apply to the bulletins:

1. *Aerial and ground spray applications with very fine to fine droplets¹⁴ are prohibited.*
2. *For aerial spray applications with medium or coarser droplets, if winds are blowing from the treated site to [habitat description from Table 3] and there is no continuous wind break or shelter belt in between, the following buffers are required:*
 - a. *300 ft for medium or coarser droplets.*
 - b. *200 ft for coarse or coarser droplets.*
 - c. *If a wind break or shelter belt is present, the above buffers can be reduced by half.*

¹⁴ American Society of Agricultural & Biological Engineers Standards 641 and 572

3. *For ground boom spray applications¹⁵ with medium or coarser droplets, if winds are blowing from the treated site to [habitat description from Table 3] and there is no continuous wind break or shelter belt, the following buffers are required:*
 - a. *For applications that are made using medium or coarser droplets, a 100 ft buffer is required on the down-wind side of the application site between of the end of the last spray row and [habitat description].*
 - i. *The required buffer can be reduced to 50 ft if a hooded sprayer is used, or a wind break or shelter belt is present higher than the spray release height.*
4. *For airblast applications:*
 - a. *At row ends and when spraying the outer row, sprays must be directed into the canopy, and outward pointing nozzles must be turned off.*
 - b. *For non-bearing orchards, on the down-wind side of the application site, a 150 ft buffer is required between the end of the last spray row and [habitat description from Table 3].*
 - c. *For bearing orchards, on the down-wind side of the application site, a 10 ft buffer is required between the end of the last spray row and [habitat description from Table 3].*
 - d. *If a wind break or shelter belt is present, the above buffers can be reduced by half.*
5. *When a buffer is required, all landcovers between the last spray row and [habitat description from Table 3] are counted as part of the buffer footage. The following are examples of areas that may be included as part of the buffer footage:*
 - a. *Agricultural fields, including the treated field or adjacent fields.*
 - b. *Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated area.*
 - c. *Areas occupied by a building and its perimeter, silo, or other man-made structure with walls and/or roof.*
 - d. *Areas maintained for runoff/erosion or drift control, such as vegetative filter strips, field borders, hedgerows, and other areas on the mitigation menu*
 - e. *Conservation Reserve Program and Agricultural Conservation Easement Program (ACEP) areas¹⁶*

For the remaining pilot species, EPA is proposing different drift mitigations, some of which include longer buffer distances. This is based on comparisons of exposure information and insect and invertebrate toxicity data for the representative pesticides (described in **Section 5**). Therefore, EPA is proposing the following drift minimization language for the bulletins of Poweshiek skipperling, Rusty patch bumble bee, Taylors checkerspot, American burying beetle, the Lake Wales Ridge plants, Mead's milkweed, Leedy's roseroot, Okeechobee gourd, Palmate-bracted bird's beak, White Bluffs bladderpod:

1. *Aerial and ground spray applications with very fine to fine droplets¹⁷ are prohibited.*

¹⁵ This does not apply to backpack or hand wand applications.

¹⁶ The CRP is a land conservation program administered by the Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Agricultural Conservation Easement Program (ACEP) supports long-term viability of productive farmland from being converted into non-agricultural areas.

¹⁷ American Society of Agricultural & Biological Engineers Standards 641 and 572

2. *For aerial spray applications with medium or coarser droplets, if winds are blowing from the treated site to [habitat description from Table 3] and there is no continuous wind break or shelter belt in between, the following buffers are required:*
 - a. *600 ft for medium or coarser droplets.*
 - b. *400 ft for coarse or coarser droplets.*
 - c. *If a wind break or shelter belt is present, the above buffers can be reduced by half.*
3. *For ground boom spray applications¹⁸ with medium or coarser droplets, if winds are blowing from the treated site to [habitat description from Table 3] and there is no continuous wind break or shelter belt, the following buffers are required:*
 - a. *For applications that are made using medium or coarser droplets, a 200 ft buffer is required on the down-wind side of the application site between the end of the last spray row and [habitat description from Table 3].*
 - i. *The required buffer can be reduced to 100 ft if a hooded sprayer is used, or a wind break or shelter belt is present higher than the spray release height.*
4. *For airblast applications:*
 - a. *At row ends and when spraying the outer row, sprays must be directed into the canopy, and outward pointing nozzles must be turned off.*
 - b. *For non-bearing orchards, on the down-wind side of the application site, a 150 ft buffer is required between the end of the last spray row and [habitat description from Table 3].*
 - c. *For bearing orchards, on the down-wind side of the application site, a 10 ft buffer is required between the end of the last spray row and [habitat description].*
5. *When a buffer is required, all landcovers between the last spray row and [habitat description from Table 3] are counted as part of the buffer footage. The following are examples of areas that may be included as part of the buffer footage:*
 - a. *Agricultural fields, including the treated field or adjacent fields.*
 - b. *Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated area.*
 - c. *Areas occupied by a building and its perimeter, silo, or other man-made structure with walls and/or roof.*
 - d. *Areas maintained for runoff/erosion or drift control, such as vegetative filter strips, field borders, hedgerows, and other areas on the mitigation menu*
 - e. *Conservation Reserve Program and Agricultural Conservation Easement Program (ACEP) areas¹⁹*

¹⁸ This does not apply to backpack or hand wand applications.

¹⁹ The CRP is a land conservation program administered by the Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Agricultural Conservation Easement Program (ACEP) supports long-term viability of productive farmland from being converted into non-agricultural areas.

4.2.3. Runoff/Erosion minimization

The majority of these pilot species could be exposed to pesticides that are transported via runoff/erosion from pesticide use sites to their location or designated critical habitats. The proposed mitigations are intended to prevent pesticide applications immediately prior to runoff/erosion events and to provide growers with a number of options to reduce pesticide exposures off of treated fields from runoff/erosion when a pesticide is used within or adjacent to the range of the pilot species. EPA has determined that all of the species presented in this pilot project are susceptible to runoff/erosion exposure, except for the White Bluff's bladderpod and the American Burying Beetle irrespective of the pesticide. For the White Bluff's bladderpod, this is because the species lives in very specific locations on the slopes and at the top of the White Bluffs in Eastern Washington.²⁰ For the American burying beetle, adults are expected to be exposed to spray while they are seeking mates above ground; however, larvae and adults are not considered likely to be impacted by pesticide exposure from runoff/erosion.

For those 25 species for which runoff/erosion is a concern, EPA is proposing the following pesticide use-limitation language in Bulletins (including **Table 4**):

1. *Do not apply when soil in the area to be treated is saturated (if there is standing water on the field or if water can be squeezed from soil).*
2. *Do not irrigate to the point of runoff. Follow label directions if pesticide needs to be watered into the soil for efficacy.*
3. *Do not apply if NOAA/National Weather Service predicts 50% chance or greater of 1 or more inches of rainfall to occur within 48 hours following application.²¹*
4. *Four of the measures in **Table 4** are required to reduce potential transport of pesticides off treated fields from runoff water and soil erosion into the pilot species' habitats. Formal participation in a State or Federal soil and runoff conservation plan satisfies this requirement.*
5. *The following exemptions to #1-4 apply:*
 - a. *If the field has subsurface drainage installed, the mitigation measures are not applicable. The subsurface tile drains must release the effluent (water) into water-controlled drainage structures or saturation buffer zones.*
 - b. *If the lands are managed with a site-specific runoff and/or erosion plan implemented according to the recommendations of a recognized conservation program, then no additional runoff/erosion mitigations are needed. Recognized conservation programs include but are not limited to those run by federal and state agencies, a state university extension programs, National Alliance of Independent Crop Consultants, or certified agricultural conservation specialists.*

²⁰ Runoff/erosion is not considered a significant pathway for White Bluffs bladderpod because of its location on the slopes and peak of White Bluffs, which are upslope of potential use sites (e.g., surrounding agriculture).

²¹ Detailed National Weather Service forecasts for local weather conditions may be obtained on-line at: <http://www.nws.noaa.gov>, on NOAA weather radio, or by contacting your local National Weather Service Forecasting Office."

Table 4. Draft options for runoff/erosion measures for selected pesticide use site¹.

Runoff/Erosion Mitigation Practice	Use Site				
	1: Field Crops ²	2: Orchards	3: Specialty Crops ³	4: Non-Ag ⁴	5: Rice ⁵
Applications					
Avoid Using Pesticide of a Highly Toxic Hazard Class to invertebrates	✓	✓	✓	✓	✓
40% rate reduction ⁶	✓	✓	✓	✓	✓
In Field					
Contour Farming	✓	✓	✓	--	--
Cover Crop	✓	✓	✓	✓	--
In-field Vegetative Filter Strip ⁷	✓	✓	✓	✓	--
Mulching	✓	✓	✓	✓	
Residue and Tillage management	✓	--	✓	--	--
Terrace Farming	✓	✓	✓	--	--
Grassed Waterways	✓	✓	✓	✓	--
Field Characteristics					
Field with <2% slope	✓	✓	✓	--	✓
Adjacent to the Field or In-between field and Protection Area					
Vegetative Filter Strips ⁷	✓	✓	✓	✓	--
Riparian Area (>10m width from average high-water mark to use site)	✓	✓	✓	✓	--
Controlled Drainage					
Constructed wetlands or Water and Sediment Control Basins	✓	✓	✓	✓	✓

¹ If a use site indicates a “—” for a particular mitigation practice, the practice can be still considered for incorporation into future crops (e.g., planting a new orchard on contour terraces), or relied upon if already in place (e.g., terraces in vineyards). A ✓ indicates that the practice may be used by some of the crops/uses within the use site category and can be counted as mitigation practices.

² Including corn, cotton, sorghum, soybeans and wheat.

³ Fruits and vegetables, horticulture, and nursery crops.

⁴ Including, but not limited to golf courses, turf, forest, conservation areas, mosquito adulticides, rights of ways, roadsides, fence rows, rangeland, and pasture.

⁵ At this time, EPA has only identified 4 mitigation practices for rice. EPA is considering other mitigation practices that may also help reduce exposures from pesticide use on rice.

⁶ Rate reductions are based on the max single application. Rate reductions can be achieved via banded application, spot treatment, precision agriculture or sprayers.

⁷ Using a vegetative filter strip is required on the downslope side of the field between the field/application site and protected terrestrial, wetland, and aquatic natural areas and habitats. The minimum width is required to be 30 feet.

As detailed in the technical document, available data on the efficacy of run-off mitigations varies considerably. Runoff/erosion mitigations tend to exhibit a large range of efficacies due to chemical characteristics, field properties, precipitation extremes and landscape level components. As the data demonstrates, the mitigations are most effective when the user selects them with a consideration of the

application sites’ landscape position, soil type, underlying geology, and local hydrology. An assessment of the applications sites’ land use practices can also inform which mitigations are appropriate for the given situation. For example, if implementing mitigations in an agricultural setting, the grower would decide what type of tillage and cropping strategy is on field and appropriate, as well as what season these mitigations are being implemented in when the species mitigation timing requirement does not specify a season. Understanding water pathways and how susceptible a field is to runoff/erosion can also improve the effectiveness of a mitigation. For example, selecting mitigations that will not be overwhelmed by large volumes of water and/or undercut by drainage systems increases the confidence that higher efficiencies will be yielded (or something like that). Pesticide users can work with conservation specialists to guide decisions when selecting viable and the most effective options from the mitigation menu for their specific site, and if a conservation plan is in place the user is exempt from implementing these mitigations. This is just a brief example of the considerations that are at play when selecting successful mitigations from the mitigation menu, but a basic understanding of these concepts will help the user to make informed decisions.

4.1.4. Timing restrictions

For all but one of the pilot animal species, EPA expects that the proposed mitigations would apply year-round. For American burying beetle, EPA expects there are special conditions when the avoidance and drift minimization mitigations would apply. Adults are active at night when temperatures are above 60°F for multiple nights. Therefore, EPA is proposing the avoidance and minimization mitigations for the American burying beetle only apply when temperatures are forecasted to be above 60 degrees F for three consecutive nights or more.

For all of the pilot plant species, except the Lake Wales Ridge species and the Okeechobee gourd, EPA based insecticide timing restrictions on when the plants are expected to flower. With this approach, EPA assumed that restricting insecticide applications during bloom will protect the listed plant from indirect effects due to adverse effects to pollinators since mortality to pollinators in the area of the species could result in adverse reproductive effects to the plants that require pollination. Herbicide restrictions are proposed when the vegetative and reproductive parts of the plant are present above ground. **Table 5** includes the species-specific timing on when the vegetative parts are expected to be present above ground and when the species flowers. If this information is not available, EPA proposes to apply the herbicide and insecticide restrictions year-round. For the Lake Wales Ridge species, because there are so many species in the same area and they are expected to have different flowering periods and different times where they are present above ground, EPA is proposing year-round restrictions.

Table 5. Timing restrictions on spray drift mitigations for herbicides and insecticides for plant species.

Species	Vegetative part of plant is present* (herbicide timing restriction)	Flowering period* (insecticide timing restrictions)
Lake Wales Ridge plants	Variable across species, year-round restriction	Variable across species, year-round restriction
Mead's milkweed	Unknown (assume year-round)	May – June
Okeechobee gourd	Unknown (assume year-round)	Unknown (assume year-round)
White Bluffs bladderpod	Unknown (assume year-round)	May – July
Leedy's roseroot	MN: May 1- Sept 30 NY: April 15-Nov 15	MN: June 1-June 30 NY: May 15-Aug 15
Palmate bracted bird's beak	Unknown (assume year-round)	May - October

*Timing information from Appendix C of FWS 2022.

5. Evaluation of proposed pesticide use limitations

5.1. Representative pesticides used in evaluation

The vulnerable species proposed mitigations are expected to apply broadly to groups of conventional pesticides (*e.g.*, insecticides, herbicides, fungicides) for non-residential outdoor registered uses. For this evaluation, EPA selected representative conventional pesticide active ingredients from among the hundreds of registered pesticides. EPA identified the representative pesticides using available monitoring data from aquatic and terrestrial habitats relevant to the pilot species. For aquatic habitats, EPA selected pesticides with detections reported in the Water Quality Portal.²² Monitoring data from the Water Quality Portal represent samples collected from streams and rivers. Terrestrial monitoring data was provided by FWS. These data were collected by FWS and the Minnesota Zoological Garden from 2014-2021 at sites relevant to the Poweshiek skipperling and two other listed species not included in this pilot (*i.e.*, Dakota skipper and Mitchell's satyr butterfly). Collected samples included larval host grasses, plant litter, and soil. Monitoring data was used to identify the representative pesticides for this evaluation because their detections indicate that the pilot species are potentially being exposed to these pesticides. Therefore, EPA believes it is appropriate to evaluate the effectiveness of the mitigations for those pesticides where potential exposure is supported by empirical monitoring data in habitats and locations relevant to the pilot species.

Table 6 includes representative pesticides used in this evaluation. Example pesticides include insecticides, fungicide and herbicides. Within each broad type of pesticide, there are several different classes represented, *e.g.*, organophosphates, neonicotinoids and triazines. EPA used environmental fate and toxicity information from recent assessments for the representative pesticides (*e.g.*, recent FIFRA risk assessments, biological evaluations, etc.). The following sections summarize estimated environmental exposures, toxicity endpoints and RQs for example pesticides. **Section 9** includes references for the assessments used to obtain the information.

²² <https://www.waterqualitydata.us/>

Table 6. Pesticides considered in mitigation evaluations for vulnerable species by pesticide type.

Pesticide name	Pesticide type	Pesticide class	Monitoring data source where detected
Acephate/methamidophos	Insecticide/degradate	Organophosphate	Water Quality Portal
Carbaryl	Insecticide	Carbamate	Water Quality Portal
Malathion	Insecticide	Organophosphate	Water Quality Portal
Diazinon	Insecticide	Organophosphate	Water Quality Portal
Fipronil	Insecticide	Phenylpyrazole	Water Quality Portal
Imidacloprid	Insecticide	Neonicotinoid	FWS/MN zoo and Water Quality Portal
Permethrin	Insecticide	Pyrethroid	Water Quality Portal
Methomyl	Insecticide	Carbamate	Water Quality Portal
Azoxystrobin	Fungicide	Quinone Outside Inhibitors	FWS/MN zoo and Water Quality Portal
Propiconazole	Fungicide	Quinone Outside Inhibitors	FWS/MN zoo and Water Quality Portal
Chlorothalonil	Fungicide	Chloronitrile	FWS/MN zoo and Water Quality Portal
2,4-D	Herbicide	Phenoxyacetic acid	Water Quality Portal
Atrazine	Herbicide	Triazine	FWS/MN zoo and Water Quality Portal
Bromacil	Herbicide	Uracil herbicide	Water Quality Portal
Diuron	Herbicide	Phenylurea	Water Quality Portal
Glyphosate	Herbicide	Phosphono amino acid	Water Quality Portal
Linuron	Herbicide	Urea Herbicide	Water Quality Portal
Metolachlor	Herbicide	Chloroacetimide	FWS/MN zoo and Water Quality Portal
Halauxifen	Herbicide	Picolinic acid	Water Quality Portal

5.2. Toxicity endpoints used in evaluations

EPA used standard toxicity data available for the representative pesticides to assess potential direct effects to the listed pilot species as well as potential effects to the prey, pollination, habitat and/or dispersal (PPHD) of the pilot species. **Table 7** presents the taxa used to represent direct effects and PPHD. For animals, EPA used standard acute toxicity endpoints (median lethal dose or concentration, LD₅₀ or LC₅₀). When assessing potential direct effects to the pilot animal species, EPA used the available slope information to extrapolate down to the 10% mortality level (*i.e.*, LD₁₀ or LC₁₀). EPA used the ten percent mortality to represent the background mortality level in test organisms and thus represent a no effect level. For plants, EPA used IC₂₅ (25% growth inhibition concentration) for terrestrial species and IC₅₀ values for aquatic species because these are the toxicity values generated in standard studies submitted by registrants. When multiple toxicity endpoints were available for the same taxon, EPA used the most sensitive, reliable, and scientifically valid value. For terrestrial plants, EPA used the 5th percentile IC₂₅ value of available species sensitivity distributions for herbicides. **Tables 8 and 9** include the toxicity endpoints for the representative pesticides and taxa relevant to the pilot species. These toxicity data are from recent EPA assessments for the representative pesticides. **Section 9** includes citations for the specific assessments used in the analysis.

Table 7. Taxa used to assign toxicity endpoints to pilot species for evaluation of potential direct effects and effects to prey, pollination, habitat and/or dispersal (PPHD) of pilot species.

Pilot species	Taxon used for Direct effects	Taxa used for effects to PPHD
Lake Wales Ridge plants (Avon Park harebells, Garrett's mint, wireweed, scrub blazingstar, short-leaved rosemary, scrub mint, Florida ziziphus)	Terrestrial Plant	Terrestrial invertebrates (pollination)
Mead's milkweed	Terrestrial Plant	Terrestrial invertebrates (pollination)
Leedy's roseroot	Terrestrial Plant	Terrestrial invertebrates (pollination)
Okeechobee gourd	Terrestrial Plant	Terrestrial invertebrates (pollination)
Palmate-bracted bird's beak	Terrestrial Plant	Terrestrial invertebrates (pollination)
White bluffs bladderpod	Terrestrial Plant	Terrestrial invertebrates (pollination)
Ozark cavefish	Fish	Not assessed
Madison cave isopod	Aquatic invertebrate	Not assessed
Riverside and San Diego fairy shrimp	Aquatic invertebrate	Not assessed
Ouachita rock pocketbook	Mussel	Fish
Rayed bean	Mussel	Fish
Scaleshell mussel	Mussel	Fish
Winged mapleleaf	Mussel	Fish
American burying beetle	Terrestrial Invertebrate	Not assessed
Poweshiek skipperling	Terrestrial Invertebrate	Terrestrial Plant (diet, habitat)
Rusty patched bumble bee	Terrestrial Invertebrate	Terrestrial Plant (diet, habitat)
Taylor's checkerspot	Terrestrial Invertebrate	Terrestrial Plant (diet, habitat)
Attwater's prairie chicken	Bird	Terrestrial insects (diet), Terrestrial Plant (diet, habitat)
Buena Vista Lake ornate shrew	Mammal	Terrestrial insects (diet), Wetland Plants (habitat)
Wyoming toad	Fish and Bird (surrogates for amphibians)	Terrestrial insects (diet), Aquatic invertebrates, Wetland Plants (habitat)

Table 8. Acute animal toxicity data used to calculate RQs for representative pesticides.

Pesticide	Terrestrial invertebrates		Birds		Mammals		Fish		Aquatic Invertebrates		Mussels	
	LD50 (mg/kg-bw)	Slope ¹	LC50 (mg/kg-diet)	Slope ¹	LC50 (mg/kg-diet)	Slope ¹	LC50 (µg/L)	Slope ¹	LC or EC50 (µg/L)	Slope ¹	LC or EC50 (µg/L)	Slope ¹
Acephate	9.4	8.6	720	7.3	320	5.2	850000	4.5	1100	1.6	NA	NA
Methamidophos*	11	10.3	42	4.6	16	13	5600	4.5	26	4.9	NA	NA
Carbaryl	0.11	4.5	2300	4.5	100	7.7	1100	4.5	1.6	4.5	6600	4.5
Malathion	1.2	3.2	110	6.6	1600	4.5	21	3	1	4.5	NC	NC
Diazinon	0.15	4.9	1.2	4.5	100	2.9	85	4.5	0.21	4.5	1400	4.5
Fipronil	0.032	4.5	11	4.5	16	4.5	83	4.5	0.22	4.5	NA	NA
Imidacloprid	0.015	1.6	17	4.5	420	4.5	26000	4.5	1.4	1.7	4000	4.5
Permethrin	0.024	4.5	NC	NC	8900	4.5	0.79	4.5	0.0066	4.5	NA	NA
Methomyl	0.5	9	2.0	4.5	7.1	4.5	340	4.2	3.9	4.5	3.9	4.5
Azoxystrobin	NC	NC	NC	NC	NC	NC	470	4.5	56	4.5	1300	4.5
Propiconazole	NC	NC	750	4.5	1500	4.5	850	4.5	500	4.5	1300	4.5
Chlorothalonil	NC	NC	1700	4.5	240	4.5	18	5.6	54	4.5	3.6	4.5
2,4-D	NC	NC	3000	4.5	440	4.5	NC	NC	25000	4.5	NA	NA
Atrazine	NC	NC	5800	4.5	160	4.5	27	4.5	720	4.5	NC	NC
Bromacil	1500	4.5	NC	NC	800	4.5	36000	4.5	110000	4.5	130000	4.5
Diuron	NC	NC	960	4.5	4700	4.5	1300	4.5	180	4.5	NA	NA
Glyphosate	NC	NC	5800	3.8	1900	4.5	2000	4.5	48	4.5	NC	NC
Linuron	940	4.5	940	4.5	2600	4.5	890	4.5	120	4.5	NA	NA
Metolachlor	NC	NC	2200	4.5	2600	4.5	3200	4.5	4950	4.5	1600	4.5
Halauxifen	NC	NC	2300	4.5	5000	4.5	2000	4.5	1100	4.5	NA	NA

NC = not calculated because no effects observed at highest test concentration

NA = not available

¹When slope was not available, default of 4.5 was used.

*Degradate of acephate

Table 9. Plant toxicity endpoints used to calculate RQs for representative pesticides.

Pesticide	Nonvascular Aquatic EC50 (µg/L)	Vascular Aquatic EC50 (µg/L)	Monocot IC25 (lb/A)	Dicot IC25 (lb/A)
Acephate	1040000	1040000	4.0	4.0
Methamidophos*	679000	3650	4	4
Carbaryl	340	24000	7.8	8.8
Malathion	500	500	NC	NC
Diazinon	3700	3700	4	3.2
Fipronil	7.6	>100	1.5	1.5
Imidacloprid	6700	5800	0.5	0.5
Permethrin	>4.4	>3.2	NC	NC
Methomyl	60000	60000	3.0	3.0
Azoxystrobin	49	3400	1	0.59
Propiconazole	21	3500	0.32	0.039
Chlorothalonil	12	640	4.4	4.4
2,4-D	3900	300	0.037	0.0038
Atrazine	4.6	4.6	0.0037	0.0037
Bromacil	6.8	45	0.027	0.0047
Diuron	3.1	13	0.0208	0.0017
Glyphosate	14	14	0.0037	0.0037
Linuron	14	27	0.034	0.014
Metolachlor	8	14	0.016	0.0041
Halauxifen	1300	0.14	0.00013	0.000010

NC = not calculated because no effects observed at highest test concentration

*Degradate of acephate

5.3. Estimated exposure information used in evaluations

For each pesticide assessed, EPA used Environmental Exposure Concentrations (EECs) for both aquatic and terrestrial environments, using the maximum application rates and scenarios. EECs are from EPA's standard models used in ecological risk assessments.²³ EPA also considered different dietary exposures to terrestrial animals using upper bound and mean Kenaga²⁴ values incorporated into the T-REX model. EPA used the Pesticide In water Calculator to estimate exposures that bound small and medium sized water bodies.²⁵ EPA used edge of field runoff/erosion concentrations as an upper bound of exposures in small water bodies (e.g., vernal pools) and the standard farm pond to represent exposures in medium sized water bodies. EPA's EECs represent the highest value predicted on a single day out of 10 years. For plant exposures, EPA used EECs for drift and runoff/erosion that were generated using the Plant Assessment Tool.²⁶ PAT v2.0 and v.2.8 were used to generate EECs. **Table 10** presents the maximum application rates used to assess exposures of the representative pesticides. **Tables 11 and 12** include the terrestrial and aquatic EECs (respectively) used to derive RQs for animals.

EPA used EECs from previous assessments. Since the time of the assessments, there may have been changes to pesticide labels that could affect EECs as a result of FIFRA (e.g., registration review actions) or ESA (e.g., ongoing consultations) activities; however, EPA screened EECs from these assessments to try and account for these changes when considering relevant exposure concentrations. The EECs used in this exercise are provided to give a range of potential exposure values that could result from use of a variety of pesticides but may not necessarily reflect recent changes to labels. In selecting relevant EECs for the pesticides from risk assessments, EPA tried to focus on uses that were still relevant to current labels for these pesticides, if they had changed, and focused on use sites that overlap with the vulnerable species locations.

²³ <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/models-pesticide-risk-assessment>

²⁴ Kenaga values refer to upper bound and mean residue concentrations for short grass, tall grass, broadleaf plants and fruits/seeds/pods as presented by Hoerger and Kenaga (1972) and modified by Fletcher *et al.* (1994). These concentrations are determined using nomograms that relate to application rate of a pesticide to residues remaining on dietary items of terrestrial organisms.

²⁵ <https://www.epa.gov/endangered-species/revised-method-national-level-listed-species-biological-evaluations-conventional>

²⁶ <https://www.epa.gov/endangered-species/models-and-tools-national-level-listed-species-biological-evaluations-triazine>

Table 10. Maximum application rates used to estimate exposures.

Pesticide	Single max rate (lb/A) used to estimate exposures ¹
Acephate	4
Methamidophos*	3.1
Carbaryl	12
Malathion	5.1
Diazinon	3
Fipronil	1.8
Imidacloprid	0.5
Permethrin	0.007
Methomyl	0.9
Azoxystrobin	0.33
Propiconazole	1.8
Chlorothalonil	2.1
2,4-D	4
Atrazine	4
Bromacil	6.4
Diuron	6.4
Glyphosate	8
Linuron	3
Metolachlor	2.8
Halauxifen	0.0091

¹ These rates were determined to be most representative considering the range of available application rates and use sites most relevant to overlap with vulnerable species ranges/CHs

*Degradate of acephate

Table 11. Estimated exposures on dietary items of terrestrial animals (grass, arthropods) and contact exposures to terrestrial invertebrates (arthropods).¹

Pesticide	Short grass		Tall grass		Arthropods	
	Upper	Mean	Upper	Mean	Upper	Mean
Acephate	2500	340	1100	140	960	260
Methamidophos*	1600	260	740	110	630	200
Carbaryl	2900	1000	1300	440	1200	800
Malathion	1200	430	560	270	480	330
Diazinon	720	260	330	110	280	200
Fipronil	430	150	200	65	170	120
Imidacloprid	120	43	55	18	47	33
Permethrin	300	0.60	140	0.25	170	0.46
Methomyl	580	210	270	88	230	160
Azoxystrobin	240	86	110	37	96	66
Propiconazole	1200	150	530	64	450	120
Chlorothalonil	960	340	440	140	380	260
2,4-D	960	340	440	140	380	260
Atrazine	1000	370	480	160	410	280
Bromacil	1500	540	700	230	600	420
Diuron	1700	520	800	200	690	380
Glyphosate	9600	67	4400	31	3800	26
Linuron	1000	260	470	110	400	200
Metolachlor	660	230	300	99	260	180
Halauxifen	NA	NA	NA	NA	NA	NA

¹ EECs were based on most representative uses considering the range of available application rates and use sites most relevant to overlap with vulnerable species ranges/CHs

NA = Not available

*Degradate of acephate

Table 12. Highest 1-in-10 year EECs for edge of field and standard pond. Values used to calculate RQs.¹

Pesticide	Maximum EEC from available scenarios (µg /L)	
	Edge of field	Standard pond
Acephate	NA	200
Methamidophos*	NA	200
Carbaryl	6400	640
Malathion	1400	380
Diazinon	500	300
Fipronil	NA	0.016
Imidacloprid	230	35
Permethrin	NA	0.45
Methomyl	5300	200
Azoxystrobin	NA	150
Propiconazole	NA	200
Chlorothalonil	NA	49
2,4-D	NA	140
Atrazine	1500	100
Bromacil	NA	570
Diuron	NA	190
Glyphosate	20000	2000
Linuron	NA	140
Metolachlor	NA	150
Halauxifen	NA	0.15

¹ EECs were based on most representative uses considering the range of available application rates and use sites most relevant to overlap with vulnerable species ranges/CHs

NA = Edge of field EECs not available in assessment

*Degradate of acephate

5.4. Comparison of exposure and toxicity information

EPA compared estimated exposures to standard toxicity endpoints by calculating risk quotients (RQs). RQs are one of EPA's risk assessment tools that communicates risk estimation which combines exposure profiles (*i.e.*, the findings of exposure characterization) and effects from exposure. When an RQ is >1, exposure exceeds the toxicity endpoint. In this analysis, RQs are used to determine the relative difference in order of magnitude between estimated exposure and effect. Order of magnitude precision is chosen here because this analysis is relying upon general, conservative models, and toxicity data to represent specific species and locations. The RQs do not represent refined analyses that account for variability and species-specific considerations; however, they are considered useful in determine the relative amount of difference between exposure and effects levels and the relative amount of exposure reduction that the mitigations need to achieve.

5.4.1. Terrestrial animals

EPA calculated RQs for terrestrial taxa that are associated with the vulnerable species, including birds, mammals, and terrestrial invertebrates. RQs presented in **Table 13** include those based on LD₁₀ endpoints for direct effects to birds, mammals, and terrestrial invertebrates, and LD₅₀ endpoints for indirect effects to terrestrial invertebrates. **Table 13** does not include RQs for the representative herbicides or fungicides because the RQs indicate that exposures are below the acute toxicity levels for birds, mammals, and terrestrial invertebrates. When considering the representative insecticides and their RQs presented in **Table 13**:

- for mammals, exposures are as much as an order of magnitude above toxicity endpoints,
- for birds, exposures are as much as two orders of magnitude above toxicity endpoints,
- For direct effects to terrestrial invertebrates, exposures are 1-4 orders of magnitude above toxicity endpoints and
- For indirect effects to species that depend on terrestrial invertebrates (for diet and pollination), exposures are 1-3 orders above toxicity endpoints.

Table 13. RQs for effects from insecticides to terrestrial animal taxa (prior to mitigation)

Pesticide	Direct effects to pilot species ¹			Effects to prey or pollination
	Attwater's prairie chicken and Wyoming Toad	Buena Vista Lake ornate shrew	Poweshiek skipperling, Taylor's checkerspot, rusty patched bumble bee and American burying beetle	Terrestrial Invertebrates
Acephate	0.7	1.8	39	28
Methamidophos*	12	21	25	19
Carbaryl	0.9	14	14000	7200
Malathion	6.7	0.5	690	270
Diazinon	410	6.6	2400	1300
Fipronil	26	18	6900	3700
Imidacloprid	4.8	0.2	14000	2200
Permethrin	0	0	36	19
Methomyl	190	55	440	320

¹Direct RQs based on LC₁₀/LD₁₀, short grass mean Kenaga for birds and mammals, arthropods mean Kenaga for terrestrial invertebrates.

*Degradate of acephate

RQs presented in **Table 13** represent exposures directly on treated fields. These values can be used to evaluate the effectiveness of the drift mitigations. Basically, spray drift deposition when mitigations are applied would need to be 1-4 orders of magnitude below the on-field exposures to not exceed the toxicity endpoints for direct effects to the terrestrial invertebrate pilot species (*i.e.*, Poweshiek skipperling, Taylor's checkerspot, Rusty patched bumble bee, and American burying beetle).

Because the bird, amphibian, and mammal pilot species consume terrestrial invertebrates, spray drift reductions needed for the Attwater's prairie chicken, Wyoming toad and the Buena Vista Lake ornate shrew need to achieve 1-3 orders of magnitude reduction to address the potential indirect effects to

their diets. EPA expects that this level of reduction would also address the potential for direct effects to these species.

5.4.2. Aquatic animals

Table 14 shows the RQs based on acute toxicity LC₁₀S, calculated from LC₅₀S previously used for risk assessment. **Table 15** presents the RQs that are calculated using the same EECs and LC₅₀ values to represent effects to listed species that rely upon aquatic invertebrates for prey. EECs and toxicity data used to calculate RQs for the representative pesticides are provided in **Tables 8 and 12**. The highest EECs represent combined drift and runoff/erosion exposure and are used to provide an estimate of the level of mitigations that would be needed to reduce both drift and runoff/erosion exposures. When considering the representative pesticides and their RQs presented in **Table 14**:

- For non-mussel invertebrates (fairy shrimp and isopod), exposures are 2-3 orders of magnitude above toxicity endpoints.
- For the mussels, exposures are as much as 1-2 orders of magnitude (when considering both the edge of field and standard pond EECs) above available toxicity endpoints.
- For the Ozark cave fish and aquatic phase Wyoming toad, exposures are as much as 1 order of magnitude above the toxicity endpoint for the farm pond and 2 orders of magnitude above for edge of field EECs. This characterization also applies to possible effects to dispersal of mussels by effects to fish.
- Based on the aquatic invertebrate EECs and toxicity endpoints (non-mussels) for species that depend upon invertebrates for prey, exposures are 2-3 orders of magnitude above toxicity endpoints.
- It should be noted that both sets of EECs are limited in their representation of the exposure for the cave fish and isopod, which likely occurs from infiltration and runoff to sink holes.

Table 14. RQs for direct effects to aquatic invertebrates, fish and aquatic-phase amphibians^{1,2}

Pesticide	Direct effects to fairy shrimp and isopod		Direct effects to mussels		Direct effects to Ozark cave fish and Wyoming toad	
	Standard pond	Edge of field	Standard pond	Edge of field	Standard pond	Edge of field
Acephate/ Methamidophos*	14	N/A	N/A	N/A	0.067	NA
Carbaryl	770	7800	0.2	1.8	1.1	12
Malathion	720	2600	0.0	0.026	34	120
Diazinon	2800	4600	0.4	0.70	6.7	11
Fipronil	0.1	N/A	N/A	N/A	0.00036	NA
Imidacloprid	140	910	0.0	0.11	0.0025	0.016
Permethrin	130	N/A	N/A	N/A	1.1	NA
Methomyl	96	2600	94	2500	1.1	30
Azoxystrobin	5.1	N/A	0.2	N/A	0.6	NA
Propiconazole	0.7	N/A	0.3	N/A	0.4	NA
Chlorothalonil	1.7	N/A	26	N/A	5.2	NA

¹NA Not modeled in previous ecological risk assessments reviewed by EPA

²Based on LD₁₀ values

*Degradate of acephate

Table 15. RQs for effects to diet (aquatic invertebrates are food items).

Pesticide	Aquatic invertebrates	
	Standard pond	Edge of field
Acephate/Methamidophos*	7.7	NA
Carbaryl	400	4000
Malathion	380	1400
Diazinon	1400	2400
Fipronil	0.1	NA
Imidacloprid	25	160
Permethrin	69	NA
Methomyl	50	1300
Azoxystrobin	2.7	NA
Propiconazole	0.4	NA
Chlorothalonil	0.9	NA
2,4-D	0.0058	NA
Atrazine	0.14	2.1
Bromacil	0.0051	NA
Diuron	1.1	NA
Glyphosate	42	420
Linuron	0.44	NA
Metolachlor	0.03	NA
Halauxifen	0.00014	NA

¹NA = Edge of Field EECs were not available in previous ecological risk assessments reviewed by EPA

²Based on LD₅₀ values

*Degradate of acephate

5.4.3. Plants

To evaluate the relative difference in the maximum exposure and plant toxicity endpoints, EPA compared maximum application rates and the most sensitive terrestrial plant IC₂₅ values. **Table 16** presents the RQs for the representative herbicides. Only herbicides were included because they had the highest RQs. These values can be used to evaluate the effectiveness of the drift mitigations. Basically, spray drift deposition when mitigations are applied would need to be 2-3 orders of magnitude below the on-field application rate to not exceed the toxicity endpoints for direct effects to the terrestrial and wetland plant pilot species (*i.e.*, Lake Wales Ridge plants, Mead's milkweed, Leedy's roseroot, Okeechobee gourd, Palmate-bracted bird's beak, and white bluff's bladderpod).

Table 16. RQs for direct effects from herbicides to terrestrial plants

Pesticide	RQs ¹
2,4-D	1100
Atrazine	1100
Bromacil	1400
Diuron	3800
Glyphosate	2200
Linuron	210
Metolachlor	670
Halauxifen	890

¹Direct RQs based on maximum relevant application rates and EC₂₅ toxicity endpoints.

EPA used four of the representative herbicides to evaluate the need for mitigations for the pilot vulnerable plant species that inhabit terrestrial and wetland areas. For terrestrial and wetland plants, the Risk Quotient (RQ) is calculated as a ratio of the EEC to the 5th percentile of the species sensitivity distribution. These are a subset from all the herbicides we evaluated, as most of the previous assessments have not included PAT modeling for terrestrial or wetland exposure. Based on these RQs (**Table 17**), exposures are as much as 2 orders of magnitude higher than toxicity endpoints representing listed plants.

Table 17. Summary of Terrestrial and Wetland Exposure and RQs from Select Herbicides

Pesticide	Toxicity Endpoint	Terrestrial Exposure Zone		Wetland Exposure Zone	
	5th Percentile IC ₂₅ from SSD (Confidence Interval) lb a.i./A	EECs (lbs/A)	Range of RQs	EECs (lbs/A)	Range of RQs
2,4-D	0.0038 (0.0015 - 0.0101)	0.01 - 0.7	2.6 - 180	0.009 - 1.0 (10 - 4100)	2.4 - 270 (0.03 - 14)
Atrazine	0.0037 (CI not available)	0.02 - 1.3	5.4 - 350	0.03 - 3.5 (34 - 7200)	8.1 - 950 (2.3 - 500)
Metolachlor	0.0037 (0.00033 – 0.040)	0.13 - 1.1	36 – 290	0.12 - 2.2 (150)	31 – 610 (970)
Glyphosate	0.021 (CI not available)	0.002 - 13	0.01 - 600	0.12 - 33 (4.2 - 1400)	5.7 - 590 (0.001 - 0.3)

CI = 95% confidence interval

Toxicity data and EECs used to calculate aquatic plant RQs for the representative pesticides are provided in **Tables 9 and 12**. These RQs are used to assess potential habitat effects to some of the pilot animal species. The highest EECs represent combined drift and runoff/erosion exposure and are used to provide an estimate of the level of mitigations that would be needed to reduce both drift and runoff/erosion exposures. When considering the representative pesticides and their RQs presented in **Table 18**, exposures are as high as 3 orders of magnitude above toxicity endpoints for both vascular plants and algae.

Table 18. RQs for effects to aquatic plants.

Pesticide	Non-vascular (algae)		Vascular	
	Standard pond	Edge of field	Standard pond	Edge of field
Acephate/Methamidophos*	<0.1	NA	<0.1	NA
Carbaryl	1.9	19	<0.1	0.3
Malathion	0.8	2.7	0.8	2.7
Diazinon	0.1	0.1	0.1	0.1
Fipronil	<0.1	NA	NA	NA
Imidacloprid	<0.1	<0.1	<0.1	<0.1
Permethrin	<0.1	NA	<0.1	NA
Methomyl	<0.1	0.1	<0.1	0.1
Azoxystrobin	3.1	NA	<0.1	NA
Propiconazole	9.3	NA	0.1	NA
Chlorothalonil	4.1	NA	0.1	NA
2,4-D	<0.1	NA	0.5	NA
Atrazine	22	330	22	330
Bromacil	84	NA	13	NA
Diuron	63	NA	15	NA
Glyphosate	140	1400	140	1400
Linuron	3.8	NA	1.9	NA
Metolachlor	19	NA	11	NA
Halauxifen	<0.1	NA	1.1	NA

¹NA Not modeled in previous ecological risk assessments reviewed by EPA

²Based on LD₅₀ values for aquatic invertebrates for insecticides and fungicides; based on EC₅₀ values for herbicides; represent potential indirect effects endpoints

*Degradate of acephate

5.5. Discussion of effectiveness of mitigations in reducing exposures

Neither the EECs nor the effectiveness of mitigations are precise, and they vary due to variations in conditions, environments, equipment, and numerous other factors. Therefore, EPA is using this analysis to estimate the extent of necessary mitigations for these species given these factors and resulting variability.

The spray drift mitigations discussed **Section 4.2.2** for the terrestrial animals are anticipated to result in estimated exposures that are 2 orders of magnitude below on-field exposures. This is sufficient to address exposure concerns for direct effects to Attwater's prairie chicken, Buena Vista Lake ornate shrew and Wyoming toad (**Table 13**). Although there may be some indirect effects concerns for insect prey, EPA believes the proposed spray drift mitigations are sufficient because RQs were based on the most sensitive test species. Given that all of these species are generalists (not feeding on specific insect species), EPA expects that the 2 order of magnitude reduction in estimated exposure is sufficient to protect insect communities that represent the prey base of these species. As described above, for some of the representative pesticides, spray drift exposures for direct effect to the vulnerable pilot species of

plants (**Table 16**) and terrestrial insects (**Table 13**) may be higher. Therefore, EPA is proposing different spray drift mitigations that include larger buffer distances for vulnerable pilot species of terrestrial invertebrates (Poweshiek skipperling, Rusty patch bumble bee, Taylors checkerspot, American burying beetle) and plants (Lake Wales Ridge plants, Mead's milkweed, Leedy's roseroot, Okeechobee gourd, Palmate-bracted bird's beak, White Bluffs bladderpod). **Tables 19-22** summarize the lines of evidence considered for the evaluation of the proposed mitigations for the terrestrial animals and plants.

In the technical document, EPA evaluated the open literature associated with the runoff/erosion mitigation practices identified in **Section 4** to describe the effectiveness and reliability of these mitigations in reducing exposures. Considering variability in exposure, toxicity, effectiveness of runoff/erosion mitigations and conservativeness of the RQs, EPA anticipates that the proposed mitigations will be sufficient for those cases where EECs are 3 orders of magnitude higher than toxicity endpoints (*i.e.*, RQs are 3 orders of magnitude or less). For plants in terrestrial and wetland habitats, EECs are as high as 2 orders of magnitude above toxicity endpoints (**Table 17**). Therefore, for direct effects to the listed plants and habitat or diet effects to the listed animals in this pilot, the proposed runoff/erosion mitigations described in **Section 4.2.3** are sufficient to reduce exposures below toxicity levels. For aquatic species, EECs are as much as 3 orders of magnitude above toxicity endpoints for aquatic invertebrates but are lower for mussels and fish (and amphibians). For aquatic plants that represent the habitat of some of the pilot species, EECs are as high as 3 orders of magnitude above the toxicity endpoints. Therefore, for species in this pilot, for direct effects to the pilot species or potential PPHD effects, the proposed runoff/erosion mitigations described in **Section 4.2.3** are sufficient to reduce exposures below toxicity levels. **Tables 19-22** summarize the lines of evidence considered for the evaluation of the proposed runoff/erosion and drift mitigations for all of the pilot species.

Table 19. Summary of the Draft Mitigations Selected for Birds and Mammals

Species	Direct		Indirect	Proposed Draft Mitigations	Key Uncertainties/ Exposure Relevance	Major Use Sites
	Taxa for Evaluation	Risk Quotients	Taxa for Evaluation (RQs)			
Attwater's Greater Prairie Chicken	Bird	Bird RQ range (<0.1-410)	Terrestrial Invertebrate prey: RQs range (19-7200) Terrestrial plant (habitat, diet)	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	For indirect prey effects- RQs are for the most sensitive invertebrate prey but prey base would likely have differing sensitivities; does not factor foraging changes or replenishment of prey	Highest overlap with hay, rice, cotton, sorghum, and corn. Birds may use non-agricultural areas, such as rights of way and rangeland.
Buena Vista Lake ornate shrew	Mammal	Mammal RQ range (<0.1-55)	Wetland plant (habitat) Terrestrial Invert (prey; RQs range 19-7200)			Mix of orchards/ vineyards (almonds, grapes, pistachios) and row crops (hay, cotton, and wheat)

Table 20. Summary of the Draft Mitigations Selected for Terrestrial Invertebrates

Species	Direct		Indirect	Proposed Draft Mitigations	Key Uncertainties/ Exposure Relevance	Major Use Sites
	Taxa for Evaluation	Risk Quotients	Taxa for Evaluation (RQs)			
Poweshiek Skipperling	Terrestrial Invertebrate	Terrestrial Invertebrate RQ (25-14,000)	Terrestrial plant (diet; habitat)	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	Captive breeding sites are located outside of its range.	Highest overlap with corn and soybean.
Rusty Patched Bumblebee				Larger spray drift buffers	--	
Taylors Checkerspot			Drift mitigations in Section 4.2.2	--	--	
American burying Beetle (ABB)			Larger spray drift buffers ABB timing restriction: Do not apply above 60 degrees (see section 4)	Plants not indirect ABB because it is a scavenger and does not require plants for habitat	--	Most agriculture in the area is corn, soybeans, hay, and alfalfa.

Table 21. Summary of the Draft Mitigations Selected for Terrestrial plants

Species	Direct		Indirect	Proposed Draft Mitigations	Key Uncertainties/ Exposure Relevance	Major Use Sites
	Taxa for Evaluation	Risk Quotients	Taxa for Evaluation (RQs)			
Lake Wales Ridge plants	Terrestrial Plants	Terrestrial Plants (RQ range 210-3800)	Terrestrial Invertebrate (pollinator) (RQs range 19-7200)	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3 More restrictive Drift mitigations	--	Highest overlap orange/citrus groves. Other crops include cucumbers and lettuce.
Mead's milkweed				Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	--	Highest overlap use sites are corn and soybean.
Okeechobee gourd				Larger spray drift buffers	--	Agricultural use is sugarcane. Non-Agricultural use includes herbicide applications for aquatic vegetation.
Palmate bracted bird's beak				See Table 5 for Timing of restrictions	--	Highest overlap use sites are almonds and rice. Followed by grapes, tomatoes, walnuts, corn, and fallow. Non-agricultural use includes mosquito control.
Leedy's roseroot					Leedy's roseroot grows on a very specialized type of habitat called "maderate cliffs".	Agricultural uses include corn, soy, grapes. Non-Agricultural use includes developed land.
White Bluffs bladderpod				Drift mitigations in Section 4.2.2 Larger spray drift buffers See Table 5 for Timing of restrictions	Unique and restricted habitat; most of which is protected as part of Hanford Reach National Monument.	Nearby agriculture that may support pollinators.

Table 22. Summary of the Draft Mitigations Selected for Aquatic and Wetland Species

Species	Direct		Indirect	Proposed Draft Mitigations	Key Uncertainties/ Exposure Relevance	Major Use Sites
	Taxa for Evaluation	Risk Quotients [Aquatic RQs based on pond EEC unless noted]	Taxa for Evaluation (RQs)			
Riverside fairy shrimp and San Diego fairy shrimp	Aquatic Invertebrate	RQs range (910--7800) (Edge of Field)	Focus on direct effects	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	Primary habitat: Vernal pool habitat- Represented by the edge of field EECs	Highest overlap with almonds and hay. Non- agricultural use includes rights of way
Winged Mapleleaf, Ouachita Rock Pocketbook, Scaleshell, Rayed Bean		Mussel specific RQs (<0.1- 94)	Fish (dispersal) Aquatic Plants (habitat)	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	Consideration of primary habitat-flowing waterbodies	Rangeland and forests account for the largest footprint. Highest agricultural overlap with field crops (e.g., corn, hay, soybeans).
Madison cave isopod	Cave Species Aquatic Invertebrate and Fish	Aq Invert RQs range (<1-2800)	Focus on direct effects	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	Consideration of primary habitat is cave systems	Highest overlap with field crops (e.g., corn, hay, soybeans).
Ozark cavefish		Fish RQ range (<0.1--34)				
Terrestrial (Aquatic Phase) and Wetland species						
Wyoming toad	Fish (surrogate for aquatic phase) Bird (terrestrial phase)	Fish RQ range (<1-34) Bird RQ range (<0.1-410)	Aquatic invertebrate (2.1-4000) (prey) Aquatic plant (habitat)	Drift and runoff/erosion mitigations in Sections 4.2.2 and 4.2.3	For indirect prey effects- RQs are for the most sensitive invertebrate prey but prey base would likely have differing sensitivities; does not factor foraging changes or replenishment of prey	Highest overlap with hay. Range is watershed based, thus, conservative and assume water body is directly adjacent to field.

6. Implementation Plan for Vulnerable Species Pilot

As noted above, the purpose of the Vulnerable Species Pilot is to begin adopting meaningful protections for the pilot species before EPA has completed effects determinations or, if necessary, completed consultation with the Services.

EPA's proposed implementation plan for the mitigations in this pilot is described below. Because the pilot species have ranges, EPA intends to implement the mitigations for the pilot species through geographic-specific restrictions located in Endangered Species Protection Bulletins that are accessed through the BLT website, which are made enforceable through directions to access and follow them on pesticide labeling. Throughout this pilot (in collaboration with the FWS) and the Agency's implementation of the mitigation measures, EPA expects to consider to what extent the outcomes of the pilot provide efficiencies for current or future consultations.²⁷

EPA will also continue to incorporate the FIFRA Interim Ecological Mitigation (IEM) into its registration review decisions, as appropriate. The Vulnerable Species Pilot and IEM include mitigations for spray drift and runoff/erosion. When these strategies overlap, EPA will generally use the spray drift and runoff/erosion mitigations from the Vulnerable Species Pilot instead of the IEM because the mitigations for the Vulnerable Species Pilot are considered more specific and protective for the vulnerable species in the pilot, and thus advance EPA's ESA obligation the most. The IEM includes other measures not covered by the Vulnerable Species Pilot (*e.g.*, pollinator stewardship language, incident reporting language) that will be considered by EPA during registration and registration review decisions. As indicated in the November 2022 ESA Workplan Update, EPA plans to require language on labels that directs pesticide applicators to check the Bulletins Live Two! website. Including this language on the labels will be necessary to implement the geographically explicit mitigations described above.

6.1 BLT system

EPA expects to implement the Vulnerable Species Pilot consistent with the Agency's statements in its ESA Workplan and Update. As described in the Workplan Update, ESA mitigation usually takes one of two forms. The mitigations can include nationwide restrictions on the pesticide product labeling and/or geographic-specific restrictions located in Bulletins, which are made enforceable through directions to access and follow the Bulletins on pesticide labeling (BLT reference). For the Vulnerable Species Pilot, EPA plans to implement geographic-specific restrictions that are relevant to the locations of the 27 pilot species. Bulletins contain the restrictions a user located in a specific geographic location must follow in addition to the restrictions on the pesticide product labeling. EPA uses a web-based system, BLT, to provide pesticide users with access to Bulletins when a pesticide product references BLT on its labeling so that the users can determine whether there are additional use restrictions for the pesticide product for their specific location at the time of their application. In general, EPA uses the BLT system when the use restrictions apply only in a particular geographic region where listed species are present and, in some cases, only during certain times of the year.

²⁷ For example, EPA may consider initiating a programmatic consultation for a set of vulnerable species, thereby eliminating the need to be considered in future Biological Evaluations, as potential effects for those pesticides would be addressed.

EPA uses Bulletins to tailor the mitigations to geographically specific areas, minimizing complexity on national pesticide product labels. Where geographic-specific restrictions are appropriate, a pesticide product's physical label usually is not the preferred location for all of those mitigation instructions because adding multiple geographic-specific restrictions can make the physical label lengthy and difficult to follow. Including a requirement to access and follow bulletins through a BLT reference on the pesticide product label simplifies the label and offers a way for users to identify the applicable mitigation for a pesticide application at a specific location and point in time. When directed by the product labeling, pesticide users are required to visit the BLT online system and follow any mitigation specified in a Bulletin for the application area. EPA intends to use the BLT system to implement protections developed through this pilot.

6.2 Implementing the pilot through the BLT system

6.2.1 Bulletins

EPA plans to publish Bulletins for the 27 pilot species that would include application restrictions that would apply across multiple pesticides. To do this, EPA plans to expand the BLT system capabilities to accommodate Bulletins needed for large groups of pesticides rather than single active ingredient or product-specific Bulletins. EPA acknowledges that there are currently Bulletins in place for some specific pesticide products and for some of the species in this pilot. The Agency is considering how to address existing Bulletins for an individual pesticide product that overlaps with Vulnerable Species Pilot Bulletins.

6.2.2 Adding BLT direction to labels

As EPA undertakes particular FIFRA actions (*e.g.*, registration review actions), EPA expects to find that a reference to BLT on pesticide product labeling is necessary for most conventional pesticide products with outdoor uses. Through the ESA Workplan Update in November 2022, EPA provided an opportunity for public comment, including for any comments related to adding BLT reference language on pesticide labeling. EPA is currently considering the public comments received.

Consistent with the ESA Workplan Update, EPA will be assessing whether a BLT reference on pesticide product labeling is appropriate when the Agency reviews registration and registration review actions. EPA acknowledges that based on the workload, the existing backlog of label review actions, and the lack of an electronic labeling and label review system, it is not feasible at this time to get BLT reference language on all pesticide products undergoing registration review at the same time. Therefore, EPA is considering how to address the need for BLT reference language on pesticide product labeling. EPA is also considering how to further prioritize cases in registration review that are affected by the different ESA strategies, including the Vulnerable Species Pilot. As the Agency determines where incorporation of BLT reference on pesticide product labeling is needed for pesticides undergoing registration review, registrants should expect Proposed Interim Decisions and Proposed Final Decisions to include determinations as to the need for the BLT reference. The Agency expects that most, if not all, conventional pesticide cases involving non-residential outdoor uses currently in registration review would need a reference to BLT on pesticide product labeling because the Vulnerable Species Pilot proposed mitigation measures would likely be necessary to protect the pilot species broadly across pesticides as well as the other ESA strategies currently under development. For some cases, EPA has already approved pesticide product labeling that includes BLT reference directions through its registration and registration review programs.

Similar to implementation through the registration review program, EPA also plans to evaluate the need for BLT reference language for registration actions. EPA may prioritize the implementation for these types of actions beginning first with new conventional active ingredients. Additionally, EPA is considering if and when implementation may be appropriate for other registration actions on currently registered pesticides for conventional outdoor uses (*e.g.*, amendments to registrations and accompanying labeling, applications for new uses). Incorporating BLT reference language through registration actions allows for earlier mitigation than solely relying on the registration review process.

In addition to new pesticide active ingredient registration actions that EPA reviews in the normal course of business, consistent with 40 CFR 152.46(b), the Agency is proposing to allow registrants to include BLT reference language on their labeling through non-notification. EPA has determined that allowing this non-notification has no potential to cause unreasonable adverse effects to the environment without notifying or approval by the Agency. Following the public comment opportunity, EPA will provide further information about the process for adding BLT reference language to pesticide product labeling via non-notification. EPA expects this process can result in the language being added to more products in an efficient and timely manner. However, EPA acknowledges that allowing registrants to include BLT reference language on their labeling through non-notification, and not receiving notifications or amendments relating to the inclusion of this language on labeling, reduces EPA's ability to easily track the adoption of this labeling, outside of the actions that the registering or re-evaluation divisions regularly receive and review. However, the Pesticide Product and Label System²⁸ will continue to allow for EPA and the public to see label changes that occur through notification and amendments. On a case-by-case basis, EPA may determine that other avenues are necessary to ensure the BLT reference language is on all appropriate labeling.

6.2.3 Over the next 18 months

EPA plans to focus on getting BLT reference language on pesticide product labeling as part of normal registration and registration review actions and through non-notification, as described above.

To this end, EPA plans to work on the following:

- Develop Bulletins for the initial set of 27 pilot species
- Expand the BLT system capabilities to accommodate Bulletins needed for large groups of pesticides rather than single active ingredient or product-specific Bulletins
- Provide further information on the process for allowing registrants to add BLT reference language voluntarily to their labels through the non-notification process

6.4 Public outreach, education, and encouragement of voluntary adoption of mitigations

While the Agency's priority is to develop the Bulletins with mitigation for the pilot species and to link those Bulletins to product labels, EPA recognizes that it will take time for all applicable pesticide product labeling to incorporate the BLT reference. Therefore, the Agency plans to collaborate with co-regulators and stakeholders to develop materials for education and outreach so that users can voluntarily take steps to protect these listed species.

²⁸ <https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:1>

The Agency is releasing StoryMaps²⁹ for the initial set of vulnerable species, which include the geographic area for the pilot species, proposed mitigation measures, and other information about the species. These StoryMaps, among other things, will allow growers and applicators to determine whether they routinely apply pesticides near the pilot species, even before full implementation of the Bulletins and BLT references on pesticide product labeling, and support users in proactively adopting these mitigations to protect pilot species and prepare for a future where the mitigations could be required.

In addition to the StoryMaps, EPA is also considering ways to support outreach and education on use of BLT, in general, and compliance with label directions and Bulletins.

Over the next 18 months, EPA intends to collaborate with co-regulators and stakeholders on outreach and education to increase awareness of upcoming mitigations and to encourage early adoption of important measures to protect vulnerable listed species. To this end, EPA plans to work on the following:

- Work with stakeholders interested in developing training materials to educate users and support Agency outreach and education efforts.
- Continue to communicate with our co-regulators and stakeholders so they are aware of BLT and available resources, including StoryMaps for vulnerable listed species.
- Update the ESA Workplan website with information related to this pilot.

6.5 Future Consultation with FWS

As noted above, EPA—in collaboration with the Service(s)—also expects to consider whether the Vulnerable Species Pilot can lead to efficiencies in current or future consultations, including the potential for a programmatic consultation, or other streamlining process, that is larger in scope than just this pilot effort. The Services' ESA regulations define programmatic consultation as "*consultation addressing an agency's multiple actions on a program, region, or other basis.*"³⁰ EPA's Vulnerable Species Pilot is an opportunity for EPA and FWS to consider whether the approaches detailed for pilot species could evolve to support a programmatic consultation. This would mean that EPA and the Service(s) would need to devote fewer resources to developing and evaluating mitigations to support EPA's biological evaluations and consultation for these listed species. And by incorporating mitigation measures directly into EPA's actions prior to consultation, the mitigation needs for these species would already be partly or fully addressed prior to any future consultation for conventional pesticides.

There are currently 27 listed species and 3 designated critical habitats covered by this pilot effort. If EPA—in collaboration with the Service(s)—determines that the pilot can be expanded to other vulnerable listed species, then EPA could potentially identify additional early mitigations to proactively protect additional listed species. Similar to the Vulnerable Species Pilot, EPA expects that the process of expanding the project to include additional vulnerable species would consider the effectiveness of particular mitigation measures in reducing exposures to listed species.

²⁹ <https://storymaps.arcgis.com/collections/896d140363174c9d8ee78e4c471bd7fd>

³⁰ 50 CFR § 402.02 (further noting that "[p]rogrammatic consultations allow the Services to consult on the effects of programmatic actions such as[] (1) [m]ultiple similar, frequently occurring, or routine actions expected to be implemented in particular geographic areas; and (2) [a] proposed program, plan, policy, or regulation providing a framework for future proposed actions").

6.6 Other ESA strategies

In addition to this pilot, EPA is also working on other ESA strategies to identify mitigation measures for classes of conventional pesticides (*e.g.*, herbicides). EPA will be providing specific implementation plans for these strategies as well. Implementation of the Vulnerable Species Pilot and other ESA strategies that EPA may provide in the future will be an evolving process. As EPA learns through implementing the strategies, the Agency may determine that it needs to update the implementation process and will, as appropriate, communicate these updates to the public. In the future, EPA may consider issuing additional policy statements, such as Pesticide Registration Notices, or undertaking rulemaking to ensure that the necessary mitigation measures are incorporated into pesticide product registrations and their accompanying labeling. EPA plans to use the implementation of this pilot and other ESA strategies to evaluate whether further actions are needed to ensure that all conventional pesticide labeling includes appropriate protections for listed species.

7. Expansion of mitigations to other vulnerable listed species

The species included in this pilot represent an initial set of listed species that have relatively limited range sizes, are considered by FWS to have high or medium overall vulnerability where pesticides are identified as potential stressors to the species. This pilot also represents diverse species that represent different taxa (*e.g.*, plants, insects), located in different types of habitats (*e.g.*, streams, grasslands) and parts of the continental US. EPA has begun discussions with FWS about the proposed mitigations for the pilot species.

Based on lessons learned from the 27 pilot species, EPA is considering expanding the Vulnerable Species Pilot to include additional species. EPA plans to continue to work with FWS as it considers expanding the pilot to include other species that may be considered vulnerable. This section describes EPA's current thinking on how additional vulnerable species may be identified and mitigations may be assigned using the lessons learned from the pilot. This section also provides some initial species EPA is considering for expansion; however, this list of species should not be considered comprehensive. In future discussions with FWS through pesticide specific, ESA strategies or programmatic consultations, EPA expects to identify additional species that could potentially be considered for expansion of the vulnerable species project.

EPA identified the initial pilot species by considering their overall vulnerability, geographic range and information suggesting that pesticides may be a stressor. Through discussions with FWS, EPA has added the following characteristics for consideration when identifying potential species for future expansion: limited population size, negative population trend, and limited distribution. EPA is also considering multiple approaches for any expansion of the pilot to include additional vulnerable species for which it would develop mitigations. One approach is to systematically review all listed species within the continental US³¹ and identify other listed species that meet the above characteristics that describe the vulnerable species. Another approach is to identify species through the development of other ESA strategies (*e.g.*, herbicide strategy), programmatic consultation or pesticide specific consultations.

³¹ EPA is not currently including species outside of the continental US because EPA plans to consider species in HI and the territories through other ESA strategies. See November 2022 workplan update for more information.

Given EPA's many ESA-related activities and limited resources, the second approach may be preferable because it would allow the vulnerable species project to complement its other ESA efforts. For example, if through a pesticide specific consultation, EPA and FWS identify a species that meets the characteristics of the vulnerable species, EPA may be able to add that species to the vulnerable species project so that it can gain protections from other pesticide active ingredients. Also, as EPA and FWS work together to develop a process and datasets for use in consultations, EPA expects to identify other vulnerable species that may be relevant to the vulnerable species project.

An example of how the pilot could be expanded is shown through the recent FWS consultation on the registration of the Enlist products. During the ongoing Enlist consultation³², FWS identified 2 plant species that co-occur with agriculture and needed additional mitigations from runoff³³. Those species are whorled sunflower (*Helianthus verticillatus*) and spring creek bladderpod (*Lesquerella perforata*). Both species have small ranges and high vulnerability. In addition, the spring creek bladderpod is known to occur on agricultural fields. Given the locations of these species (on or near agricultural fields) and the concerns identified by FWS in their draft biological opinion³⁴ for Enlist uses on corn, cotton and soybeans, EPA expects that pesticides are a relevant stressor for these two species. Therefore, the whorled sunflower and spring creek bladderpod are being considered for any future expansion of the vulnerable species project.

EPA reviewed the listed terrestrial insects that occur within the continental US to identify those that meet the characteristics of the vulnerable species. With some input from FWS, EPA identified the 7 species listed below as having small ranges, declining or limited populations, FWS overall vulnerability classification of "high," and pesticide use as a likely stressor. In recent biological evaluations for several insecticides,^{35,36,37} EPA made LAA determinations and in some cases predicted the likelihood of jeopardy for several listed insects. Also, for malathion, FWS identified mitigations that were needed for several insect species (USFWS 2022). Therefore, EPA is considering expanding the vulnerable species project to include these terrestrial insect species:

- Bartram's hairstreak butterfly (*Strymon acis bartrami*),
- Dakota skipper (*Hesperia dacotae*),
- Island marble butterfly (*Euchloe ausonides insulanus*),
- Miami blue butterfly (*Cyclargus thomasi bethunebakeri*)
- Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*),
- Oregon silverspot butterfly, and
- Saint Francis satyr butterfly (*Neonympha mitchellii francisci*).

For this pilot, EPA included 7 species of plants within the Lake Wales Ridge, and later identified 5 other vulnerable plant species located within that area. Protecting this habitat will benefit many different species that are known to occur only in this area. Similarly, EPA is considering the pine rockland habitat³⁸

³² <https://www.regulations.gov/docket/EPA-HQ-OPP-2021-0957/document>

³³ <https://www.epa.gov/endangered-species/biological-opinions-available-public-comment-and-links-final-opinions>

³⁴ <https://www.epa.gov/system/files/other-files/2023-05/EnlistDraftBiOp.zip>

³⁵ Including sulfoxaflor, imidacloprid, thiamethoxam and clothianidin.

³⁶ <https://www.regulations.gov/document/EPA-HQ-OPP-2010-0889-0675>

³⁷ <https://www.epa.gov/system/files/documents/2023-05/ESA-JAM-Analysis.pdf>

³⁸ Pine rockland habitat is characterized by slash pines, palmettos in the understory and limestone.

for any expansion of the pilot. Pine rockland was identified because two of the listed insects above (Bartram's hairstreak butterfly and Miami blue butterfly) occur only in this habitat. Pine rockland once covered large portions of southern Florida, but it is now fragmented and occurs within areas dominated by developed (e.g., Miami) and agricultural landcovers and also occurs within the Everglades National Park. Some other listed species that fit the characteristics of vulnerable species and occur in this habitat include Florida leafwing butterfly (*Anaea troglodyta floridalis*), Miami tiger beetle (*Cicindelidia floridana*), Crenulate lead-plant (*Amorpha crenulata*), Blodgett's silverbush (*Argythamnia blodgettii*) and Florida Brickell-bush (*Brickellia mosieri*).

EPA included two vernal pool fairy shrimp in the pilot (i.e., Riverside and San Diego fairy shrimp). EPA considered the other 3 listed fairy shrimp and whether they meet the characteristics of the vulnerable species. There is one additional fairy shrimp species (Longhorn fairy shrimp; *Branchinecta longiantenna*) that has a limited geographic range and high vulnerability (few populations that are small and isolated). The other two species (Conservancy fairy shrimp (*B. conservation*) and Vernal pool fairy shrimp (*B. lynchi*) do not seem relevant to the vulnerable species effort because of their relatively larger ranges and stable populations. Therefore, if EPA were to expand the project, the longhorn fairy shrimp would likely be relevant to include.

The discussion above is meant to illustrate some of the considerations EPA may apply if additional species are added to the vulnerable species project in the future. The species described above are not considered a complete list of those EPA may consider in the future for expansion of the vulnerable species effort but rather are provided as an illustration of how EPA may identify additional species in the future. If EPA expands the vulnerable species project to other species, it will consider species in other taxa (e.g., birds, mussels) as appropriate.

If expanding the vulnerable species project to include additional species, EPA would assign relevant mitigations to the new species by considering the life history and location information for any potential expansion species. EPA would use lessons learned from the pilot to expand mitigations identified for specific taxa or habitat types of the pilot species to new species. EPA would consider which avoidance and minimization (spray drift and runoff/erosion) mitigations could apply based on the available information for any new species.

8. Conclusion

EPA is releasing this document for public comments on EPA's proposed mitigations and implementation plan for the vulnerable species pilot. EPA is proposing broad mitigations for the vulnerable species pilot. These species generally have declining and/or small populations, specific and refined ranges and designated critical habitat, and pesticides have been identified as a stressor. This is an evolving project that compliments other EPA ESA strategies (e.g., Herbicide Strategy). EPA has proposed both avoidance and minimization mitigations to reduce exposures to the pilot species. EPA evaluated the proposed mitigations by using representative pesticides that have been detected in areas relevant to the pilot species. For these representative pesticides, EPA used estimated exposures and toxicity data to evaluate the relative difference in exposure and effects levels and to evaluate the effectiveness of the mitigations. For some pilot species, additional mitigations are proposed to further minimize exposures to the pesticides where exposures are several orders of magnitude above toxicity endpoints. EPA intends to implement the proposed mitigations outlined by this pilot project using EPA's BLT system to

apply geospatially explicit mitigations to these refined species locations, and this BLT reference language. EPA is expected to find that a reference to BLT would likely be necessary on pesticide labels as actions for these products come in for registration or registration review. EPA is also considering expanding this pilot to include other vulnerable listed species. EPA plans to use this evolving pilot as an approach to protecting the most vulnerable listed species from conventional pesticides with non-residential, outdoor uses.

9. Citations for Toxicity and Exposure Information of Representative Pesticides

USEPA, 2015. Ecological Risk Assessment for the New Herbicide **Halauxifen-methyl**. DP: 406134. December 15, 2015. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2015. Registration Review: Draft Risk Assessment of the environmental Fate and Ecological Risk of **Azoxystrobin**. DP 427660. December 10, 2015. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2016. **Bromacil and Bromacil Lithium Salt** – Transmittal of the Preliminary Environmental Fate and Ecological Risk Assessment for Registration Review. DP 432154. December 21, 2016. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2016. **Linuron**: Preliminary Ecological Risk Assessment for Registration Review. DP: 430154, June 9, 2016. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2016. Preliminary Comparative Environmental Fate and Ecological Risk Assessment for Registration Review of **Eight Synthetic Pyrethroids and the Pyrethrins**. DP: D425791, D429461, D433338, D433339, D435888. September 30, 2016. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2016. Preliminary Ecological Risk Assessment for Registration Review of **2,4-D**. DP: 424054, June 29, 2016. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2017. Biological Evaluation Chapters for **Diazinon** ESA Assessment
<https://www.epa.gov/endangered-species/biological-evaluation-chapters-diazinon-esa-assessment>.
Office of Pesticide Programs.

USEPA, 2017. Biological Evaluation Chapters for **Malathion** ESA Assessment.
<https://www.epa.gov/endangered-species/biological-evaluation-chapters-malathion-esa-assessment>.
Office of Pesticide Programs.

USEPA, 2017. Preliminary Ecological Risk Assessment for Registration Review of **Acephate**. DP: 418159, March 21, 2017. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2018. **Linuron**: Addendum to Ecological Risk Assessment in Support of Registration Review. DP: 444119, December 20, 2018. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2019. **Metolachlor/S-Metolachlor**: Draft Ecological Risk Assessment for Registration Review. DP: 448940. September 19, 2019. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2020. Chlorothalonil: Draft Ecological Risk Assessment for Registration Review. DP 457662. December 30, 2020. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2020. **Diuron**: Draft Ecological Risk Assessment for Registration Review. DP: 457224, December 16, 2020. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2020. **Propiconazole**: Draft Ecological Risk Assessment for Registration Review. DP: 456085, December 23, 2020. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2021. Final National Level Listed Species Biological Evaluation for **Atrazine**. <https://www.epa.gov/endangered-species/final-national-level-listed-species-biological-evaluation-glyphosate>. Chapter 2: Final Atrazine Effects Characterization. November 2021. Office of Pesticide Programs.

USEPA, 2021. Final National Level Listed Species Biological Evaluation for **Carbaryl**. <https://www.epa.gov/endangered-species/final-national-level-listed-species-biological-evaluation-carbaryl>. Chapter 2: Final Carbaryl Effects Characterization. March 2021. Office of Pesticide Programs.

USEPA, 2021. Final National Level Listed Species Biological Evaluation for **Methomyl**. <https://www.epa.gov/endangered-species/final-national-level-listed-species-biological-evaluation-methomyl> Chapter 2: Final Methomyl Effects Characterization. March 2021. Office of Pesticide Programs.

USEPA, 2021. **Fipronil**: Revised Draft Ecological Risk Assessment for Registration Review. DP 461350. April 13, 2021. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2021. **Diuron**: Response to Comments on the Draft Ecological Risk Assessment and Drinking Water Assessment for Registration Review. DP 462459, August 25, 2021. Environmental Fate and Effects Division, Office of Pesticide Programs.

USEPA, 2022. Final National Level Listed Species Biological Evaluation for **Imidacloprid**. <https://www.epa.gov/endangered-species/final-national-level-listed-species-biological-evaluation-imidacloprid> Chapter 2: Imidacloprid Effects Characterization. June 2022. Office of Pesticide Programs.



SFIREG

State FIFRA Issues Research and Evaluation Group

August 6, 2023

Jan Matuszko, Director
Environmental Fate and Effects Division, Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460-0001

Submitted electronically via Regulations.gov

RE: SFIREG Comments regarding EPA's Vulnerable Listed (Endangered and Threatened) Species Pilot Project: Proposed Mitigations, Implementation Plan, and Possible Expansion, Docket Number EPA-HQ-OPP-2023-0327

Dear Ms. Matuszko;

The State FIFRA Issues Research and Evaluation Group (SFIREG) and its working committees provide a platform for the states and US Environmental Protection Agency (EPA) to resolve challenges for successful implementation of pesticide programs and policies. SFIREG serves as a permanent standing committee of the Association of American Pesticide Control Officials (AAPCO), which works to represent states in the development, implementation, and communication of sound public policies and programs related to the sale, use, transport, and disposal of pesticides. SFIREG and the Joint Working Committee (JWC) are made up of various State Lead Agency (SLA) managers and scientist from around the nation that have responsibilities leading state FIFRA cooperative agreement regulatory programs. SFIREG has been working with EPA in coregulatory processes since 1978.

On behalf of SFIREG and our JWC, we appreciate the opportunity to comment on the topics related to the *Vulnerable Listed (Endangered and Threatened) Species Pilot Project: Proposed Mitigations, Implementation Plan, and Possible Expansion, Docket Number EPA-HQ-OPP-2023-0327*. Our comment letter provides perspectives related to the concepts and proposed policies located in the Vulnerable Species White Paper (white paper). State Lead Agencies (SLAs) around the nation have engaged in and support Endangered Species Act (ESA) work as it is related to pesticides and other ESA listed species recovery issues and processes. State governments, including some SLA pesticide programs, have extensive experience working

through science and recovery strategies with various local, state, and federal partners including the US Fish and Wildlife Service (FWS).

After review of the white paper through the 45-day review period, SFIREG and SLAs have considerable objections and concerns related to the contents and impacts of this white paper. Many aspects of this white paper were a complete surprise to SFIREG and SLAs. The comment period of 45 days was inadequate, and EPA did not allow for an extension of the comment period to at least 60 days. New EPA regulatory policies of this magnitude deserve an extensive review period and opportunities for follow-up with SFIREG and SLAs to provide input for improvement. SFIREG is concerned, that for the purpose of this white paper, the more detailed risk assessment science from EPA has not been presented thoroughly to support the level of the stringent regulations being proposed. SFIREG is concerned about this general risk type of science described in the white paper, and that the broad-based science approaches and the stringent proposals don't match up with what is required under both FIFRA and ESA. The needs of both ESA and FIFRA risk assessment requirements don't seem to line up in this white paper. The proposal should be revised to provide additional detailed work related to mitigations and possible regulation and recovery strategies that would capture the reasonable and likely scenarios of risk and how to recover the species in concert with the FWS recovery plans and requirements. SFIREG would recommend and encourage EPA to find more reasonable workable and implementable approaches for this white paper. We recommend that EPA reconsider the white paper policies of pesticide prohibition and the requirement for FWS approval of pesticide applications for areas within the vulnerable species project areas. SFIREG recommends that EPA work to create a process for gathering further input from SLAs, SFIREG, land grant university scientists and educators, additional endangered species scientists from state and federal governments, pesticide user groups, and national agricultural organizations. State governments and SLAs have experience around the nation to support efforts to protect listed endangered and threatened species, but SFIREG strongly opposes the broad-based pesticide use elimination and restrictions related to the species examples contained in the white paper. The concepts of the preemptive prohibition of pesticide use throughout millions of acres associated with the species mentioned in the white paper should not be pursued by EPA or applied generically to all endangered and threatened species in the nation. These policies will have substantial negative impacts to agriculture, SLAs, and education and training partners throughout the nation.

EPA provides no scientific foundation or criteria for creating these large geographic areas and species range maps and then applying a pesticide use prohibition restriction to those areas. After review of the white paper, pilot project web map tool, and the FWS Recovery Plans for each of the 27 species; it appears EPA has not achieved a scientifically based, iterative or collaborative recovery process for pesticides that is compatible with the FWS processes where pesticide use is concerned. In addition, the avoidance mitigations in the proposed pilot have tremendous negative ramifications on agriculture, crop production, forestry, and other sectors of society that might rely on legal and safe use of pesticides. Pesticide use in more urban and suburban and interface areas with agriculture, where some of these ESA pilot species also have considerable habitat, is not included in this white paper, which is a significant omission. The concepts in the white paper are of considerable concern to SFIREG as they're a significant and unnecessary departure from the EPA risk-based and risk benefit analysis approach.

The draft recovery plans for all the 27 white paper species don't recommend preemptive elimination of pesticide use or require more of an approval or permit options. The FWS recovery plans outline a variety of impacts to species and also described in many of the plans are the recommendations to use herbicides to prevent non-native plant invasions and maintain habitat for example. SFIREG has reviewed all the FWS recovery plans and maps for these species, and the EPA white paper concepts don't completely match up with the information in the recovery plans. The species and recovery plans included in this white paper are the following:

- Group of plant species in Lake Wales Ridge area of Florida (including [Avon park harebells](#) (*Crotalaria avonensis*), [Garrett's mint](#) (*Dicerandra christmanii*), [wireweed](#) (*Polygonella basiramea*), [scrub blazingstar](#) (*Liatris ohlingerae*), [short-leaved rosemary](#) (*Conradina brevifolia*), [scrub mint](#) (*Dicerandra frutescens*), [Florida ziziphus](#) (*Ziziphus celata*), and several other species that occur in this area)
- [Leedy's roseroot](#) (*Rhodiola integrifolia ssp. leedyi*)
- [Mead's milkweed](#) (*Asclepias meadii*)
- [Okeechobee gourd](#) (*Cucurbita okeechobeensis ssp. okeechobeensis*)
- [Palmate-bracted bird's beak](#) (*Cordylanthus palmatus*)
- [White bluffs bladderpod](#) (*Physaria douglasii ssp. tuplashensis*)
- [Madison cave isopod](#) (*Antrolana lira*)
- [Ouachita rock pocketbook](#) (*Arkansia wheeleri*)
- [Rayed bean](#) (*Villosa fabalis*; freshwater mussel)
- [Scaleshell mussel](#) (*Leptodea leptodon*)
- [Winged mapleleaf](#) (*Quadrula fragosa*)
- [Riverside fairy shrimp](#) (*Streptocephalus woottoni*) and [San diego fairy shrimp](#) (*Branchinecta sandiegonensis*)
- [American burying beetle](#) (*Nicrophorus americanus*)
- [Poweshiek skipperling](#) (*Oarisma poweshiek*)
- [Rusty patched bumble bee](#) (*Bombus affinis*)
- [Taylor's checkerspot](#) (*Euphydryas editha taylori*)
- [Ozark cavefish](#) (*Amblyopsis rosae*)
- [Attwater's prairie chicken](#) (*Tympanuchus cupido attwateri*)
- [Buena vista lake ornate shrew](#) (*Sorex ornatus relictus*)
- [Wyoming toad](#) (*Bufo hemiophrys baxteri*)

This new EPA ESA pesticide policy, without the scientific risk assessments completed for each species and pesticides, will be difficult to be properly implemented when the supportive mitigation tools may not match the needs and adaptability for agriculture that is needed for the species recovery. SFIREG recommends improvements for better refinement of the EPA web mapped areas to refine the avoidance and habitat areas. The EPA web mapped areas don't

completely match up with the FWS mapping products in the recovery plans. SFIREG recommends that a team of EPA, FWS, and state officials work to improve the mapping systems and identify the locations of habitat that would be the focus of mitigation and protection.

SFIREG objects to the use of the generic broad range maps related to prohibition of uses, and suggests a reevaluation of the ranges, which should be focused on current and existing critical habitat and based on the PULA for the critical habitat and a mitigation zone around that critical habitat. This would be more effective in protecting the species while reducing critical impacts on agriculture, forestry, pesticide applicators, SLAs, and partners.

Primacy of SLAs

The white paper states that pesticide application is prohibited in the species ranges, unless the applicator coordinates with the local FWS Ecological Services field offices to determine appropriate measures to ensure the proposed application is likely to have no more than minor effects on the species. The section also states that the applicator must coordinate with FWS at least 3 months prior to the application. SFIREG has several issues with this statement. Is EPA intending to require landowners, farmers, and applicators to be under a regulatory permit system similar to National PDES (NPDES) permits, that is administered by FWS? SLAs have primacy for the regulation of pesticides in the state, not FWS. This white paper implies that FWS would now be a co-regulator of pesticides. SFIREG and SLAs object to this new suggested shift in pesticide regulation policy. As regulators of pesticides, SLAs already have the ability to put restrictions in place and enforce label language that prohibits drift and environmental and/or endangered species harm. SLAs have the jurisdiction for these actions at the state level.

Lack of Ability to Respond to Pest Occurrence/Comply with Crop/Food Regulations

The white paper states that the applicator must coordinate with FWS at least 3 months prior to the application. This requirement will be very difficult to implement and isn't practical. Farmers can't predict when a pest problem is going to occur. Additionally, some pest control is required for commodity processing, marketing, and export standards and laws/rules. Without the required insect or disease control, producers would be unable to take their crops and produce to market or sell their commodities for processing; and may lose significant if not all income, as well as negatively impact the general food supply. Farmers can't predict when a pest problem is going to occur. Producers and applicators need to have the flexibility to react to pest pressures and also follow pest control rules, constraints, and marketing and expert rules.

SFIREG is also concerned that local FWS offices are not prepared to "coordinate" with the requests from thousands of farmers, landowners, and applicators. It is unlikely that FWS has the resources, structure, or staffing to deal with these requests, which may result in slow or failed responses and frustration on the part of requestors. SFIREG is concerned that frustrated farmers, landowners and applicators will then disregard all preemptive and mitigation proposals and apply their necessary pesticides in order to respond to pest pressure or regulation in a timely fashion. These unreasonable EPA proposals will result in serious societal issues of rampant lack of compliance and disregard to any enforcement authority, placing the SLAs in an extremely difficult position as the lead enforcement authority in states. A delay in "approval", or what

could be viewed as a permit from FWS, could cause a producer to either lose their crop or be in violation of ESA take when they make a decision to spray based on pest pressure and economical thresholds being at risk.

The 27 species listed in the white paper all have various kinds of area boundaries and estimated avoidance zones resulting in millions of acres arbitrarily being designated for the preemptive prohibition of pesticide use. The actual habitat areas are a very small fraction of the total areas. SFIREG recommends that EPA not create this preemptive prohibition of pesticide use, and work with partners in a science-based recovery mode while developing reasonable and effective mitigation measures that match the species needs with where the habitat is located. There should be a focus on the science aspects of how the species life cycle and patterns function, the location of the habitat, and work to create a process for state and user input to utilize specific measures that will be effective yet not overly burdensome to applicators and regulators.

SFIREG notes some large inconsistencies on how these areas are designated in these 27 pilot species. For some species, like the Powesheik Skipperling, only the species critical habitat was designated as an avoidance area, and an area extending 2,600 ft from the edges of the critical habitat was designated minimization area. For the Taylor's Checkerspot, the area for prohibition of applications was the estimated area of the entire species range in Oregon and Washington, which was designated as the avoidance area, along with the 2,600 ft extension from the edge of the avoidance area. The EPA maps for many of these species, such as the Taylor's Checkerspot, do not match up with the FWS recovery maps and result in the coverage of restrictions to millions of acres of agricultural and forest lands, and also urban and suburban areas. Many of the engendered species maps are broad areas that haven't been refined and the proposed pesticide restrictions will result in an inaccurate and over application of the proposed preemptive prohibitions and restrictions. This inconsistency between species results in vastly different systems to be put in place causing for a confusing system that is not supported by clear science and risk assessments, and results in an unbalanced approach to the new white paper policies by EPA.

Refining Pilot Species Coverages and Matching State, FWS and EPA Processes

SFIREG recommends that EPA work with SLAs, SFIREG, and others at the regional and state level to establish approaches based on refined PULA areas that are more closely associated with the essential area of critical habitat and are consistent with FWS recovery plans and state fish and wildlife agency work. SFIREG also suggests that EPA work to match the white paper concepts and science with the FWS recovery plans for each species. SFIREG suggests that this be a public process and include the opportunity for SFIREG, SLAs, state and local agencies, and other impacted agricultural groups to provide input and comment. In the FWS recovery plans, the FWS barely mentions pesticides as being the main issue with the pilot species. The recovery plans also don't have developed concepts for pesticide mitigation work that would assist in species recovery. Impacts to each pilot species is related to many other factors and pesticides are mentioned generally in these plans, but so are a number of other factors such as urbanization, development, loss of habitat due to a variety of reasons including agriculture, and climate change. FWS doesn't call for or recommend ceasing pesticide usage, or only allowing pesticide

use under the approval of FWS. SFIREG is concerned about this concept, and we recommend that EPA work further to bring the science and risk assessments in the process with the various partners. Herbicides are mentioned only a few times in the FWS recovery plans, but mainly related to controlling invasive plants for the recovery of habitat. Insecticides and fungicides are generally not mentioned in any of these FWS recovery plans. None of the mitigation measures that EPA mentions in the white paper; such as terraces, buffers, cover crops, mulching and tillage are listed in these FWS recovery plans. Specific recovery goals and measures to track success are sections that are included in the plans, but controlling or eliminating pesticide use is not mentioned in any of the FWS documents as a part of those recovery strategies. Under the FWS recovery plans, it is clearly outlined that recovery will be dependent on the federal, state, and local groups working together and the plans mention state and local agencies as partners for species recovery. The EPA white paper does not include the same strategic and planning language. SFIREG has considerable concerns about EPA building further regulatory strategies from the contents of this white paper, and we strongly encourage EPA to work with SFIREG and SLAs to make substantial policy and strategy updates.

The FWS recovery plans are important to provide guidance to the federal agencies, states, and other partners on methods of minimizing threats to federally listed species as well as measurable criteria, however they are guidance and not regulatory documents. The PULAs for these species should be limited to current critical habitat and buffer area around the critical habitat, not the historical range. Many areas would be removed from the most impactful and broad PULA zones. EPA needs to prioritize working with FWS to correct the range and critical habitat of the 27 white paper species and apply some new approaches that are based on more assessments and science and then EPA could move to expand the approach to all species beyond the pilot species. Efforts are underway by FWS and other partners to establish new populations of these species.

SFIREG recommends the removal of the strict Avoidance Mitigation requirements for these 27 white paper species. Many reports from around the nation for these species show that pesticides are not a critical factor in the loss of habitat for these 27 species, and in fact the FWS plans state that herbicide uses are needed to remove invasive weeds from the habitat areas. As these populations are established, or the critical habitat areas increased through stewardship, existing PULAs could be amended or new PULAs added. SFIREG recommends the removal of the strict Avoidance Mitigation requirements. Spray drift and runoff/erosion mitigations should be established for the critical habitat areas. The white paper (page 3) states that "*In fulfilling the requirements of ESA section 7(a)(2), EPA must use the best scientific and commercial data available*". However, at multiple times during the July 27, 2023, Vulnerable Species Pilot Q&A, EPA staff referred to still needing to meet with species experts and expressed that ranges could be further defined. Based on those EPA comments, it appears that this pilot project white paper was sent for publication and comment without taking time to bring further science and refinement forward in the white paper process. SFIREG and SLA welcome the opportunity to work with EPA to add more strategies and refinements to these processes for a more workable regulatory product.

Comprehension of pick list options for runoff and erosion mitigation

The EPA has made some strides in clarifying surface water runoff mitigation related to pick list practices. The removal and/or clarification of ambiguous and difficult to enforce terms like *area immediately upslope, eliminate or substantially reduce concentrated flow, heavy rains, low erosional risk plants/crops*, and sediment trapping cover is commendable. Pick list options, outlined in table 4, more clearly describes practices, and includes pick list options that may be easier to implement by some growers, but certainly not all. The white paper table 4 is still very generic and will not be applicable to all situations. SFIREG recommends more flexibility for landowners, growers, and applicators to match USDA based Field Office Technical Guide (FTOG) Practices Standards, and USDA Farm Services Agency (FSA) CRP practices that would work for their specific farms, commodities, growing conditions, and for the species to be protected. Below are some more details about USDA NRCS Practice Standards and FSA CRP practices that would apply to general erosion prevention, water quality protection, and species protection.

Some concern remains for pick list phrasing like *“Avoid Using Pesticides of a Highly Toxic Hazard Class to invertebrates.”* Applicators may not be familiar with the term invertebrate or how to determine the EPA's toxic hazard classification is which would require the EPA to provide additional explanation for how applicators should interpret and locate this information. For example, while aquatic invertebrate and pollinator toxicity warnings are often listed under the Environmental Hazards section of a label, in their absence, it is unclear where toxic hazard classification statements would be found for listed invertebrate species.

Additional clarification for the runoff/erosion mitigation pick list practice *“40% rate reduction”* is needed. For example, Table 4 has a footnote that says state *“Rate reductions are based on the max single application. Rate reductions can be achieved via banded application, spot treatment, precision agriculture or sprayers.”* In this statement, it is not clear if applicators will get credit for this pick list practice if they only use 60% of the maximum single application rate without using any banded application, spot treatment, precision agriculture or sprayers. Additionally in this example, supplemental language should also be added to address concerns regarding pest resistance management associated with lower rates of application.

Runoff/erosion pick list practices may impact landowners and land operators unequally

The use of table 4 pick list options will put an unequal burden on growers depending on the grower's geographical region, cropping system, and/or economic background. In addition, some pick list options may be unavailable to some farmers. Pick list options anticipated to be unavailable to many mid-west farmers for various reasons include contour farming, terrace farming, construction of runoff retention ponds/water and sediment control basins, and/or establishing riparian buffers. Additionally, concern exists about the time, resources, and money that would be required to establish many of these mitigation measures.

USDA Natural Resources Conservation Service (NRCS) Practice Standards, Farm Services Agency (FSA) Practices, and Mitigation Measures

SFIREG recommends that EPA make reference to the land management mitigation practices develop by USDA Natural Resources Conservation Service (NRCS) and USDA Farm Services Agency (ARS) advisable and voluntary options for mitigation and to be implemented within a recognized state, federal or local Pesticide Stewardship Program and not make them label mandated mitigations. The EPA mentions this concept briefly in the white paper, but the complete concept isn't fully acknowledged or explained by EPA in the document. EPA also references MAGPIE, which is a useful mitigation strategy originating from SETAC Europe workshops and documents. The SETAC Europe effort is contained in the science document, *Mitigating the Risks of Plant Protection Products in the Environment: MAGPIE* (May, 2017) <https://www.setac.org/resource/magpie-epub-zip.html>.

SFIREG also recommends that EPA reference the actual numbering system for the NRCS type mitigation measures that are suggested and listed in the workplan. NRCS is the federal agency that defines the practice standards in the NRCS Field Office Technical Guide (FOTG) [Field Office Technical Guide | NRCS - USDA](#). Some of the mitigation measures listed by EPA are also from the USDA Farm Services Agency (FSA) Conservation Reserve Program (CRP) Practice Library <https://www.fsa.usda.gov/programs-and-services/conservation-programs/crp-practices-library/index>. Each state has the opportunity to amend practice standards typically through their state conservation commission and state NRCS and FSA offices, and state agencies and SLAs are active throughout the Nation in these activities. Also, Conservation Districts and Land Grant Universities participate in assessing and revising Practice Standard and CRP Practices. Updates to state level practice standards and priorities for NRCS and FSA cost share programs are made to each NRCS state conservationist through the NRCS State Technical Advisory Committee (STAC) and to FSA for each state. In this EPA white paper and also in the previous ESA workplan draft appendix, EPA is utilizing land management mitigations that are really NRCS and FSA practice standards from the FOTG and CRP guides, and EPA is also abbreviating or changing the intent and language of those standards to fit the workplan. Abbreviated and altered definitions of NRCS and FSA practice standards should not be used in EPA regulatory programs. There are concerns this will jeopardize the processes of NRCS and state programs to properly define and implement conservation practice standards, and the trust and work that it takes to gain landowner interest in complex voluntary cost share funding programs.

The FOTG and FSA guides contain the technical information for the state and field offices to utilize. The FOTG and FSA sections contain the necessary information and references for state and field offices technical service providers and planners to conduct their work with landowners. For every practice standard the NRCS and FSA has, detailed sections including general resource references, manuals, natural and cultural resource information, resource concerns and planning criteria, supporting documents, and conservation effects. These practice standards are foundational aspects of the FOTG and FSA guides and are specifically applied under cost share programs to support agriculture by managing agricultural practices and pesticide use for the

conservation of soil, water, air, and related plant and animal resources and can additionally support the protection of endangered species.

There are many practice standards that are missing from this white paper and also the previously published EPA ESA appendix. In the white paper, only a few practices or mitigation options are listed. We recommend that EPA incorporate the opportunity for decision making at the farm level to include all of the NRCS Practice Standards and FSA CRP Practices besides Contour Farming, Cover Crop, Vegetative Filter Strip, Mulching, Residue and Tillage management, Terraces, Grassed Waterways, Riparian Buffers, Constructed Wetlands, and Sediment Control Basins. The small number of practices listed in the white paper will not be viable or a complete list of options for all the types of dryland and irrigated farms through the many climatic zones of the nation. The simplicity of the listed items in Table 4 related to runoff/erosion measures is not a workable option or adequate decision-making model for the millions of acres of diverse agriculture and landscapes across all states and the nation.

Among other omissions from the NRCS and FSA lists, the EPA Table 4 does not include two important options that are currently utilized throughout the nation; Pesticide Management Conservation System (595) and Irrigation Water Management (449). When working with landowners in dryland and irrigated land settings, those two of the more important practices that are often discussed and implemented by landowners. Those two in particular are extensively utilized when NRCS does cost share work with growers related to pesticides and also for irrigated agriculture. Some states also have emphasized the use of Polyacrylamide (PAM) as an approved FOTG practice, which is the PAM (450) standard. The Anionic Polyacrylamide (PAM) (450) standard is commonly utilized in irrigated agriculture and can be utilized in a compatible package with Pesticide Management Conservation System (595), Irrigation Water Management (449), and other practices that involved vegetation, filter strips, and settling basins. Also, there are a variety of FSA Cropping Practices that are utilized such as CP-8A Grass Waterway, CP-15A Contour Grass Strips, CP-21 Filter Strip, CP-22 Riparian Buffers, CP-25 Rare and Declining Habitat, CP-42 Pollinator Habitat, CP-43 Prairie Strips, and many others are all important practices to list and utilize.

Landowners, growers, and applicators need to be able to work with NRCS and conservation districts to implement these practices and gain technical support and cost share opportunities. When the resource concern is pesticide related, NRCS and conservation districts typically work with landowners to focus on Pesticide Management Conservation System (595) initially and then add other complementary FOTG practices based on the resource needs and the planning process per farm. The focus of the work is based on the specific resource needs for each farm and their unique issues. NRCS, FSA and conservation districts are responsible for working with landowners and farmers on implementing voluntary cost shareable practices from the NRCS FOTG and FSA guides, and the processes to implement these Best Management Practices (BMPs) can take a series of years to implement and maintain. The rules on designing, engineering, installing, and paying for these practices are all very complex. These efforts have consistently shown to benefit soil and water resources and documented for use to support species recovery.

We encourage the EPA to take additional time to seek input from local and regional agricultural and watershed planning groups, state conservation commissions, conservation districts, state lead agencies for pesticide regulations and their partners, agricultural research and university extension experts, and USDA Agricultural Research Service (ARS) experts. This will provide additional input to assess national and local resource management systems and result in a more adaptive approach that will protect both ES species and agriculture. EPA should actively collaborate with the agricultural sectors in each pilot species area, with the many state agencies involved in resource management, including pesticide SLAs, and state Conservation Commissions and Conservation Districts. This collaboration will allow for a scientifically supported shift from the mitigations being proposed to a more variable and adaptable system that will be more economically and socially acceptable and benefit sustainability in agriculture and the recovery of ESA listed species. Farm practices and mitigation decisions are based on numerous factors and those often-voluntary practices and strategies are affected by many variables: the farm operation, farmer preference, crops, crop rotation, soils, slope, topography, weather, rainfall, irrigation, on-farm conditions, soil health, equipment available, pest pressure, nutrient needs, crop protection and input decisions, BMPs or NRCS FOTG Practice Standards.

As provided, the white paper provides just a few mitigations which is unnecessarily restrictive and will not be appropriate for every situation. This restrictive approach does not take into account other farm mitigation and practice standard, existing operational practices on the farm that are effective, and eliminates the opportunity to have an adaptive process. Implementation of voluntary BMPs or combinations of BMPS should be a decision made by the farmer, landowner, and contributing farm consultants, with, input from CD and NRCS staff so decisions are made that fit the farm, crops, soil type, and other unique factors.

Mitigations allowed, whether NRCS practice standards or other BMPs should be technically feasible, economically feasible, and acceptable to the farmers who are stewards of our land, resources and environment, including endangered species.

We encourage EPA to consider a mitigation system framework that can allow these three criteria to be met:

- Technical Feasibility - is based on research findings, field trials and years of practical field experience that demonstrate the BMP's effectiveness, alone or in combination with other component practices, in reducing the amount of nonpoint source pollution and impacts from agricultural activities.
- Economic Feasibility - is based on economic evaluation and practical experience that demonstrate the BMP to be cost-effective in reducing the amount of pollution from agricultural nonpoint source and agricultural activities.
- Acceptable - practices are those component practices that the responsible party is willing to apply and maintain, and with installation cost share and maintenance incentives.

There are many examples of agricultural soil erosion protection, watershed protection and ESA protection programs around the nation that should be looked at as workable examples. Modeling and adaptive farm planning with diverse FOTG practice standards can be combined with BMP

and management decisions with farmer input for a holistic systems approach for water quality and species protection. Many states diverse protection programs whether it's the Great Lakes areas, west coast, Midwest, Southeast, and the Chesapeake Bay Program states have implemented these types of approaches. Here are some other concepts that BMP programs in these regions and others have followed.

- As voluntary implementation occurs, there should be a mechanism to direct BMP implementation adjustments in watersheds with landowners and with support from CDs who can assist with BMP O&M assessments, and follow-up effectiveness monitoring. A continuing process of evaluation and implementation could occur.
- A combination of component practices can be determined by the farmer and local experts to be the most effective by agricultural activities.
- Buffers and associated BMPs should be decided locally to address site-specific issues.
- BMP package decisions are based on site-specific data gathered and analyzed by the landowner, farmer, and a trained and experienced resource specialist that may be assisting.
- Because of all these unique factors and decisions, the distinctive combination of site characteristics and natural resource objectives will result in BMP and component practice(s) implementation that can be applied uniquely by each farm and within each watershed without having to meet a prescriptive approach.
- A framework should be developed that capitalizes on the foundations of the Practice Standards contained in the NRCS Field Office Technical Guide (FOTG) and FSA guides. Practices are voluntary and not everyone farms based on NRCS Practice Standards and the FOTG, so the process needs to be adaptive.
- BMPs are modified over time by NRCS, CDs, and farmers as there are making improvement in technology through research and demonstration, change in crops and cropping systems, change in soil health knowledge and conditions, change in commodity pricing and economic conditions, change in social conditions, cost share and subsidy programs, and change in resource concerns.
- This kind of system is intended to be adaptive and can change through effectiveness evaluations through local level assessments with support from state and federal agency partners.
- There are also so many other issues at play and every farm and location is different. Localized producer decisions are the key to success.
- All of the USDA NRCS FOTG Practice Standards:
<https://www.nrcs.usda.gov/resources/guides-and-instructions/field-office-technical-guides> should be options for landowners, and for Washington State those are found at: <https://efotg.sc.egov.usda.gov/#/details>, and should be cited by number and name in the guidance.
 - As an example, the Washington State FOTG and all the practices and technical notes listed below can be found here: [Field Office Technical Guide \(usda.gov\)](#)
 - An Index of important Conservation Practice Standards & Support Documents that could be utilized with ESA and Pesticide mitigation in mind are the following:
 - Agrichemical Handling Facility (309)
 - Alley Cropping (311)

- Amending Soil Properties with Gypsum Products (333)
- Anionic Polyacrylamide (PAM) Application (450)
- Aquaculture Pond (397)
- Brush Management (314)
- Conservation Cover (327)
- Conservation Crop Rotation (328)
- Constructed Wetland (656)
- Contour Buffer Strips (332)
- Contour Farming (330)
- Contour Orchard and Other Perennial Crops (331)
- Cover Crop (340)
- Critical Area Planting (342)
- Cross Wind Ridges (588)
- Cross Wind Trap Strips (589)
- Dam (402)
- Dam, Diversion (348)
- Deep Tillage (324)
- Dike or Levee (356)
- Diversion (362)
- Drainage Ditch Covering (775)
- Drainage Water Management (554)
- Early Successional Habitat Development/Management (647)
- Fence (382)
- Field Border (386)
- Filter Strip (393)
- Forest Farming (379)
- Forest Stand Improvement (666)
- Grade Stabilization Structure (410)
- Grassed Waterway (412)
- Groundwater Testing (355)
- Hedgerow Planting (422)
- Herbaceous Weed Treatment (315)
- Herbaceous Wind Barriers (603)
- High Tunnel System (325)
- Hillside Ditch (423)
- Irrigation and Drainage Tailwater Recovery (447)
- Irrigation Canal or Lateral (320)
- Irrigation Ditch Lining (428)
- Irrigation Field Ditch (388)
- Irrigation Land Leveling (464)
- Irrigation Pipeline (430)
- Irrigation Reservoir (436)
- Irrigation System, Microirrigation (441)
- Irrigation System, Surface and Subsurface (443)
- Irrigation Water Management (449)
- Lined Waterway or Outlet (468)

- Mulching (484)
- On-Farm Secondary Containment Facility (319)
- Pasture and Hay Planting (512)
- Pest Management Conservation System (595)
- Pond (378)
- Pond Sealing or Lining – Geomembrane or Geosynthetic Clay Liner (521)
- Pond Sealing or Lining, Compacted Soil Treatment (520)
- Pond Sealing or Lining, Concrete (522)
- Precision Land Forming and Smoothing (462)
- Range Planting (550)
- Residue and Tillage Management, No-Till (329)
- Residue and Tillage Management, Reduced Till (345)
- Restoration of Rare or Declining Natural Communities (643)
- Riparian Forest Buffer (391)
- Riparian Herbaceous Cover (390)
- Saturated Buffer (604)
- Sediment Basin (350)
- Shallow Water Development and Management (646)
- Silvopasture (381)
- Sprinkler System (442)
- Stormwater Runoff Control (570)
- Stream Habitat Improvement and Management (395)
- Streambank and Shoreline Protection (580)
- Stripcropping (585)
- Structure for Water Control (587)
- Structures for Wildlife (649)
- Subsurface Drain (606)
- Surface Drain, Field Ditch (607)
- Surface Drain, Main or Lateral (608)
- Surface Roughening (609)
- Terrace (600)
- Tree/Shrub Establishment (612)
- Tree/Shrub Pruning (660)
- Tree/Shrub Site Preparation (490)
- Underground Outlet (620)
- Upland Wildlife Habitat Management (645)
- Vegetated Treatment Area (635)
- Vegetative Barrier (601)
- Vertical Drain (630)
- Water and Sediment Control Basin (638)
- Water Harvesting Catchment (636)
- Waterspreading (640)
- Wetland Creation (658)
- Wetland Enhancement (659)
- Wetland Restoration (657)

- Wetland Wildlife Habitat Management (644)
 - Wildlife Habitat Planting (420)
 - Windbreak/Shelterbelt Establishment and Renovation (380)
 - Windbreak/Shelterbelt Renovation (650)
 - Woody Residue Treatment (384)
-
- Various FOTG products should document FOTG Practice Standards that are a part of the tools available at conservation districts to support farm approaches to protect streams and ESA habitat and species.
 - There are also so many other issues at play and every farm and location is different.
 - The farm planning decisions need to be localized with the producers and the technical provider that is assisting with the farm planning.
 - We recommend including flexibility of the mitigation systems based on each ESA species recovery needs, habitat protection needs, watershed, pesticides to be management and mitigated, type of farm and crops, crop rotation, BEs and BiOps, EPA OPP pesticide labeling strategies to meet RPMs and RPAs, watershed modeling, dynamics of the lands and farms involved, and the overall economic, social, and cultural factors of implementing voluntary BMP programs with landowners.
 - EPA should look at all the diverse FOTG Practice Standards and develop checklists and credit systems for BLT and pesticide labels.
 - Some of the theories from EPA OCSPP and NOAA NMFS BEs, BiOps and the new ESA Work Plan come from the SETAC Europe effort and literature contained in the science document, *Mitigating the Risks of Plant Protection Products in the Environment: MAgPIE* (May, 2017) <https://www.setac.org/resource/magpie-epub-zip.html>
 - Information and literature from other mitigation programs and NPS Plan efforts around the nation would benefit EPA also, including for this white paper. Some of the states in the Chesapeake Bay Program area are conducting a variety of watershed modeling, mitigation approaches and have developed detailed guides that should be assessed and utilized. EPA should continue to seek additional information from other states and researchers in the Chesapeake Bay area and other regions to assess how BMP guides and research is being development and implemented. There are other programs to look at from around the nation also that contain mitigation strategies and policies that would be helpful for EPA look at and utilize.
 - These documents and programs would also be helpful to review:
 - <https://lancasterconservation.org/wp-content/uploads/Riparian-Forest-Buffer-Code-391-PDF.pdf>
 - <https://agbmps.osu.edu/bmp/riparian-forest-buffers-nrcs-391>
 - https://pnwagro.forestry.oregonstate.edu/sites/default/files/Fleenor_Riparian%20Buffer%20Considerations_III.pdf
 - <https://www.aftaweb.org/about/what-is-agroforestry/riparian-buffers.html>
 - https://www.chesapeakebay.net/documents/BMP-Guide_A.12_Forest-Buffers-and-Grass-Buffers_.pdf
 - https://www.chesapeakebay.net/documents/BMP-Guide_Full.pdf
 - https://www.chesapeakebay.net/documents/3a_Forest_Buffer_final.pdf

- https://www.chesapeake.org/stac/wp-content/uploads/2019/12/FINAL_STAC-Report_Multifunctional-Buffers_12.20.2019.pdf
- <https://chesapeakeforestbuffers.net/wp-content/uploads/2017/01/West-Virginia-Final-Report.pdf>
- Factors Affecting Farmers' Adoptions of Flexible Riparian Buffers Xiaogu Li (xql5271@psu.edu), Katherine Y. Zipp (kyz1@psu.edu) and James Shortle (jss15@psu.edu) Department of Agricultural Economics, Sociology, and Education, Penn State University Selected Paper prepared for presentation at the 2018 Agricultural & Applied Economics Association Annual Meeting, Washington, D.C., August 5-August 7
<https://ideas.repec.org/p/ags/aeal8/274007.html>
- https://dnr.maryland.gov/criticalarea/Documents/CriticalArea_BufferResourcesGuide.pdf
- <https://content.ces.ncsu.edu/agricultural-riparian-buffers>
- <https://www.arlis.org/docs/vol1/71303840.pdf>
- [The Agricultural BMP Handbook for Minnesota | Minnesota Department of Agriculture \(state.mn.us\)](https://www.state.mn.us/agriculture/)
- <https://bwsr.state.mn.us/minnesota-buffer-law>
- https://stormwater.pca.state.mn.us/index.php?title=Sediment_control_practices_-_Buffer_zones
- <https://wrl.mnpals.net/islandora/object/WRLrepository%3A2749>
- <https://extension.okstate.edu/fact-sheets/riparian-buffer-systems-for-oklahoma.html>
- <https://planning.hawaii.gov/czm/initiatives/coastal-nonpoint-pollution-control-program/hawaiis-implementation-plan-for-polluted-runoff-control/>
- <https://www.deq.idaho.gov/water-quality/surface-water/nonpoint-source-management-program/>
- <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15269><https://www.oregon.gov/deq/wq/programs/Pages/Nonpoint.aspx>
- <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3073#:~:text=This%20division%20explains%20how%20local,plans%20and%20land%20use%20regulations.>
- <https://www.oregon.gov/odf/board/Documents/fmp-hcp/rca-temp-protect-memo.pdf>
- <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9040.pdf>
- <https://puyallup.wsu.edu/agbuffers/>
- <https://mrsc.org/Home/Explore-Topics/Environment/Critical-Areas-and-Species/Flexibility-in-Environmental-Regulation.aspx#buffer>
- <https://your.kingcounty.gov/dnrp/library/1992/kcr847.pdf>
- <https://www.epa.gov/sites/default/files/2019-02/documents/riparian-buffer-width-2005.pdf>
- Crop Science Society of America <https://www.crops.org/news/science-news/research-shows-more-riparian-buffer-strips-can-protect-our-waterways/>

- Association of Temperate Agro Forestry <https://www.aftaweb.org/latest-newsletter/temperate-agroforester/91-2005-vol-13/july-no-3/102-flexibility-needed-for-use-of-riparian-buffers-in-water-quality-trading.html>
- <https://access.onlinelibrary.wiley.com/doi/full/10.1002/jeq2.20149>
- https://www.skagitcounty.net/envisionskagit/documents/econw_finalreport.pdf
- https://salishsearestoration.org/images/f/fe/GEI_2002_agricultural_riparian_buffers.pdf
- <https://par.nsf.gov/servlets/purl/10212633>
- <https://puyallup.wsu.edu/agbuffers/>
- <https://www.iaagwater.org/saturated-buffer-batch-and-build>
- <https://www.extension.iastate.edu/news/saturated-buffer-field-day-be-held-july-25-near-slater>
- <https://www.cals.iastate.edu/inrc/wider-not-necessarily-better-iowa-state-research-seeks-optimize-saturated-buffer-design>
- <https://www.leopold.iastate.edu/files/pubs-and-papers/2013-06-funding-impact-brief-bear-creek-riparian-buffer-project.pdf>
- <https://www.extension.iastate.edu/smallfarms/what-riparian-buffer/>
- <https://www.nrcs.usda.gov/programs-initiatives/rcpp-regional-conservation-partnership-program/regional-conservation-partnership-program-2022-projects>
- <https://landstewardshipproject.org/wp-content/uploads/Multiple-Benefits-of-Ag-Report.pdf>
- <https://crops.extension.iastate.edu/cropnews/2020/07/measuring-conservation-and-nutrient-reduction-iowa-agriculture>
- <https://iowaagriculture.gov/crep>
- <https://store.extension.iastate.edu/product/Woodchip-Bioreactors-for-Nitrate-in-Agricultural-Drainage>
- <https://store.extension.iastate.edu/product/Applying-Woodchip-Bioreactors-for-Improved-Water-Quality> <https://northcentral.sare.org/resources/woodchip-bioreactors-for-nitrate-in-agricultural-drainage/>
- Iowa State University STRIPS Program and Research: <https://www.nrem.iastate.edu/research/STRIPS/>
- Washington State VSP Program: <https://www.scc.wa.gov/vsp>
- Oregon Pesticide Stewardship Program: <https://www.oregon.gov/oda/programs/pesticides/water/pages/pesticidestewardship.aspx>
- Michigan's Agriculture Environmental Assurance Program (MAEAP) <https://www.michigan.gov/mdard/environment/maeap>

Anticipated difficulty in applicator and/or inspector determination of avoidance habitat

Species avoidance bulletin language, such as that for the Winged mapleleaf and other species listed under table 3, relies on pesticide applicator interpretation of species habitat descriptions to determine where applications are prohibited. Concern exists on several levels for this approach:

- 1) Pilot species were, in-part, chosen for this pilot based on their vulnerability to pesticide exposure. However, many of these species' habitats, as described in table 3, outline aquatic environments that are infrequently targeted through legal, typical, pesticide use. Proposed avoidance mitigation may be unlikely to improve pilot species pesticide exposure issues since avoidance mitigation is limited to prohibiting applications to aquatic habitats (creeks, streams, and large rivers).
- 2) The lack of differentiated, designated avoidance PULAs, like those provided for species with designated critical habitats/ranges, is concerning because it leaves critical habitat determinations up to applicators who may not have the specialized knowledge to properly infer listed species location. This approach is further complicated due to the inclusion of multiple habitat descriptions (short, and detailed) within table 3. Use of the detailed habitat descriptions by applicators for purpose of determining the avoidance PULA could result in mis-categorization of habitat under evaluation. For example, an applicator is likely to be able to determine where a creek, stream, or large river is present (short habitat description); but may inaccurately classify an aquatic area where there is low sediment deposition, coarse and compact sand, and fast, clean moving water with low turbidity. Inclusion of detailed habitat descriptions may result in less conservative pesticide application practices.

These above issues also may apply to inspectors struggling to enforce these new bulletins. Finalized avoidance bulletin language should not require habitat interpretation by applicators or inspectors.

Improving Bulletins Live! Two (BLT), and Challenges expected with interpreting and enforcing proposed BLT bulletins for pesticide applicators and state lead agencies.

State lead agencies anticipate several challenges in enforcing newly proposed bulletin requirements because of the level of specialized knowledge required by applicators and state lead agency staff to interpret appropriate implementation of pick list measures. While information contained within the Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation Practices to Protect Non-Target Plants and Wildlife is useful in helping better understand how the EPA envisions these practices being implemented, technical guidance falls short of defining prescriptive design elements for each pick list practice. To follow the proposed bulletins, applicators will need to know key pieces of information about the land (water management practices) and agronomic practices (e.g., contour farming, cover crops, reduced tillage) utilized. Many applicators may not have such specialized knowledge, particularly if they are not the landowner or operator of the land.

Farmland in many parts of the United States is often owned and operated by different parties and inputs, like pesticide application, can be provided by a third, commercial, entity. In these scenarios, land managers and pesticide applicators may have no control over implementing large-scale changes to the land. The EPA should consider situations in which farmland is owned and operated by different parties. By requiring the use of land management practices through a bulletin's pick list, concern exists that the EPA is making an applicator responsible for the implementation of land management practices they do not control. The EPA should make it

abundantly clear, through training and outreach, who is to be held responsible for violations of pick list land management practices.

New label language will require applicators to visit and navigate multiple websites such as online weather services (to obtain information on the likelihood of future storms resulting in runoff), and Bulletin Live! Two (BLT) website (to identify regional ESA bulletin restrictions). Information obtained from these websites would then need to be interpreted and applied to the intended application site to determine if label requirements were met. Issues with enforcement of BLT bulletins containing seasonal mitigation are also anticipated by state lead regulators. Currently, the BLT website does not allow users to view bulletins retroactively, making reference to past mitigation requirements difficult and further necessitates the need for a recordkeeping requirement. Because these processes may be new to many applicators and state lead regulators, strong training and outreach by the EPA will be required. Additional funding through cooperative agreements would be beneficial for state lead agencies to assist the EPA with education and outreach for stakeholders and will be needed to educate and train SLA inspectors.

There is general widespread agreement from SLAs provide to SFIREG that specific label language referring to BLT is the correct and proper mechanism to notify applicators of changes with products for the protection of Endangered Species. Users and the regulators will need additional training on how to utilize BLT especially as new notices emerge. There are concerns about the latest utilization of species ranges, boundaries, and spatial coverages used in BLT and the applicability of these areas to pesticide applicator use locations. Understanding BLT can be difficult; some of the spatial coverages will be tricky to understand and not all applicators and users are able to navigate effectively within an online computer application and platform. Improving the mapping tools and the functionality of BLT could be helpful. We suggest platform options be added to allow searches by active ingredient, product name, state, county, watershed number, geospatial coordinates, and any other technological search tool that could be helpful. As it currently works, BLT is an inadequate geospatial platform and should be improved. We also recommend an application that could be utilized on mobile devices. Growers, applicators, registrants, and regulators would all benefit from an improved system and applications that could be accessed on mobile devices.

Concern over lack of record-keeping requirements

The draft plan for the EPA's Vulnerable Listed Species Pilot Project takes a holistic approach towards avoiding and minimizing pesticide impacts to a subset of listed pilot species. Mitigation guidance covers foreseeable, legal uses of pesticide products currently registered and provides new requirements for application methods, timing, and rates. This complex approach is nuanced and will require pesticide applicators to carefully read and understand site specific criteria to accurately and legally carryout pesticide applications in areas near pilot species and their habitat. Bulletins will require applicators to evaluate site-specific criteria related to wind direction, presence of wind breaks/shelters or other EPA specified buffers, PULA designations (avoidance vs minimization, and use of short vs detailed habitat description), broadcast spray droplet size, application method (aerial, ground, airblast), soil saturation, irrigation rates, weather forecast,

and local conservation practices currently in place for the intended application site. As the EPA works on implementing BLT bulletins, state lead regulators, often responsible for enforcing EPA's regulations, request the EPA to include record-keeping requirements for the above site-specific criteria to make assessment of label compliance possible "after the fact."

Concerns about other forms of pesticide exposure

While it is recognized that the EPA believes their approach is likely to capture a large portion of pesticide exposure for listed pilot species and their habitat, some concern still exists for alternate exposure pathways and/or pesticide users not covered by this pilot project. Exposure pathways related to treated seed and granular dust-off and consumption may still pose risk to listed pilot species and bulletin language does not address these other sources of pesticide exposure. While the EPA has targeted non-residential outdoor use sites, this may not adequately protect listed pilot species with designated critical habitats/ranges found in metropolitan, residential settings. For example, in parts of the mid-west, Rusty patch bumble bee may be more commonly found in metropolitan, residential settings than agrarian ones. By excluding certain pesticide users, such as urban/residential applicators and residents, the EPA may be missing an important routes of pesticide exposure for some pilot species like the Rusty patch bumble bee.

As SLAs and coregulators, SFIREG is looking to be supportive, to contribute to a workable mitigation and white paper approach that can protect listed species while fitting into national ES recovery plans and agricultural production systems. We recommend that EPA strive for the best science-based mitigations, which is a requirement of the Endangered Species Act and create guidance that will support our diverse agricultural systems and farmers SLAs in the regulatory processes. We question many aspects of the previous guidance and appendix update by EPA, and also this ESA white paper. We continue to provide a variety of scientific and technical information in our comment letters that we feel are helpful, but we doubt EPA considers these contributions as valuable based on the response. This ESA white paper as written will have very significant negative social and economic impacts for agriculture, rural economies, and has potential to imperil food security and availability. We are not sure how this ESA white paper will actually assist recovery of the ESA listed species as the concepts seem to solely focus on pesticide use and do not address the complexity of ES recovery plans Real world solutions must be implemented in coordination with landowners, state and local agencies, and other locally based technical service providers that can assist in actual tangible and effective recovery work. We strongly recommend reworking this white paper, and to involved SLAs, SFIREG and other partners in that revision, while utilizing a more adaptive approach that can be effectively paired with concepts from science-based approaches that have been found to be successful. Also, utilizing agricultural groups and researchers, state and local conservation district expertise, and the agricultural partners and producers at the state and local level is recommended.

Summary

In conclusion, we suggest EPA work to involve SLAs, SFIREG and the JWC to build a comprehensive and workable ESA and pesticide program that would provide for scientific

support for mitigation practices that would work for SLAs, NRCS, conservation districts, landowners, growers, applicators, and registrants. We recommend a broader pesticide and ESA team that would involve SLAs, NRCS, FSA, USDA Agricultural Research Service (ARS), USDA Office of Pest Management Policy (OPMP), Conservation Districts, agricultural land grant institutions, pesticide safety educators, and others around the country. Ideally these groups can contribute their experiences and science expertise to the process related to agricultural pesticide uses, comprehensive practices for water quality and ESA protection, and the FOTG and FSA guide expertise to assist in developing a workable and an acceptable ESA pesticide framework. SFIREG suggests that EPA hold an extensive national workshop or a series of working meetings with SFIREG, SLAs, and partners to develop a practical approach that is acceptable to SLA, SFIREG, and agriculture. We suggest that these efforts be funded and staffed properly by EPA and other partners like USDA, similar to other recent USDA programs such as the climate smart commodity work, where states, landowners and pesticide users can be supported for this important work. AAPCO also has a new Pesticide and ESA Workgroup that has been formed to assist in facilitating these types of engagement opportunities for sound regulatory and scientific system processes.

SFIREG and SLAs are focused on providing science-based information and consistent regulations for EPA, the public, stakeholders, and industry. We thank EPA for the opportunity to comment and to express our concerns on this issue.

We look forward to working with EPA on these important science and regulatory processes. Thank you for your consideration.

Sincerely,



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Proposed Herbicide Strategy

August 10, 2023

Jake Li, Deputy Assistant Administrator for Pesticide Programs
Holly Rogers, Biologist
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Katrina White, Senior Advisor
Paul Di Salvo, Senior Regulatory Specialist
Kristina Garber, Senior Advisor

Office of Pesticide Programs
U.S. Environmental Protection Agency



Purpose and Scope of Today's Webinar

- Purpose: To provide an overview of the proposed Herbicide Strategy released on July 24, 2023 for a 60-day public comment period
- Documents are available in Docket ID: [EPA-HQ-OPP-2023-0365](https://www.epa.gov/dockets/epa-hq-opp-2023-0365)
 - Framework
 - Case Studies
 - Technical Support for Mitigation
 - Same document released with the Vulnerable Species Pilot in June 2023
 - Example Application of Proposed Strategy to Crop Production Systems
- Public Comment Period Closes: September 22, 2023



Nipomo Mesa Lupine,
Robyn Gerstenslager/U.S. Fish and Wildlife Service
<https://www.fws.gov/species/nipomo-mesa-lupine-lupinus-nipomensis>

Outline

- Goal and scope of the proposed Strategy
- Overview of the proposed Strategy process
 - Identify impacts to populations of listed species
 - Identify mitigations
 - Identify geographic extent of mitigations
- Example mitigation for crop production systems
- Implementation
 - Coordination within EPA and with federal partners
- Public comment submissions
- Next steps



Short's goldenrod

Andrew Lee, U.S. Fish and Wildlife Service

<https://digitalmedia.fws.gov/digital/collection/natdiglib/id/25275/rec/27>

Proposed Herbicide Strategy is a Part of EPA's Pesticide Program's ESA Workplan



Balancing Wildlife Protection and Responsible Pesticide Use: How EPA's Pesticide Program Will Meet its Endangered Species Act Obligations

2022



www.epa.gov/endangered-species

Released April 2022



ESA WORKPLAN UPDATE:

Nontarget Species Mitigation for Registration Review and Other FIFRA Actions

November 2022



<https://www.epa.gov/endangered-species/epas-workplan-and-progress-toward-better-protections-endangered-species>

Released November 2022

Goal of the Proposed Herbicide Strategy

- Develop a mitigation framework for conventional herbicides used in agriculture
 - Lower 48 states
 - Considering potential impacts to 400 listed plants and 500 listed animals that depend on plants
 - Minimize offsite exposure occurring via spray drift, runoff, or erosion
 - Species covered by the U.S. Fish and Wildlife Service
- Improve our Endangered Species Act efforts by making them more timely, efficient, consistent, and predictable
- Type and level of mitigation would be identified specific to the chemical, crop, and application method based on the potential impacts to listed species





Proposed Framework Overall Process

Identify
Impacts
to Listed
Species



Identify
Type and
Level of
Mitigation



Identify the
Geographic
Extent of
Mitigation

Step 1. Identify Impacts to Listed Species

- EPA would rely on a more efficient approach building on information in the current risk assessment to identify potential population impacts
- EPA would consider the herbicide's chemical properties, effects to plants in toxicity studies, and exposure profile for each agricultural use



Leafy Prairie-Clover,
Todd Crabtree / TDEC (obtained from FWS)
https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/3759.pdf



Step 2. Identify Type and Level of Mitigation

- The proposed Herbicide Strategy is focused on mitigation measures to reduce movement of herbicides off the treated field by the most common pathways: spray drift and runoff/erosion.
- The level of impact to listed plants and listed animals that depend on plants would determine the level of mitigation.
- The proposed Strategy is structured to provide flexibility to growers/pesticide applicators to choose mitigation measures that work best for their individual situations.

Spray Drift Mitigation

- Spray drift mitigation may be appropriate for herbicides applied as liquids via aircraft, groundboom, or airblast applications.
- A spray drift buffer between the application site and potential habitat for the listed species is one mitigation measure that could be proposed.
- Managed areas included in buffer:
 - Agricultural fields;
 - Roads, paved or gravel surfaces, managed areas next to the field;
 - Areas occupied by a building and its perimeter;
 - Areas maintained for runoff or drift control, such as vegetative filter strips, field borders, and other areas on the mitigation menu; and
 - Conservation Reserve Program (CRP) and Agricultural Conservation Easement Program (ACEP) areas.

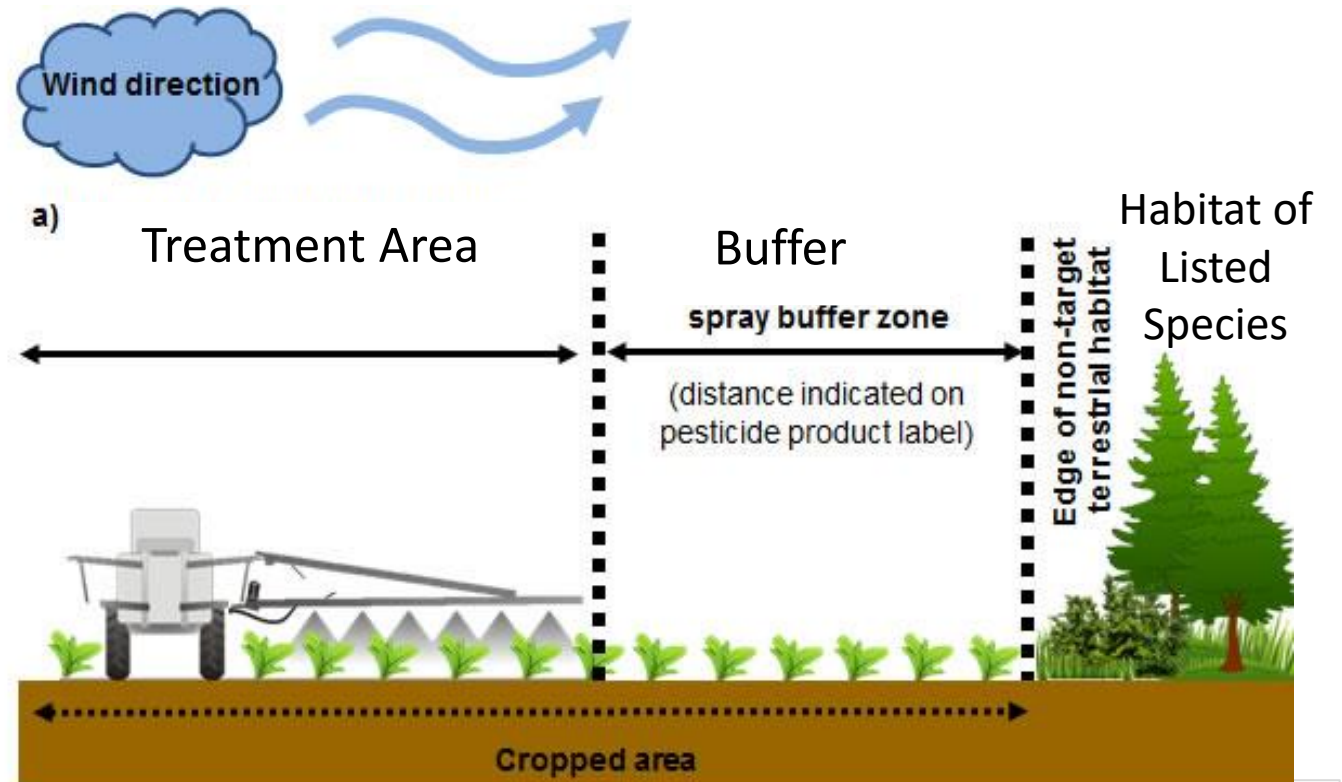


Diagram adapted with permission from the Pest Management Regulatory Agency of Health Canada (2020). Available at: <https://www.canada.ca/en/healthcanada/services/consumer-product-safety/pesticides-pest-management/growers-commercial-users/driftmitigation/protecting-habitats-spray-drift.html>

Spray Drift Mitigation

- Establish a spray drift buffer (as needed) based on application equipment, droplet sizes, and level of impact to listed species

- Buffers no larger than:
 - 200 – 300 ft (aerial applications)
 - 100 – 200 ft (ground applications)
 - 100 ft (airblast applications)

- Options to reduce any identified buffer include:
 - Hooded sprayers
 - Windbreaks

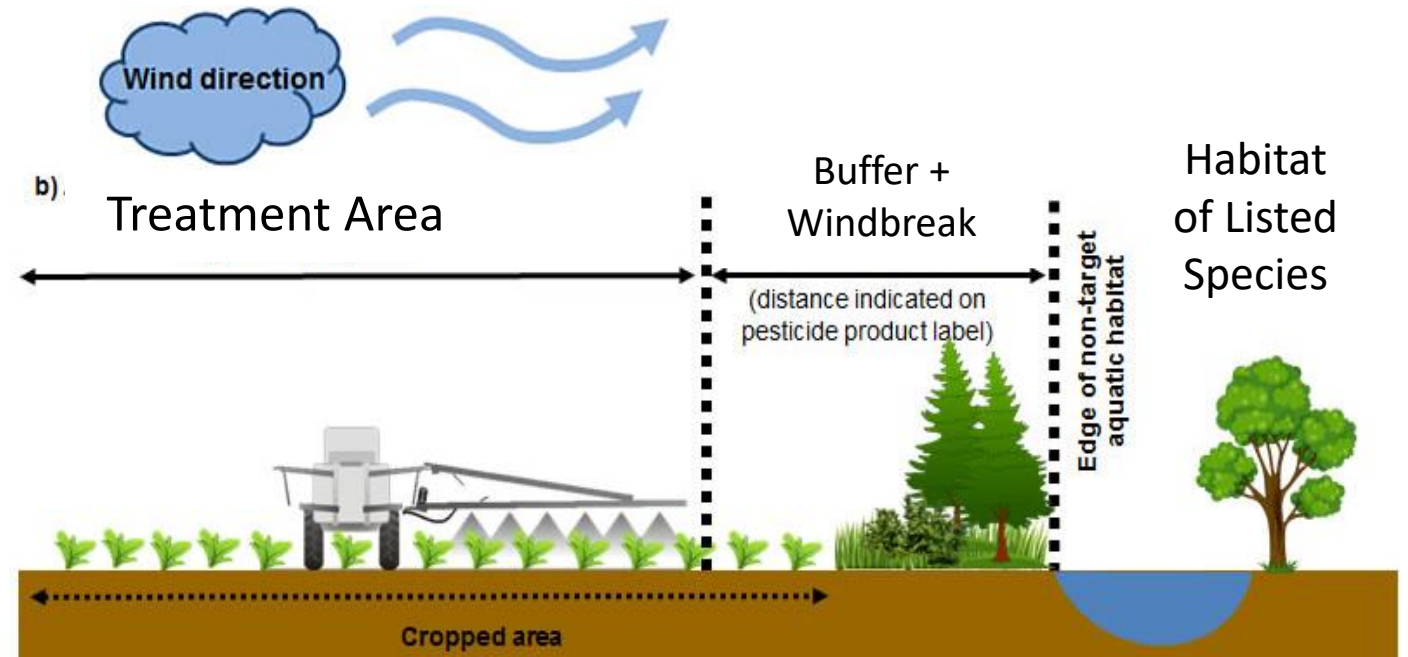


Diagram adapted with permission from the Pest Management Regulatory Agency of Health Canada (2020). Available at: <https://www.canada.ca/en/healthcanada/services/consumer-product-safety/pesticides-pest-management/growers-commercial-users/driftmitigation/protecting-habitats-spray-drift.html>

- EPA continues to refine the mitigation options for spray drift.

Runoff/Erosion Mitigation



Image Credit: Lynn Betts / U.S. Department of Agriculture, Natural Resources Conservation Service

https://commons.wikimedia.org/wiki/File:Runoff_of_soil_&_fertilizer.jpg

- Evaluated efficacy from available literature presented in the Technical Document
 - Points assigned to each mitigation measure based on efficacy in reducing runoff/erosion of pesticides from a treated field
 - High efficacy - 3 points
 - Medium efficacy - 2 points
 - Low efficacy - 1 point
- Menu of mitigation measures provides flexibility to growers
- Number of points would depend on the level of impact, which may range from no mitigation and up to 9 points
 - When the level of impact indicates that 9 points are not adequate to reduce impacts, additional mitigation may be identified

Runoff/Erosion Mitigation Menu

- **Field Management**

- Contour farming (2 points)
- Cover crop (1 point)
- Grassed waterway (1 point)
- In-field vegetative filter strip (3 points)
- Irrigation water management (1 point)
- Mulching with natural materials (3 points)
- Residue tillage management (2 points)
- Terrace farming (2 points)

- **Field Characteristics (1 point each)**

- Application to sand, loamy sand, or sandy loam soil without a restrictive layer
- Flat or nearly flat field (<2% slope)
- Fields in western farmland

- **Application Parameters**

- Rate reduction (points based on percent reduction in application rate)
- Soil incorporation (2 points)

- **Adjacent to the Field or In-between field and Habitat**

- 30-ft vegetative filter strip (2 points)
- Riparian area (3 points)
- Vegetated ditch (1 point)

- **Other Mitigations**

- Water retention system (2 points)
- Both on-field and adjacent to the field mitigation utilized (1 point)

Potential Exemptions from the Runoff/Erosion Mitigation Menu

EPA is considering exempting growers from runoff/erosion mitigation if:

- Field is more than 1000 ft away from potential habitat for listed species.
- Field has subsurface drainage installed
- Field is managed with a site-specific runoff and/or erosion plan implemented **according to the recommendations of a recognized conservation program or appropriate conservation expert**
 - Criteria for experts and conservations programs are in development to support this exemption.
 - EPA is seeking public feedback on the types of experts and programs that could be relied upon to ensure that this exemption could be effective at reducing off-field movement of pesticides.

Step 3: Identify the Geographic Extent of Mitigation

- Spray drift and runoff/erosion mitigation measures could be included on the general product label if the mitigations would be applicable for the entire use area.
- If mitigation measures would only be applicable in part of the use area, those mitigations would be identified for specific locations in Bulletins.
 - Locations of mitigations based on ranges and critical habitats of listed species most sensitive to herbicide impacts on plants
 - Will involve use of Bulletins Live! Two to capture multiple species' locations

Step 3. Identify the Geographic Extent of Mitigation

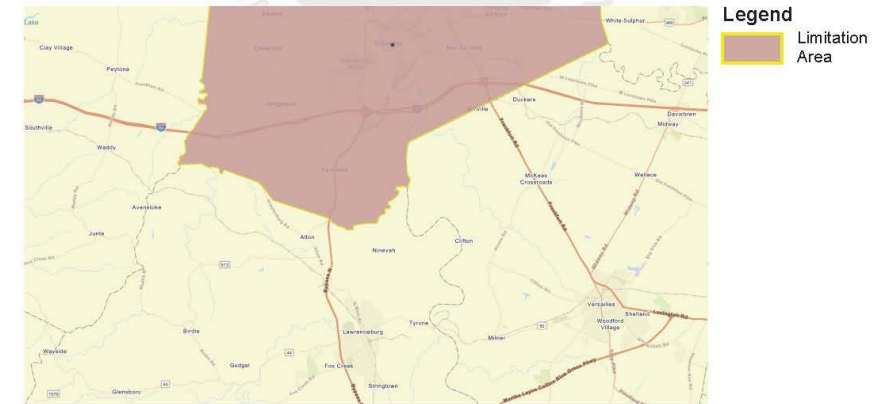
- EPA's Bulletins Live Two! (BLT) System would tell the user if they are subject to additional mitigation because the treated field is located in an area where listed species may be exposed
 - <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>
 - Allows EPA to focus mitigations on where they are most needed
- EPA is proposing to group similar types of listed plants and develop a map of where mitigations are needed for the entire group of species, instead of developing individual Bulletins for hundreds of species

Endangered Species Protection Bulletin



Application Month: September 2023
Product: A21472 Plus VaporGrip Technology (100-1623) ;
"TAVIUM PLUS VAPORGRIP TECHNOLOGY"

- 1 Areas where pesticide use must be limited are identified on the map. A legend is located beside the map to help pinpoint these locations.



- 2 Look below at the Pesticide Use Limitation Summary Table. This table lists the user selected Active Ingredient(s) (AIs) or Product(s) with pesticide use limitations on the printed map. Locate the Active Ingredient (AI) or Product you intend to apply in this table and identify the code in the last column. This code indicates the specific limitation associated with that AI or Product. A limitation description for each code can be found below in the Codes and Limitations Table. If multiple Pesticide Use Limitation Areas (PULAs) are visible on the map, these tables provide information for the highlighted PULA.
If you are applying a pesticide that contains more than one Active Ingredient, or multiple Products, then multiple codes may apply. Follow the limitations for all codes when using this pesticide.

This document contains legal requirements for the use of certain pesticides.
Do not modify any text, graphics or coloration or otherwise alter this document.
ESPP Contact: ESPP@epa.gov Phone: 1-844-447-3813

Results of Example Case Study: Identify Type and Level of Mitigations, Identify the Geographic Extent of Mitigation

Spray Drift Buffers:

Application Rate (lb a.i./A)	Buffer Distances for Ground Application (Fine to Medium/Coarse, High Boom)
<i>General Label</i>	
0.50	25 ft
<i>Bulletins*</i>	
0.50	75 ft
*If a grower/applicator is in an area where the Bulletin applies, they would follow the most restrictive mitigation (75-ft buffer).	

- Could reduce buffers by half with the use of a hooded sprayer or if a windbreak is present.
- For buffers of 25 ft or less, could eliminate buffer with a windbreak or use of a hooded sprayer.



Scenarios describe possible implementation of runoff and erosion mitigation measures proposed in the draft **Herbicide Strategy** ([EPA-HQ-OPP-2023-0365-0006](#))

- Scenarios represent a range of cropping systems and production environments that growers could achieve a particular number of points
 - Describes common measures likely in place now and measures that could be adopted in the future
- EPA considered the USDA Conservation Effects Assessment Project ([CEAP](#)) [report](#) from 2022
 - Summarizes adoption rates of conservation practices on cropland in the U.S. at a regional level from surveys conducted in 2013 and 2016

Mitigation Measures with Corresponding Efficacy Scores*

Low (1 point)	Medium (2 points)	High (3 Points)
Western farmland (low rainfall)	Soil incorporation	In-field vegetation strip (several options)
Sand, loamy sand, sandy loam soils	Contour Farming	Mulching with natural materials
Flat fields (<2% slope)	Residue tillage management	Riparian area
Cover crop/ continuous ground cover	Water retention systems	
Grassed waterway	Terrace farming	
Both Adjacent to- and On- field practices on the same field	30-foot vegetative filter strip (adjacent to the field)	
Vegetated ditch		
Irrigation water management		

* Point values for **rate reductions** are proportional to the reduced rate compared to the maximum single application rate per acre rate (e.g., banded applications, precision agricultural systems). For details, see the [Draft Herbicide Strategy Framework](#) and [Draft Technical Support](#) document in the docket.

Example Scenario: Iowa Corn on Sloped Land

Description:

- Soils are not sandy
- Non-irrigated
- **Current conservation measures in place**
 - Conservation tillage (residue tillage management)
 - Terraces are present due to the slope
 - Contour farming
 - Cover crop
 - Grassed waterway

CEAP Report:

- 4% of acres are irrigated
- 75% of acres have conservation tillage
- 25% of acres have practices like contour farming, terrace farming or in-field vegetative barriers
- 38% of acres have practices like grassed waterways or water control structures
- 32% of acres have vegetation adjacent to the field, e.g., field borders, **vegetative filter strips***

Practice	Points
Residue Tillage Management	2
Terracing	2
Contour Farming	2
Cover Crop	1
Grassed Waterway	1
Sum of Points for Existing Practices = 8	
Adjacent to Field Vegetative Filter Strip	2
Both Adjacent to- and On- field practices on the same field ²	1
Sum of Potential Additional Measures* = 3	
Sum of Total Points = 11	

Example Scenario: Texas High-Plains Cotton

Description:

- Non-irrigated
- Soils are not sandy
- Fields are located on flat terrain
- **Current conservation measures in place**
 - Conservation tillage (residue tillage management)

CEAP Report:

- 75% of acres are not irrigated
- 64% of acres have conservation tillage
- 62% of acres do not have practices like contour farming, terrace farming or in-field vegetative barriers
- 19% of acres have practices like grassed waterways or water control structures
- 9% of acres have vegetation adjacent to the field, e.g., field borders, vegetative filter strips
- <5% of acres have cover crops

These growers will be challenged to achieve enough points to use herbicides needing more than 4 points and will need to consider exemptions as proposed in EPA's [Draft Herbicide Strategy Framework](#), rate reductions, or offsets

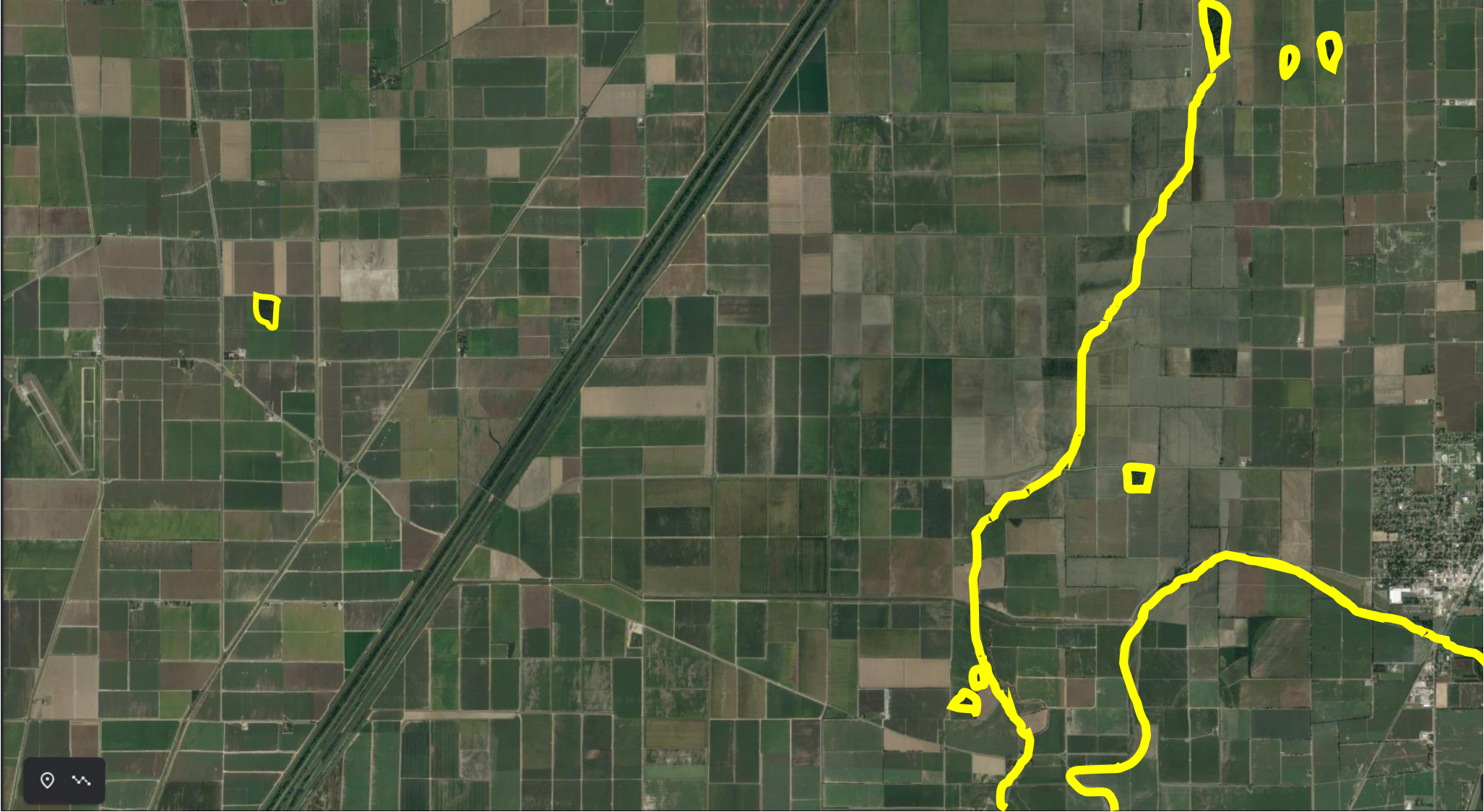
Practice	Points
Flat field (<2% slope)	1
Western Agriculture	1
Residue Tillage Management	2
Sum of Points for Existing Practices = 4	
Sum of Potential Additional Measures = 0	
Sum of Total Points = 4	

Possible Exemption: >1000 ft from habitat for listed species



- Area is ~65,000 ft X 40,000 ft

Possible Exemption: >1000 ft from habitat for listed species



- Area is ~65,000 ft X 40,000 ft
- Yellow lines represent 1,000 ft from potential habitat and may be subject to runoff/ erosion measures

Proposed Implementation Plan

- Mitigation would be applied to herbicides through the Registration Review process
 - Registration review schedule has been revised to account for the timing of the final Herbicide Strategy
 - Registration review schedule is available at <https://www.epa.gov/pesticide-reevaluation/upcoming-registration-review-actions>
- New herbicide active ingredients would incorporate the final Herbicide Strategy
 - Biological Evaluations will continue to be conducted before registration for new active ingredients
 - As EPA gains experience, the final Herbicide Strategy is expected to be applied to other registration actions
- Future additions and updates to mitigation menus
 - Considering development of EPA website to communicate mitigation menus and mitigation descriptions

Streamlined/Programmatic Consultation with US Fish and Wildlife Service (FWS)

- Once a streamlined consultation between EPA and US Fish and Wildlife Service is finalized, EPA would be able to use the more efficient Herbicide Strategy approach for effects determinations
- This Strategy would consider potential impacts to over 400 listed plants and 500 listed animals that depend on plants; all under FWS authority
- EPA plans to work with FWS to formalize streamlined consultation approach for herbicides
- Goal is to come to agreement on using the more efficient approach to identify potential population effects for listed species

Coordination Across Pesticide Regulation Efforts at EPA

- Internal collaboration to holistically approach ESA efforts in pesticide regulation
- To the extent appropriate, EPA is working to ensure consistency in mitigation measures across ESA Strategies and projects
 - Ensure that grower's investment in one mitigation measure is assured to receive credit across pesticides
- To the extent possible, EPA expects to align label language for mitigation across strategies

Coordination with Federal Partners

Listed Species Mitigation

Environmental Protection Agency

U.S. Department of Agriculture

U.S. Fish and Wildlife Service

- United States Department of Agriculture (USDA)
 - Understand available mitigation measures
 - Common descriptions and specifications of mitigation measures
 - Propose mitigation that considers the needs of growers
- U.S. Fish and Wildlife Service (USFWS)
 - Development of the Herbicide Strategy
 - Develop consultation process that considers the Strategy

How to Submit Public Comments:

EPA-HQ-OPP-2023-0365
Comments due: Sept 22, 2023

1) Go to:
Regulations.gov

2) Search the
docket number

3) Click
"Comment"

NR NONRULEMAKING DOCKET

Draft Herbicide Strategy Framework to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides

Created by the Environmental Protection Agency

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Last 15 Days (9)
Last 30 Days (9)
Last 90 Days (9)

OTHER
Memorandum to Open Docket for Comment "Draft Herbicide Strategy Framework to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides. Herbicide Strategy Framework Document"
Agency Environmental Protection Agency | Posted Jul 24, 2023 | ID EPA-HQ-OPP-2023-0365-0001
Comment ← [Red Arrow] Comments Due Sep 22, 2023

SUPPORTING & RELATED MATERIAL
Herbicide Strategy Case Study Summary and Process
Agency Environmental Protection Agency | Posted Jul 24, 2023 | ID EPA-HQ-OPP-2023-0365-0008

Topics for Public Comment

- Feedback on risk assessment approach
- New mitigation ideas([guideline studies](#))
 - Potential new measures to reduce spray drift:
 - Helpful if methodology includes information like: wind speed, temperature, relative humidity, application equipment, nozzle/droplet size, height of ground cover, etc.
 - Potential new runoff/erosion mitigations:
 - Helpful if methodology includes information like: soil type, slope of the field, % ground cover, amount and rate of water applied to induce the event, how and what was measured offsite, etc.
- Data are useful to show how new mitigations are implemented and how effective they are at reducing offsite movement, as well as to support any changes of efficacy scores





Photo by: Kent Fothergill

Topics for Public Comment

- Expert conservation specialist to reduce offsite movement
 - Who are the appropriate qualified individuals/groups; what are the key elements of a conservation program such that it adequately addresses offsite movement?
- Opportunities to refine the geographic scope of mitigations
- Areas of communication needed to help herbicide users navigate the implementation of the mitigation menu

Next Steps

- Documents available in the docket for public comment (Herbicide Strategy Docket: EPA-HQ-OPP-2023-0365 on www.regulations.gov)
 - Framework
 - Technical Support for Mitigation
 - Case Studies Summary and Method
 - Strategy Applied to Crop Production Scenarios
- Consider and respond to public comments and then finalize the Strategy
- Use the final Strategy to incorporate mitigation measures into regulatory decisions



Questions?

Herbicide Strategy Docket: EPA-HQ-OPP-2023-0365
on www.regulations.gov

Public comment period closes on September 22, 2023

For further information, contact Brian Anderson at
Anderson.Brian@epa.gov





Vulnerable Species Pilot Project

7/12/2023



Overview for Public Webinar
Jerrett Fowler, Acting Senior Scientist
Nicole Zinn, Team Leader
Office of Pesticide Programs



Draft for Public Comment

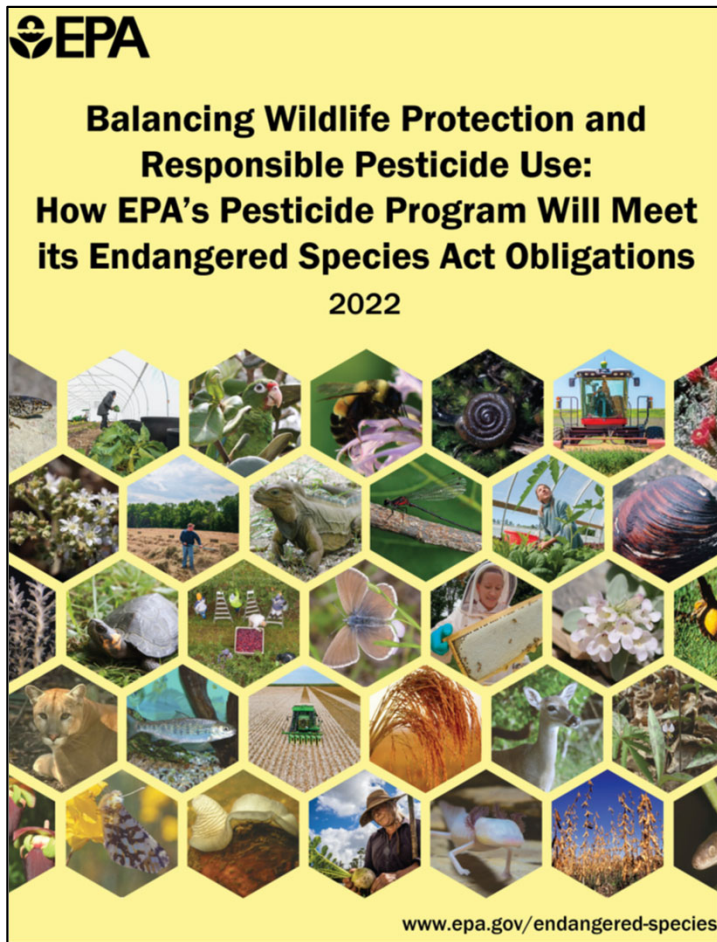


Draft for Public Comment

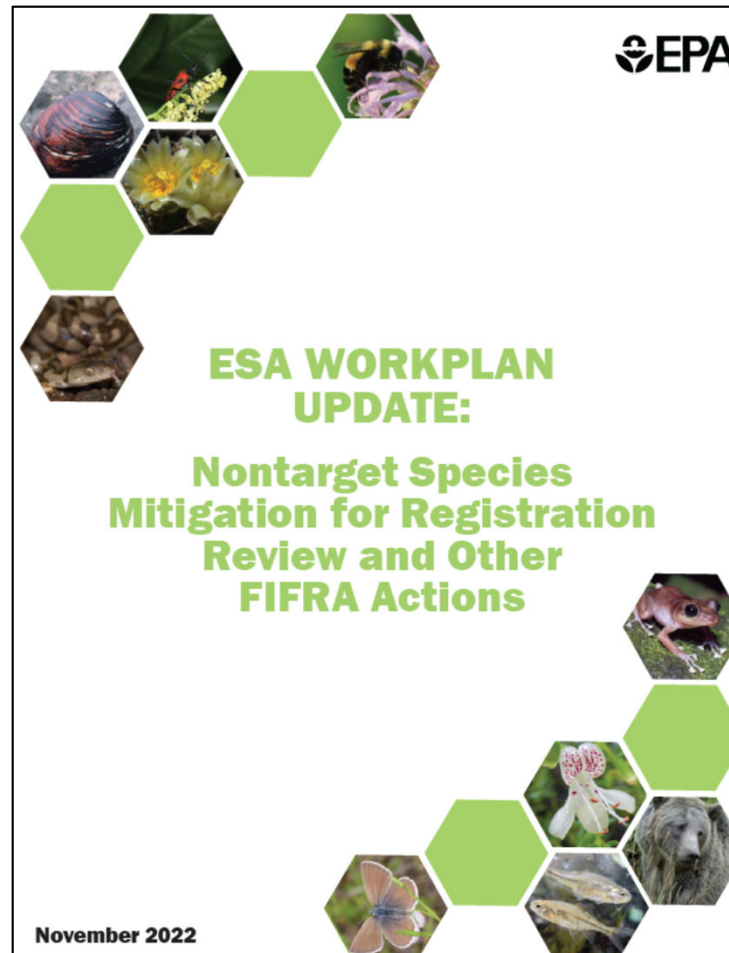
Purpose of this webinar:

- To provide an overview of the draft Vulnerable Species (VS) Pilot released on 6/22 for a 45-day public comment period
- Docket is available here: [EPA-HQ-OPP-2023-0327](https://www.epa.gov/epahome/epa-hq-opp-2023-0327)
 - Includes the Vulnerable Species White paper and supporting Technical Document
- Comments are due 8/06/2023

EPA's Pesticide Programs ESA Workplan



Released April 2022



Draft for Public Comment

[ESA Workplan Website](#)

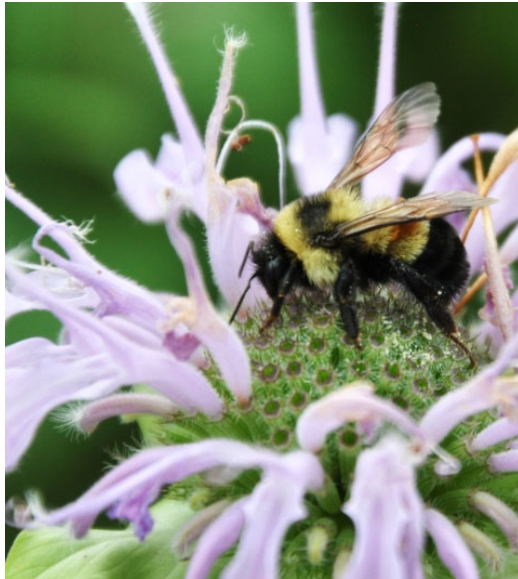
[Pilot Projects Website](#)

Outline of Presentation

- Overview of the Vulnerable species pilot project
 - Pilot species
 - Proposed mitigations
 - Evaluation
 - Technical Document
 - Proposed implementation
 - Possible expansion
- Outreach and timeline
- StoryMap demo

Draft for Public Comment



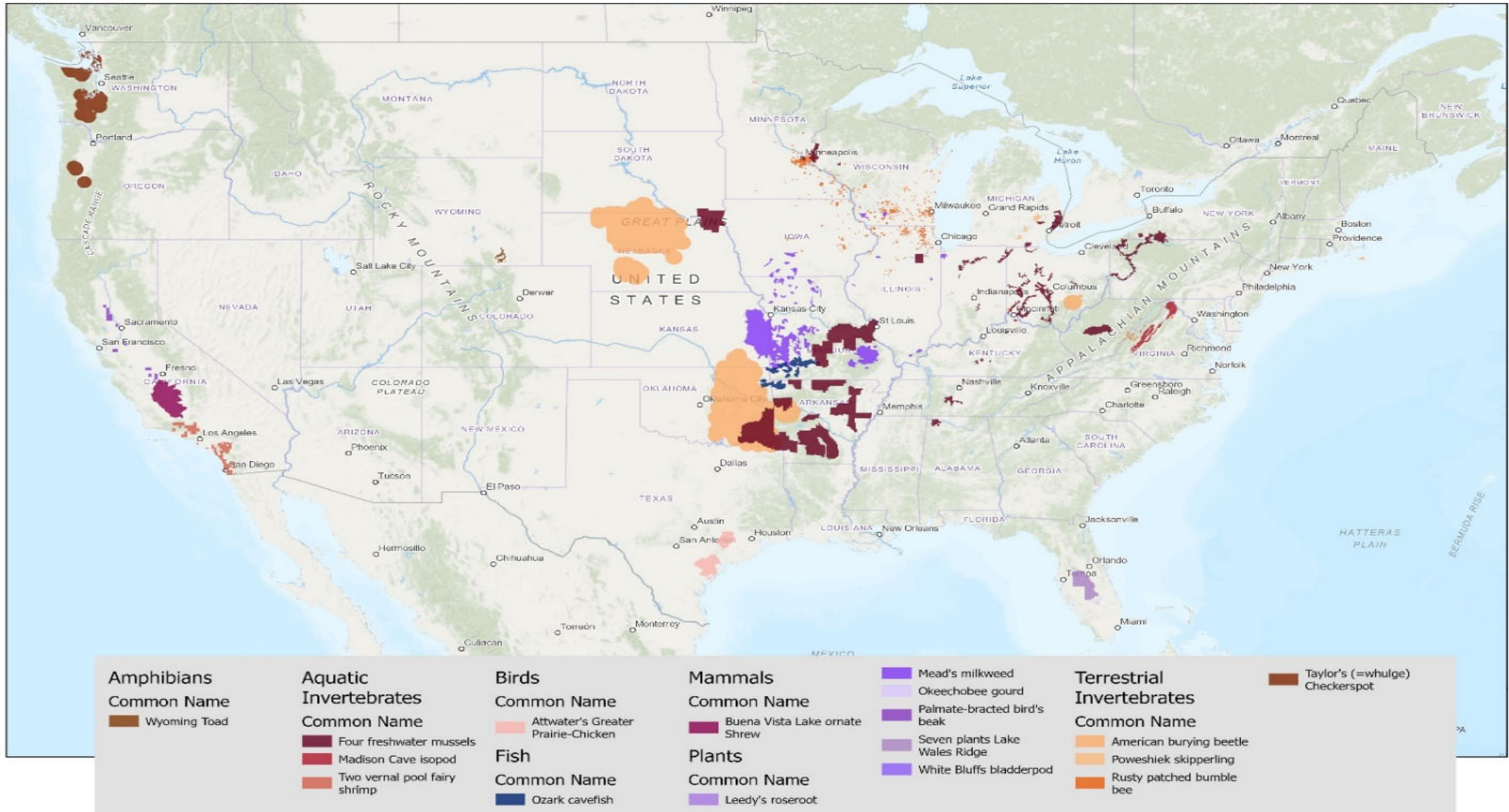


Pilot species

- Criteria
 - Fish and Wildlife Service has categorized species as high or medium vulnerability
 - Limited ranges
 - Pesticides identified as a potential stressor
- Approximately 20 species or groups of species representing diverse taxa
 - Plants
 - Terrestrial and aquatic invertebrates
 - Vertebrates (fish, amphibian, bird, mammal)
 - Variety of habitats (e.g., grassland, streams) and locations

Pilot Vulnerable Species

- Insects
 - Poweshiek skipperling
 - Rusty patched bumble bee
 - Taylor's checkerspot
 - American burying beetle
- Aquatic invertebrates
 - Madison cave isopod
 - Riverside and San Diego fairy shrimp
 - Ouachita rock pocketbook (mussel)
 - Rayed bean (mussel)
 - Scaleshell mussel
 - Winged Mapleleaf (mussel)
- Plants
 - Lake Wales Ridge species
 - Mead's milkweed
 - Leedy's roseroot
 - Okeechobee gourd
 - Palmate-bracted bird's beak
 - White bluffs bladderpod
- Fish, Amphibians, Birds, Mammals
 - Ozark cavefish
 - Attwater's greater prairie chicken
 - Buena Vista Lake ornate shrew
 - Wyoming toad



Locations of ranges and designated critical habitats (if available) of 27 vulnerable pilot species.

Proposed mitigations

- Plan to implement using Bulletins Live! Two
- Bulletins include two parts:
 - Location (referred to as a “Pesticide Use Limitation Area”)
 - Mitigations (referred to as “Pesticide Use Limitations”)
- Pesticide Use Limitation Areas are based on
 - Species’ ranges
 - And critical habitat if available
- Three types of mitigation
 - Avoidance
 - Spray drift minimization
 - Runoff minimization

Draft for Public Comment



Bulletins Live! Two (BLT)

- Bulletins contain enforceable pesticide use limitations to protect ESA-listed species or critical habitat.
- Bulletins Live! Two the web-based application to access Bulletins.
 - To access Bulletins in the system, users identify the intended pesticide application area, application month and EPA product registration number.
 - Available at <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>
 - A quick start guide and a tutorial are linked from this page



Environmental Topics ▾ Laws & Regulations ▾ Report a Violation ▾ About EPA ▾

[Endangered Species](#)

Bulletins Live! Two -- View the Bulletins

For assistance in using Bulletins Live! Two, [view the tutorial](#). Also see [background notes](#) and a [quick start guide for BLT](#).

Directions

This tool displays Pesticide Use Limitation Areas (PULAs) for products with active Endangered Species Protection Bulletins. To generate a printable bulletin, please follow these steps:

1. Navigate to your intended pesticide application area by using the "Location Search" tool or panning and zooming on the map itself.
2. Select your Application Month from the Application Date dropdown.
3. Search for a specific pesticide product using the EPA registration number and

Unpin

Location Search:

Find Place

Application Month:

June 2023 ▾

EPA Registration Number:

▾ ×



Summary of draft mitigations

- Broadly applicable to most outdoor uses of conventional:
 - Insecticides
 - Insect growth regulators
 - Herbicides
 - Fungicides
 - Miticides
- Rodenticides excluded because they will be addressed with rodenticide strategy





Summary of draft mitigations

- Avoidance
 - Prohibit use in key areas inhabited by species
 - Provide exceptions if user gets input from Fish and Wildlife Service field office
- Minimization of spray drift
 - Different requirements based on application equipment and droplet sizes
 - Wind directional
 - Windbreak exception
 - Larger buffer distances proposed for the pilot terrestrial insect and plant species due to the susceptibility of these species to pesticides as a stressor

Summary of draft mitigations cont'd

- Minimization of runoff transport
 - Based on existing mitigations available to growers and pesticide applicators
 - Users would select 4 practices from mitigation menu
 - Runoff mitigations do not apply to 2 species, as this was not identified as a route of exposure
- Timing restrictions
 - EPA considered the life histories of the pilot species to determine if restrictions could be limited to specific periods of time to maximize species protection and minimize impact to the user
 - Only certain species have proposed timing restrictions



Runoff Mitigation Menu

- EPA recognizes efficacy information on additional practices may become available over time and is currently thinking about ways to expand the menu to include additional options as appropriate.

Table 4. Draft options for runoff/erosion measures for selected pesticide use site¹.

Runoff/Erosion Mitigation Practice	Use Site				
	1: Field Crops ²	2: Orchards	3: Specialty Crops ³	4: Non-Ag ⁴	5: Rice ⁵
Applications					
Avoid Using Pesticide of a Highly Toxic Hazard Class to invertebrates	✓	✓	✓	✓	✓
40% rate reduction ⁶	✓	✓	✓	✓	✓
In Field					
Contour Farming	✓	✓	✓	--	--
Cover Crop	✓	✓	✓	✓	--
In-field Vegetative Filter Strip ⁷	✓	✓	✓	✓	--
Mulching	✓	✓	✓	✓	
Residue and Tillage management	✓	--	✓	--	--
Terrace Farming	✓	✓	✓	--	--
Grassed Waterways	✓	✓	✓	✓	--
Field Characteristics					
Field with <2% slope	✓	✓	✓	--	✓
Adjacent to the Field or In-between field and Protection Area					
Vegetative Filter Strips ⁷	✓	✓	✓	✓	--
Riparian Area (>10m width from average high-water mark to use site)	✓	✓	✓	✓	--
Controlled Drainage					
Constructed wetlands or Water and Sediment Control Basins	✓	✓	✓	✓	✓

Proposed Exemptions to Mitigations

- Applications for purposes of conservation made under the purview of the Fish and Wildlife Service
- Residential Uses and Indoor Uses, mitigations are only for non-residential outdoor uses of conventional pesticides
- Rodenticides
- Exempt from runoff mitigations if the lands are managed with a site-specific runoff and/or erosion plan implemented according to the recommendations of a recognized conservation program



Evaluation of Mitigations

- Selected approximately 20 representative pesticides
- These pesticides were used to assess the effectiveness of proposed mitigations when compared to anticipated exposure reduction to toxicity values
- Considered efficacy information compiled in Technical Support Document for proposed reductions

Draft Implementation Plan - Bulletins

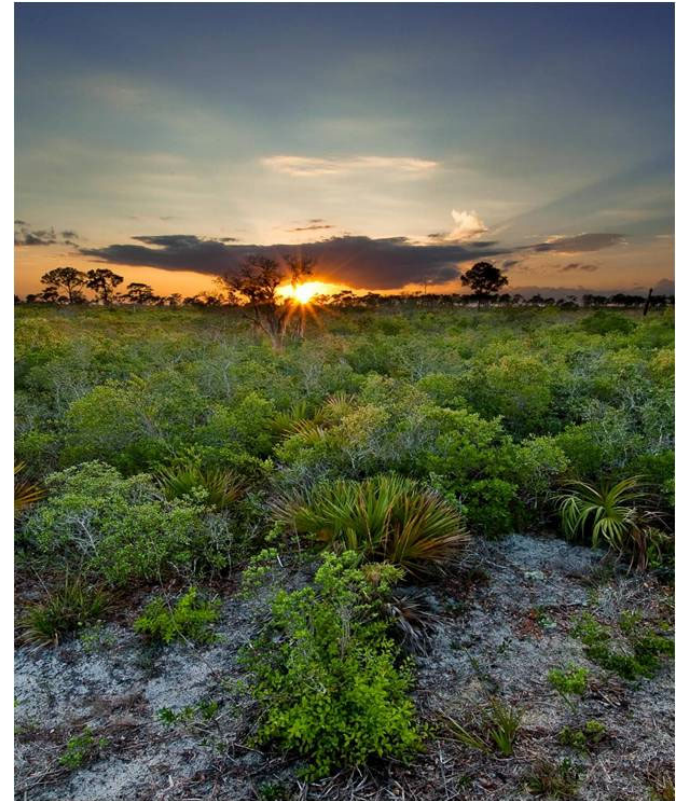
- Proposing a multi-pronged implementation plan to get Bulletins Live! Two reference language and link on product label
- Mitigations will be required once EPA has established the relevant Bulletins and the label has the BLT link.
- BLT language will be added through registration and registration review activities
- Release policy statement that allows adding BLT link voluntarily through non-notification
- Longer term: Evaluate whether further policy/rulemaking is needed

Draft for Public Comment



Draft Implementation Plan - Outreach

- StoryMaps and other materials will allow growers and applicators to determine whether they routinely apply pesticides near the pilot species
 - Available before full implementation BLT references on pesticide product labeling and creation of Bulletins
 - StoryMaps are intended for informational purposes only; not to be interpreted as regulatory
- Planning outreach and education efforts on use of the BLT on-line system, compliance with label directions, and Bulletins



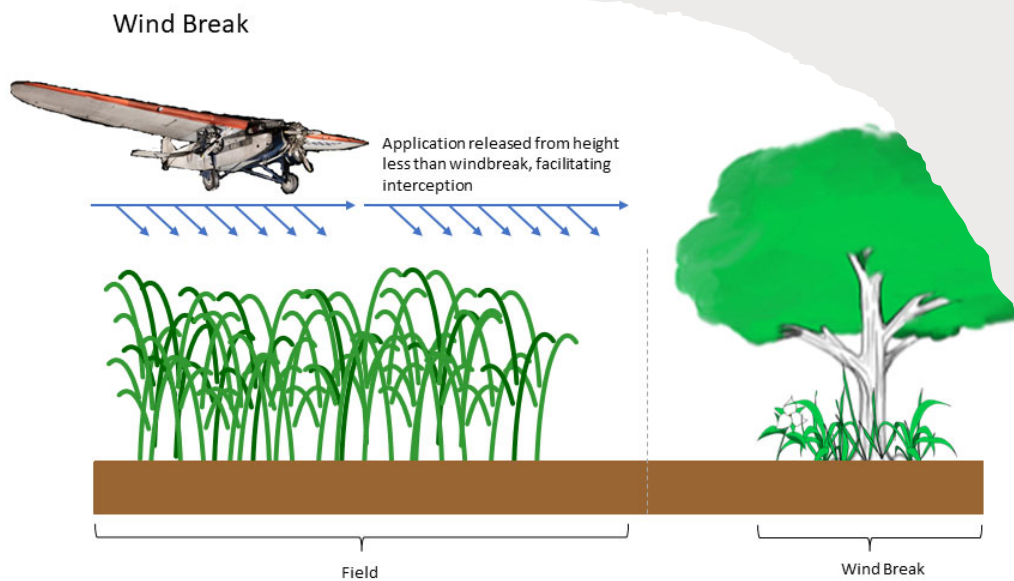


Possible expansion to other species

- Continue to focus on narrow ranging species
- Include species that we have identified as particularly vulnerable through various consultations and projects
- Mitigations evaluated for similar species can likely be applied to those additional species

Coordination across ESA efforts

- Continue to work with other ongoing ESA efforts
- To the extent possible, EPA expects to align runoff mitigation menu options with Herbicide Strategy, FIFRA Interim Ecological Mitigations, and any other future efforts using the mitigation menu





Outreach and Timeline

- June 22 released white paper and technical support doc for public comment
 - 45-day comment period (closes 8/6/23)
- USDA hosted public webinar
- Fall webinars and outreach / education with stakeholders on Bulletins Live! Two and Bulletins more generally
- Goal is to finalize mitigations for pilot species in December

Draft for Public Comment

Demonstration of StoryMaps



Collection

Vulnerable Species Project

Implementing EPA's Workplan to Protect Endangered and Threatened Species from Pesticides: Vulnerable Species Pilot Project

Office of Pesticide Programs

Get started



Draft for Public Comment



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

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JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

Memorandum

To: Board of Pesticides Control
From: Mary Tomlinson, Pesticides Registrar
Subject: Policy for Registration of permethrin repellent fabric, clothing and gear
Date: August 17, 2023

Background:

Until 2009, many alternate brand names (ABNs) of pesticides were seldom registered. An alternate brand name product has the same formulation as the primary EPA registered product it is based on. States register the marketplace product label, not the EPA master label because it is the marketplace label that must be followed by the user. One or more companies then sub register the same primary product, but each subregistered product label will have a different brand name and may have a different subset of claims, directions, and use sites.

There was inconsistency in the way ABNs were registered. No registration fee was charged for ABNs, which accounted for about 1000 plus products, although they were distributed in Maine. In 2009, the registration process was revised to require registration of all ABNs, those with different brand names, colors, scents, fragrances, pet weights, sites, and so on. This resulted in consistency and made it easier to detect unregistered products in the marketplace. One exception to this expanded approach to registration was repellent clothing and gear. It was not clear if the individual products were ABNs or were simply covered under the primary registration even though they were manufactured and distributed by other companies.

Applications for permethrin treated repellent fabrics were rare and initially only the fabric was registered. Later, separate applications were received to register fabric for apparel or for gear, followed by fabric for dog and horse products. This led to more inconsistency in registration of these products among companies and the ever expanding use of repellent fabric to produce a wide variety of products, including shirts, pants, hats, gaiters, animal products, tents, and so on. In addition, it is often not clear who the manufacturer is because these products are sold under different brand names.

An inquiry was recently received from a UK company regarding their EPA registered, permethrin treated fabric. They are the primary registrant but will have a brand supplemental agreement with one or more companies in the US to produce the articles. Items include a variety of child and adult clothing, gear and more. Below is an excerpt of the EPA master label, Sublabel A, which lists the products that may be produced.

MEGAN PATTERNSON, DIRECTOR
90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-2731
WWW.THINKFIRSTSPRAYLAST.ORG

(Sublabel A: Permethrin-Treated Fabric uses for Garments and Gear)

VITAL PROTECTION TA

(Alternate Brand Names: _____)

ACTIVE INGREDIENT: Permethrin:.....0.52%
OTHER INGREDIENTS:.....99.48%
TOTAL:.....100.00%

[] Denotes Alternate Text. () Denotes Informational Text.

(Note to Reviewer: the following garments may be made from Vital Protection TA fabric: men's and women's shirts, pants, shorts, cargo shorts, hats, bonnies, bonnie hats, bush hats, jackets, pullovers, scarves, bandanas, socks, shoe coverings, and vests. Their names may be used in place of the word "garment" in the text of the marketplace label. The following gear articles may be made from Vital Protection TA fabric: tents, tent mesh, tent netting, tent liner, umbrella, bivouac sack, bivy sack, bivy bag, bivi bag, bivi, sleeping bag covers, backpacks, tarps, drapes/curtains, table cloths, placemats, picnic blankets, tent ground cloths, outdoor furniture covers, outdoor furniture cushion covers, camping chairs, patio umbrella covers, hats, bonnies, bonnie hat, bush hats. Their names may be used in place of the word "gear" in the text of the marketplace label.)

- The fabric in this [garment/gear] has been treated with the active ingredient Permethrin.
- Permethrin repels mosquitoes, ants, ticks, chiggers, flies, and midges.
- Permethrin in this [garment/gear] is bound to the fabric and remains effective for [70] [50] [25] washings [for washable garments/gear]
- For protection of exposed skin, use in conjunction with an insect repellent registered for direct application to skin.

Policy for registration of permethrin treated repellent products:

Staff seeks the Board's guidance in developing a policy for registering permethrin treated repellent products. Two options are:

- 1) To be consistent with current registration procedure, products made from the registered fabric would be considered as ABNs requiring registration by the manufacturer of the products.
- 2) Fabrics would be an exception to current registration procedure whereby only the fabric will be registered.

BOARD OF PESTICIDES CONTROL - SUMMARY
014-01A-0287-01 CASH REPORT
ACTUAL FY2023; PROJECTIONS FOR FY2024, FY2025 AND FY2026
AS OF: AUGUST 8, 2023

	ACTUAL FY2023	ESTIMATED FY2024	ESTIMATED FY2025	ESTIMATED FY2026	
BALANCE FORWARD		1,754,990.62	1,824,215.84	1,810,460.20	
Revenues:					
1407 REG INSECT & FUNGICIDES	1,726,880.00	2,286,525.00	2,286,525.00	2,286,525.00	based on 10,635 licenses
1448 SPECIAL LICENSES & LEASES	152,190.03	155,000.00	155,000.00	155,000.00	Staying flat for
2690 RECOVERED COST	100.00				
2953 ADJ OF ALL OTHER BALANCE FWD	185.12				
2968 REG TRANSFER UNALLOCATED	(25,000.00)	(25,000.00)	(25,000.00)	(25,000.00)	CDC MOU
2978 DICAP TRANSFER	(245,212.32)	(267,838.37)	(278,219.89)	(285,564.45)	
2979 TRANSFER FOR INDIRECT COST	-				
2981 LEGIS TRANSFER OF REVENUE	(200,000.00)	(200,000.00)	(200,000.00)	(200,000.00)	
TOTAL REVENUES	1,409,142.83	1,948,686.63	1,938,305.11	1,930,960.55	
Expenditures:					
31-39 TOTAL SALARY & FRINGE	1,342,977.85	1,263,449.24	1,317,719.36	1,356,780.37	
40 PROF. SERVICES, NOT BY STATE	68,452.37	23,014.00	8,000.00	8,000.00	
42 TRAVEL EXPENSES, IN STATE	1,107.07	1,500.00	1,500.00	1,500.00	
43 TRAVEL EXPENSES, OUT OF STATE	5,200.23	7,500.00	8,500.00	9,500.00	
46 RENTS	14,272.53	16,500.00	17,325.00	18,191.25	
48 INSURANCE	3,811.61	4,200.00	4,410.00	4,630.50	
49 GENERAL OPERATIONS	48,069.39	82,772.88	82,877.88	83,125.63	
50 EMPLOYEE TRAINING	131.34	500.00	500.00	500.00	
51 COMMODITIES - FOOD	133.75	450.00	450.00	450.00	
53 TECHNOLOGY	136,281.92	378,003.00	405,432.00	412,596.00	
55 EQUIPMENT AND TECHNOLOGY	3,847.67	4,200.00	4,410.00	4,630.50	
56 OFFICE & OTHER SUPPLIES	3,799.13	3,500.00	3,675.00	3,858.75	
64 GRANTS TO PUB AND PRIV ORGNS	6,432.00	6,432.00	6,432.00	6,432.00	
82 ADMINISTRATIVE CHARGES AND FEE	-				
85 TRANSFERS	101,999.67	87,440.30	90,829.52	93,227.27	
90 CHARGES TO ASSETS AND LIAB.	14.82				
TOTAL EXPENDITURES	1,736,531.35	1,879,461.41	1,952,060.75	2,003,422.27	
CURRENT CASH BALANCE	1,754,990.62	1,824,215.84	1,810,460.20	1,737,998.48	
STA-CAP		0.04897	0.04897	0.04897	

Added 3 positions to BPC Funding, and moved 5 Plant Health positions to General Fund.
 STA-CAP rate based on FY2024 Actual Rate.

Maine Department of Agriculture, Conservation & Forestry

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Maine Offers Free Collection of Unwanted Pesticides to Protect Natural Resources

August 3, 2023

For more information contact: Jim Britt at: Jim.Britt@maine.gov
(<mailto:Jim.Britt@maine.gov>)

Augusta, MAINE - Maine residents can participate in the Obsolete Pesticide Collection Program, a joint initiative by the Maine Department of Agriculture, Conservation and Forestry's Board of Pesticides Control (BPC) and the Maine Department of Environmental Protection. The program aims to safeguard Maine's natural resources and prevent agricultural pollution by promoting the safe and proper disposal of outdated, unused, or unwanted pesticides.

Homeowners and family-owned farms are encouraged to take advantage of this opportunity by bringing their unwanted pesticides, including herbicides, insecticides, rodenticides, fungicides, disinfectants, and similar products used in agricultural production or around the home, to collection sites in Presque Isle, Bangor, Augusta, and Portland.

Key Information

- The next obsolete pesticide collection days will be held during October 2023, with one-day events in Presque Isle, Bangor, Augusta, and Portland.
- Pre-registration is required by September 29 to participate; drop-ins are not permitted.
- The program only accepts pesticides and spray adjuvants.
- Registration instructions and forms can be found on the program webpage: [thinkfirstspraylast.org](http://www.thinkfirstspraylast.org) ([//www.thinkfirstspraylast.org](http://www.thinkfirstspraylast.org)).
- Each registration must be from the person currently possessing the pesticides, and materials collected on behalf of others will not be accepted.

More details, including drop-off locations and the obsolete pesticides inventory form, will be provided soon on the BPC website at [thinkfirstspraylast.org](http://www.thinkfirstspraylast.org) ([//www.thinkfirstspraylast.org](http://www.thinkfirstspraylast.org)).

About Maine's Obsolete Pesticide Collection Program

Removing obsolete and unwanted pesticides is essential for protecting public health, wildlife, and the environment. Improper handling and disposal of pesticides can contaminate land and water resources. The Maine Obsolete Pesticide Collection Program ensures these hazardous materials are handled and disposed of safely. Since its inception in 1982, the program has successfully diverted over 250,000 lbs. of pesticides from entering the waste stream. Collected pesticides are transported to licensed, out-of-state disposal facilities through a hazardous waste disposal contractor.

Disposing of Pesticides Safely

Always follow the label instructions for the proper use, storage, and disposal of any pesticides you use. For more information about safe pesticide disposal, visit the [EPA website \(//www.epa.gov/safepestcontrol/safe-disposal-pesticides\)](https://www.epa.gov/safepestcontrol/safe-disposal-pesticides).

Supporting documents

Photo courtesy: [Maine Board of Pesticides Control \(https://www.maine.gov/tools/whatsnew/attach.php?id=11515697&an=1\)](https://www.maine.gov/tools/whatsnew/attach.php?id=11515697&an=1)



[_ \(https://www.maine.gov/tools/whatsnew/attach.php?id=11515697&an=1\)](https://www.maine.gov/tools/whatsnew/attach.php?id=11515697&an=1)

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ADJUVANT REGISTRATIONS SUBMITTED

Product ID	ProductType	Product Name	EPA #	State Registration #	Registration Status	Registration Year	Registrant Name
P-121325	Adjuvant	BIOGUARD BALANCE COMPLETE PH AND ALKALINITY BUFFERING COMPOUND (5185-ADJ-1)		2023000745	Active		2023 BIOLAB, INC
P-135308	Adjuvant	SpaGuard Oxidizer Rapid-Dissolve Shock Oxidizing Tabs		TBD	Pending		2023 BIOLAB, INC
P-139273	Adjuvant	SpaGuard Balancer Rapid-Dissolve Alkalinity Increaser Tabs		TBD	Pending		2023 BIOLAB, INC
P-139274	Adjuvant	SpaGuard Balancer Rapid-Dissolve pH Decreaser Tabs		TBD	Pending		2023 BIOLAB, INC
P-121269	Adjuvant	APSA-80 ALL PURPOSE SPRAY ADJUVANT CONCENTRATE		TBD	Pending		2023 ACCESS BUSINESS GROUP INTERNATIONAL, LLC
P-112293	Adjuvant	ATTITUDE WATER CONDITIONING AGENT AND ACIDIFIER (72662-ADJ-1)		2023000573	Active		2023 ORO AGRI, INC.
P-112294	Adjuvant	OROBOOST PENETRANT-SPREADER-WETTING AGENT FOR USE WITH ORGANIC PESTICIDES (72662-ADJ-2)		2023000574	Active		2023 ORO AGRI, INC.
P-112295	Adjuvant	ORO-HSMOC HIGH SURFACTANT METHYLATED OIL CONCENTRATE (72662-ADJ-3)		2023000575	Active		2023 ORO AGRI, INC.
P-112296	Adjuvant	ORO-RZ ROOT ZONE (72662-ADJ-4)		2023000576	Active		2023 ORO AGRI, INC.
P-112297	Adjuvant	WETCIT PENETRANT-SPREADER-WETTING AGENT (72662-ADJ-5)		2023000577	Active		2023 ORO AGRI, INC.
P-115333	Adjuvant	GLB STABILIZER (7364-ADJ-1)		2023000486	Active		2023 GLB POOL & SPA
P-115334	Adjuvant	GLB ALKALINITY UP (7364-ADJ-2)		2023000487	Active		2023 GLB POOL & SPA
P-115335	Adjuvant	GLB PH UP (7364-ADJ-3)		2023000488	Active		2023 GLB POOL & SPA
P-115336	Adjuvant	GLB PH DOWN (7364-ADJ-4)		2023000489	Active		2023 GLB POOL & SPA
P-115337	Adjuvant	GLB OXY-BRITE (7364-ADJ-5)		2023000490	Active		2023 GLB POOL & SPA
P-115338	Adjuvant	SIRONA SPA CARE ALKALINITY UP (7364-ADJ-6)		2023000491	Active		2023 GLB POOL & SPA
P-115339	Adjuvant	SIRONA SPA CARE SODIUM BROMIDE (7364-ADJ-7)		2023000492	Active		2023 GLB POOL & SPA
P-115340	Adjuvant	SIRONA SPA CARE ACTIVATE GRANULAR (7364-ADJ-8)		2023000493	Active		2023 GLB POOL & SPA
P-115341	Adjuvant	SIRONA SPA CARE SPA DOWN (7364-ADJ-9)		2023000494	Active		2023 GLB POOL & SPA
P-115342	Adjuvant	SIRONA SPA CARE SPA UP (7364-ADJ-10)		2023000495	Active		2023 GLB POOL & SPA
P-115343	Adjuvant	SIRONA SPA CARE PH BALANCE + (7364-ADJ-11)		2023000496	Active		2023 GLB POOL & SPA
P-110271	Adjuvant	CLOROX PRO CLOROX POOL & SPA ALKALINITY BOOSTER (90106-ADJ-3)		2023000201	Active		2023 EASY 123 POOL CARE, LLC
P-110272	Adjuvant	CLOROX PRO CLOROX POOL & SPA PH UP (90106-ADJ-1)		2023000199	Active		2023 EASY 123 POOL CARE, LLC
P-110273	Adjuvant	CLOROX PRO CLOROX POOL & SPA PH DOWN (90106-ADJ-2)		2023000200	Active		2023 EASY 123 POOL CARE, LLC
P-118268	Adjuvant	CLOROX POOL & SPA 2-IN-1 PERFECT BALANCE (90106-ADJ-5)		2023000601	Active		2023 EASY 123 POOL CARE, LLC
P-118269	Adjuvant	CLOROX SPA ALKALINITY INCREASER (90106-ADJ-4)		2023000598	Active		2023 EASY 123 POOL CARE, LLC
P-131270	Adjuvant	CLOROX SPA RAPID REFRESH SPA PODS ISLAND BREEZE SCENT (90106-ADJ-6)		2023000875	Active		2023 EASY 123 POOL CARE, LLC
P-112301	Adjuvant	HDI TRANS-OXIDE YELLOW 42A208 (74922-ADJ-1)		2023000367	Active		2023 DYSTAR LP
P-118270	Adjuvant	SPA ST TIME ALKALINITY INCREASER (67262-ADJ-1)		2023000599	Active		2023 RECREATIONAL WATER PRODUCTS, INC
P-115344	Adjuvant	SHOCKTRINE SHOCK OXIDIZER (8959-ADJ-1)		2023000497	Active		2023 APPLIED BIOCHEMISTS
P-115345	Adjuvant	Leisure Time SPA UP		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115346	Adjuvant	Leisure Time SPA DOWN		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115347	Adjuvant	Leisure Time SODIUM BROMIDE		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115348	Adjuvant	Leisure Time pH Balance Plus		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115349	Adjuvant	Leisure Time LIQUID SPA DOWN		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115350	Adjuvant	Leisure Time pH Balance		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115351	Adjuvant	Leisure Time RENEW		TBD	Pending		2023 LEISURE TIME CHEMICAL CORP.
P-115356	Adjuvant	LEISURE TIME SPA UP (41760-ADJ-1)		2023000498	Active		2023 LEISURE TIME CHEMICAL CORP.
P-115357	Adjuvant	LEISURE TIME SPA DOWN (41760-ADJ-2)		2023000499	Active		2023 LEISURE TIME CHEMICAL CORP.
P-115358	Adjuvant	LEISURE TIME SODIUM BROMIDE (41760-ADJ-3)		2023000500	Active		2023 LEISURE TIME CHEMICAL CORP.
P-115359	Adjuvant	LEISURE TIME PH BALANCE PLUS (41760-ADJ-4)		2023000501	Active		2023 LEISURE TIME CHEMICAL CORP.
P-115360	Adjuvant	LEISURE TIME PH BALANCE (41760-ADJ-5)		2023000502	Active		2023 LEISURE TIME CHEMICAL CORP.
P-115361	Adjuvant	LEISURE TIME RENEW (41760-ADJ-6)		2023000503	Active		2023 LEISURE TIME CHEMICAL CORP.
P-112302	Adjuvant	NALCO 60625		TBD	Pending		2023 NALCO COMPANY LLC
P-112303	Adjuvant	NALCO STA-PUT PLUS		TBD	Pending		2023 NALCO COMPANY LLC
P-113332	Adjuvant	DREXEL SURF-AC 820 WETTING AGENT / SPREADER / PENETRANT (19713-ADJ-1)		2023000398	Active		2023 DREXEL CHEMICAL COMPANY
P-113333	Adjuvant	DREXEL FOME-KIL (19713-ADJ-2)		2023000399	Active		2023 DREXEL CHEMICAL COMPANY
P-113341	Adjuvant	DREXEL AMS-ALL WATER CONDITIONING AGENT / SURFACTANT / DRIFT REDUCTION AGENT / DEFOAMING AGENT (19713-ADJ-3)		2023000455	Active		2023 DREXEL CHEMICAL COMPANY
P-122312	Adjuvant	DREXEL AMS-SUPREME AMS / DEFOAMER / DEPOSITION AID (19713-ADJ-5)		2023000836	Active		2023 DREXEL CHEMICAL COMPANY
P-122313	Adjuvant	DREXEL AMS XTRA (19713-ADJ-6)		2023000837	Active		2023 DREXEL CHEMICAL COMPANY
P-122314	Adjuvant	DREXEL F.M.-160 FOAM-MARKER CONCENTRATE (19713-ADJ-4)		2023000746	Active		2023 DREXEL CHEMICAL COMPANY

P-122315	Adjuvant	DREXEL HAF-PYNT NON-IONIC SURFACTANT AND ANTI-FOAMING AGENT (19713-ADJ-7)	2023000838	Active	2023 DREXEL CHEMICAL COMPANY
P-122316	Adjuvant	DREXEL HUM-AC 820 HUMECTANT / SURFACTANT (19713-ADJ-8)	2023000839	Active	2023 DREXEL CHEMICAL COMPANY
P-122317	Adjuvant	DREXEL LOX DEPOSITION-COVERAGE AND DRIFT RETARDANT (19713-ADJ-9)	2023000840	Active	2023 DREXEL CHEMICAL COMPANY
P-122318	Adjuvant	DREXEL MES-100 MODIFIED VEGETABLE OIL CONCENTRATE (19713-ADJ-5)	2023000762	Active	2023 DREXEL CHEMICAL COMPANY
P-122319	Adjuvant	DREXEL MIX (19713-ADJ-10)	2023000841	Active	2023 DREXEL CHEMICAL COMPANY
P-122320	Adjuvant	DREXEL PAS-800 PENETRANT – ACIDIFIER – SURFACTANT (19713-ADJ-10)	2023000842	Active	2023 DREXEL CHEMICAL COMPANY
P-124292	Adjuvant	DREXEL PINENE II EXTENDER AND STICKER	2023000863	Active	2023 DREXEL CHEMICAL COMPANY
P-124293	Adjuvant	DREXEL PEPTOIL CROP OIL CONCENTRATE (19713-ADJ-11)	2023000843	Active	2023 DREXEL CHEMICAL COMPANY
P-124294	Adjuvant	DREXEL SURF-AC 910 WETTING AGENT / SPREADER / PENETRANT	2023000861	Active	2023 DREXEL CHEMICAL COMPANY
P-124295	Adjuvant	DREXEL USURP WATER CONDITIONER / SEQUESTERING AGENT	2023000862	Active	2023 DREXEL CHEMICAL COMPANY
P-132309	Adjuvant	LOVELAND PRODUCTS WEATHER GARD COMPLETE (34704-ADJ-6)	2023000859	Active	2023 LOVELAND PRODUCTS, INC
P-132310	Adjuvant	CHOICE WEATHER MASTER WATER CONDITIONING AGENT (34704-ADJ-7)	2023000860	Active	2023 LOVELAND PRODUCTS, INC
P-133269	Adjuvant	MSO CONCENTRATE METHOLATED SEED OIL (34704-ADJ-2)	2023000807	Active	2023 LOVELAND PRODUCTS, INC
P-133270	Adjuvant	SCANNER NON-IONIC SURFACTANT ANTIFOAMING AGENT (34704-ADJ-1)	2023000748	Active	2023 LOVELAND PRODUCTS, INC
P-133284	Adjuvant	LOVELAND PRODUCTS LI 700 WITH LECITECH (37407-ADJ-3) (STATE RESTRICTED-AQUATIC HERBICDE USE)	2023000831	Active	2023 LOVELAND PRODUCTS, INC
P-133285	Adjuvant	WIDESPREAD MAX (37407-ADJ-4)	2023000823	Active	2023 LOVELAND PRODUCTS, INC
P-134287	Adjuvant	LI 700 With Lecitech	TBD	Pending	2023 LOVELAND PRODUCTS, INC
P-135293	Adjuvant	LOVELAND PRODUCTS MSO CONCENTRATE WITH LECI-TECH (34704-ADJ-5)	2023000830	Active	2023 LOVELAND PRODUCTS, INC
P-135307	Adjuvant	Loveland Products, Inc, Tactic	TBD	Pending	2023 LOVELAND PRODUCTS, INC
P-138273	Adjuvant	Unfoamer	TBD	Pending	2023 LOVELAND PRODUCTS, INC
P-106324	Adjuvant	BRANDT SUPER WETTER (48813-ADJ-1)	2023000121	Active	2023 BRANDT CONSOLIDATED, INC.
P-106325	Adjuvant	BRANDT INDICATE 5 (48813-ADJ-2)	2023000122	Active	2023 BRANDT CONSOLIDATED, INC.
P-110295	Adjuvant	HARRELL'S SPRAYMAX ACTIVATOR + SA (52287-ADJ-1)	2023000294	Active	2023 HARRELL'S LLC
P-110296	Adjuvant	HARRELL'S SPRAYMAX CROP OIL CONCENTRATE (52287-ADJ-2)	2023000295	Active	2023 HARRELL'S LLC
P-110297	Adjuvant	HARRELL'S SPRAYMAX DEFOAMER 2.0 (52287-ADJ-3)	2023000296	Active	2023 HARRELL'S LLC
P-110298	Adjuvant	HARRELL'S SPRAYMAX METHYLATED SEED OIL (52287-ADJ-4)	2023000297	Active	2023 HARRELL'S LLC
P-110299	Adjuvant	HARRELL'S SPRAYMAX NONIONIC PENETRANT PLUS (52287-ADJ-5)	2023000298	Active	2023 HARRELL'S LLC
P-114270	Adjuvant	HARRELL'S HYDROMAX HYDRO-INJECT (52287-ADJ-6)	2023000317	Active	2023 HARRELL'S LLC
P-114271	Adjuvant	HARRELL'S HYDROMAX SYMPHONY MOISTURE MANAGEMENT (52287-ADJ-7)	2023000318	Active	2023 HARRELL'S LLC
P-114272	Adjuvant	HARRELL'S HYDROMAX HYDRO-CURE (52287-ADJ-8)	2023000319	Active	2023 HARRELL'S LLC
P-114273	Adjuvant	HARRELL'S HYDROMAX HYDRO-90 (52287-ADJ-9)	2023000320	Active	2023 HARRELL'S LLC
P-114274	Adjuvant	HARRELL'S HYDROMAX FLEET 100 (52287-ADJ-10)	2023000321	Active	2023 HARRELL'S LLC
P-114275	Adjuvant	HARRELL'S SPRAYMAX PH BUFFER (52287-ADJ-11)	2023000322	Active	2023 HARRELL'S LLC
P-121326	Adjuvant	PristinePower	TBD	Pending	2023 EARTH SCIENCE LABORATORIES, INC.
P-113325	Adjuvant	Liquid Harvest Non Ionic Surfactant		Inactive	2023 SANCO INDUSTRIES, INC
P-113326	Adjuvant	Plex Mate Surfactant		Inactive	2023 SANCO INDUSTRIES, INC
P-133342	Adjuvant	Liquid Harvest Methylated Seed Oil Surfactant	TBD	Pending	2023 SANCO INDUSTRIES, INC
P-113308	Adjuvant	Perafoam	TBD	Pending	2023 BEST SANITIZERS, INC.
P-113309	Adjuvant	PERAFOAM FOAM ADDITIVE (73232-ADJ-1)	2023000651	Active	2023 BEST SANITIZERS, INC.
P-103324	Adjuvant	UPTAKE PRO (81820-ADJ-1)	2023000230	Active	2023 PACE 49, INC.
P-114283	Adjuvant	AQUA BALANCE CHLORINE FREE OXIDIZER (1677-ADJ-4)	2023000553	Active	2023 ECOLAB, INC.
P-114284	Adjuvant	AQUA BALANCE DECHLOR REDUCING AGENT (1677-ADJ-5)	2023000554	Active	2023 ECOLAB, INC.
P-114285	Adjuvant	Aqua Balance Muriatic Acid	TBD	Pending	2023 ECOLAB, INC.
P-114286	Adjuvant	AQUA BALANCE PH PLUS (1677-ADJ-6)	2023000555	Active	2023 ECOLAB, INC.
P-114287	Adjuvant	AQUA BALANCE POOL CONDITIONER (1677-ADJ-9)	2023000653	Active	2023 ECOLAB, INC.
P-114288	Adjuvant	AQUA BALANCE SPF-3050 (1677-ADJ-8)	2023000652	Active	2023 ECOLAB, INC.
P-114289	Adjuvant	AQUA BALANCE TOTAL ALKALINITY (1677-ADJ-7)	2023000580	Active	2023 ECOLAB, INC.
P-114290	Adjuvant	BOOST 3201 (ADJUVANT FOR BOOST 3200) (1677-ADJ-1)	2023000527	Active	2023 ECOLAB, INC.
P-114291	Adjuvant	BOOST 3201 SM (ACTIVATOR FOR BOOST 3200 AND BOOST 3200 CIP) (1677-ADJ-2)	2023000445	Active	2023 ECOLAB, INC.
P-114292	Adjuvant	LIQUID K FOAMING AGENT (1677-ADJ-3)	2023000526	Active	2023 ECOLAB, INC.
P-128270	Adjuvant	Exspor Activator Concentrate	TBD	Pending	2023 ECOLAB, INC.
P-113328	Adjuvant	ALIGN 100:1 FOAM CONCENTRATE (5905-ADJ-5)	2023000423	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-113329	Adjuvant	FIRE-ZONE MODIFIED METHYLATED SEED OIL DEPOSITION SPRAY ADJUVANT (5905-ADJ-1)	2023000424	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-113330	Adjuvant	KINETIC NONIONIC WETTER/SPREADER/PENETRANT ADJUVANT (5905-ADJ-2)	2023000425	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115273	Adjuvant	AD-SPRAY 80 NONIONIC SURFACTANT (5905-ADJ-6)	2023000426	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY

P-115274	Adjuvant	AGRI-DEX CROP OIL CONCENTRATE (5905-ADJ-7)	2023000427	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115275	Adjuvant	BLENDEX VHC CONCENTRATED COMPATIBILITY AND STABILIZING AGENT FOR LIQUID FERTILIZERS AND PESTICIDES (5905-ADJ-8)	2023000428	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115276	Adjuvant	CLASP DRIFT RETARDANT AND DEPOSITION AID (5905-ADJ-9)	2023000429	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115277	Adjuvant	COHERE NONIONIC SPREADER-STICKER ADJUVANT FOR PESTICIDE SPRAYS (5905-ADJ-3)	2023000430	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115278	Adjuvant	CONTINGENT ESTERIFIED SEED OIL, PETROLEUM OIL AND SURFACTANT (5905-ADJ-10)	2023000431	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115279	Adjuvant	DYNE-AMIC MODIFIED VEGETABLE OIL SURFACTANT BLEND (5905-ADJ-11)	2023000432	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115280	Adjuvant	FOAMBUSTER FOAMBUSTER 10 AN ANTIFOAMING AND DEFOAMING AGENT FOR USE IN AQUEOUS SOLUTIONS (5905-ADJ-12)	2023000433	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115281	Adjuvant	GROUNDDED SPRAY APPLICATION DEPOSITION AID WITH DRIFT REDUCTION TECHNOLOGY (5905-ADJ-13)	2023000434	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115282	Adjuvant	HEL-FIRE HERBICIDE ACTIVATOR (5905-ADJ-14)	2023000435	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115283	Adjuvant	INDUCE NONIONIC LOW FOAM WETTER/SPREADER ADJUVANT (5905-ADJ-4)	2023000436	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115284	Adjuvant	QUEST WATER CONDITIONING AGENT AND AMMONIUM SULFATE REPLACEMENT (5905-ADJ-15)	2023000437	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115285	Adjuvant	RE-QUEST WATER CONDITIONING AGENT AND AMMONIUM SULFATE REPLACEMENT (5905-ADJ-16)	2023000438	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115286	Adjuvant	SILWET L-77 ORGANOSILICONE SPREADER, PENETRANT (5905-ADJ-17)	2023000439	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-115287	Adjuvant	ZANDAR PENETRANT, ACIDIFIER, SURFACTANT (5905-ADJ-18)	2023000440	Active	2023 HELENA AGRI-ENTERPRISES LLC D/B/A HELENA CHEMICAL COMPANY
P-139275	Adjuvant	Foam Fighter	TBD	Pending	2023 MILLER CHEMICAL & FERTILIZER LLC
P-139276	Adjuvant	Foam Fighter Turbo	TBD	Pending	2023 MILLER CHEMICAL & FERTILIZER LLC
P-139277	Adjuvant	Nu-Film 17	TBD	Pending	2023 MILLER CHEMICAL & FERTILIZER LLC
P-139278	Adjuvant	Nu-Film P	TBD	Pending	2023 MILLER CHEMICAL & FERTILIZER LLC
P-114321	Adjuvant	FRESHWATER MPS CHLORINE FREE OXIDIZER	2023000752	Active	2023 WATKINS MANUFACTURING CORPORATION DBA WATKINS WELLNESS
P-114322	Adjuvant	FRESHWATER PH/ALKALINITY DOWN	2023000751	Active	2023 WATKINS MANUFACTURING CORPORATION DBA WATKINS WELLNESS
P-114323	Adjuvant	FRESHWATER PH/ALKALINITY UP	2023000753	Active	2023 WATKINS MANUFACTURING CORPORATION DBA WATKINS WELLNESS
P-115311	Adjuvant	HTH SPA ALKALINITY UP (1258-ADJ-1)	2023000464	Active	2023 INNOVATIVE WATER CARE, LLC
P-115312	Adjuvant	POOLIFE EXCLUSIVE POOL CARE COLLECTION ALKALINITY PLUS (1258-ADJ-2)	2023000465	Active	2023 INNOVATIVE WATER CARE, LLC
P-115313	Adjuvant	POOLIFE EXCLUSIVE POOL CARE COLLECTION NON-CHLORINE OXIDIZER (1258-ADJ-3)	2023000466	Active	2023 INNOVATIVE WATER CARE, LLC
P-115314	Adjuvant	HTH POOL CARE PH DOWN (1258-ADJ-22)	2023000485	Active	2023 INNOVATIVE WATER CARE, LLC
P-115315	Adjuvant	POOLIFE EXCLUSIVE POOL CARE COLLECTION PH PLUS (1258-ADJ-4)	2023000467	Active	2023 INNOVATIVE WATER CARE, LLC
P-115316	Adjuvant	POOL BREEZE POOL CARE SYSTEM STABILIZER AND CONDITIONER (1258-ADJ-5)	2023000468	Active	2023 INNOVATIVE WATER CARE, LLC
P-115317	Adjuvant	PULSAR SUNSCREEN 20 STABILIZER GRANULAR (1258-ADJ-6)	2023000469	Active	2023 INNOVATIVE WATER CARE, LLC
P-115318	Adjuvant	HTH POOL CARE ALKALINITY UP (1258-ADJ-7)	2023000470	Active	2023 INNOVATIVE WATER CARE, LLC
P-115319	Adjuvant	CHLORINE-FREE BAQUACIL TOTAL ALKALINITY INCREASER (1258-ADJ-8)	2023000471	Active	2023 INNOVATIVE WATER CARE, LLC
P-115320	Adjuvant	CHLORINE-FREE BAQUACIL PH INCREASER (1258-ADJ-9)	2023000472	Active	2023 INNOVATIVE WATER CARE, LLC
P-115321	Adjuvant	HTH POOL CARE CHLORINE STABILIZER (1258-ADJ-10)	2023000473	Active	2023 INNOVATIVE WATER CARE, LLC
P-115322	Adjuvant	HTH SPA PH UP (1258-ADJ-11)	2023000474	Active	2023 INNOVATIVE WATER CARE, LLC
P-115323	Adjuvant	POOLIFE EXCLUSIVE POOL CARE COLLECTION STABILIZER & CONDITIONER (1258-ADJ-12)	2023000475	Active	2023 INNOVATIVE WATER CARE, LLC
P-115324	Adjuvant	POOL BREEZE POOL CARE SYSTEM PH DECREASER (1258-ADJ-13)	2023000476	Active	2023 INNOVATIVE WATER CARE, LLC
P-115325	Adjuvant	HTH POOL CARE PH UP (1258-ADJ-14)	2023000477	Active	2023 INNOVATIVE WATER CARE, LLC
P-115326	Adjuvant	HTH SPA NON-CHLORINE SHOCK OXIDIZER (1258-ADJ-15)	2023000478	Active	2023 INNOVATIVE WATER CARE, LLC
P-115327	Adjuvant	HTH SPA PH DOWN (1258-ADJ-16)	2023000479	Active	2023 INNOVATIVE WATER CARE, LLC
P-115328	Adjuvant	POOL BREEZE POOL CARE SYSTEM OPTISHOCK (1258-ADJ-17)	2023000480	Active	2023 INNOVATIVE WATER CARE, LLC
P-115329	Adjuvant	POOL BREEZE POOL CARE SYSTEM TOTAL ALKALINITY INCREASER (1258-ADJ-18)	2023000481	Active	2023 INNOVATIVE WATER CARE, LLC
P-115330	Adjuvant	CHLORINE-FREE BAQUACIL PH DECREASER (1258-ADJ-19)	2023000482	Active	2023 INNOVATIVE WATER CARE, LLC
P-115331	Adjuvant	POOLIFE EXCLUSIVE POOL CARE COLLECTION PH MINUS (1258-ADJ-20)	2023000483	Active	2023 INNOVATIVE WATER CARE, LLC
P-115332	Adjuvant	POOL BREEZE POOL CARE SYSTEM PH INCREASER (1258-ADJ-21)	2023000484	Active	2023 INNOVATIVE WATER CARE, LLC
P-115362	Adjuvant	PULSAR PH DOWN (+4) (1258-ADJ-23)	2023000504	Active	2023 INNOVATIVE WATER CARE, LLC
P-125273	Adjuvant	Pentra-Bark Bark Penetrating Surfactant	TBD	Pending	2023 QUEST PRODUCTS LLC
P-112306	Adjuvant	80/20 Select	TBD	Pending	2023 PRIME SOURCE, A DIVISION OF ALBAUGH LLC
P-112307	Adjuvant	Duo Stick Select	TBD	Pending	2023 PRIME SOURCE, A DIVISION OF ALBAUGH LLC
P-112308	Adjuvant	M50 Select	TBD	Pending	2023 PRIME SOURCE, A DIVISION OF ALBAUGH LLC
P-112309	Adjuvant	PS 804 Select	TBD	Pending	2023 PRIME SOURCE, A DIVISION OF ALBAUGH LLC
P-122279	Adjuvant	Grip Stick	TBD	Pending	2023 IKE'S LLC
P-112358	Adjuvant	STERILEX ULTRA ACTIVATOR SOLUTION (63761-ADJ-1)	2023000585	Active	2023 STERILEX LLC DBA STERILEX
P-112359	Adjuvant	ULTRA SOFT METAL ACTIVATOR (63761-ADJ-2)	2023000586	Active	2023 STERILEX LLC DBA STERILEX
P-112360	Adjuvant	STERILEX ULTRA-KLEEN SOLUTION 2	TBD	Pending	2023 STERILEX LLC DBA STERILEX
P-127273	Adjuvant	Fortisolve 200 (63761-ADJ-3)	TBD	Pending	2023 STERILEX LLC DBA STERILEX
P-127274	Adjuvant	ViveSecure 200 (63761-ADJ-4)	TBD	Pending	2023 STERILEX LLC DBA STERILEX

P-127275	Adjuvant	ViveSecure 200 SM (63761-ADJ-5)	TBD	Pending	2023 STERILEX LLC DBA STERILEX
P-112270	Adjuvant	D7 PART 3 (89833-ADJ-1)	2023000299	Active	2023 DECON7 SYSTEMS, INC
P-117283	Adjuvant	STIK-KOTE (97839-ADJ-1)	2023000522	Active	2023 3D BIOSCIENCES LLC
P-123349	Adjuvant	ATHENA PERAFOAM (93752-ADJ-1)	2023000873	Active	2023 ATHENA AG, INC.
P-121274	Adjuvant	NEXUM NG DRIFT CONTROL, CANOPY PENETRATING AGENT & DEPOSITION AID (9349-ADJ-8)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121275	Adjuvant	BORDER 2.0 TURF & ORNAMENTAL DRIFT CONTROL AGENT AND DEPOSITION AID (9349-ADJ-10)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121276	Adjuvant	CONVERT COMPATIBILITY AGENT, BUFFER AND SPREADER (9349-ADJ-3)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121277	Adjuvant	ION WATER CONDITIONER PLUS SURFACTANT (9349-ADJ-4)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121278	Adjuvant	KNOCKDOWN ANTIFOAMING AGENT / DEFOAMING AGENT (9349-ADJ-5)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121279	Adjuvant	MICROYL CROP OIL REPLACEMENT ADJUVANT (9349-ADJ-6)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121280	Adjuvant	NEW BALANCE PH ACIDIFIER/NONIONIC SURFACTANT (9349-ADJ-7)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121281	Adjuvant	SYNC ACTIVATOR ADJUVANT (9349-ADJ-2)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-121282	Adjuvant	TRANSPORT ULTRA AMMONIUM SULFATE REPLACEMENT PLUS SURFACTANT PREMIX (9349-ADJ-1)	2023000827	Active	2023 PRECISION LABORATORIES, LLC
P-121283	Adjuvant	ACTIVO ACTIVATOR ADJUVANT WITH TURF PIGMENT (9349-ADJ-9)	TBD	Pending	2023 PRECISION LABORATORIES, LLC
P-123270	Adjuvant	GENERAL PURPOSE SURFACTANT FARM GENERAL 80/20 SURFACTANT II NONIONIC SURFACTANT (84009-ADJ-2)	2023000590	Active	2023 RAGAN AND MASSEY LLC
P-123271	Adjuvant	FARMWORKS 80/20 SURFACTANT II NONIONIC SURFACTANT (84009-ADJ-3)	2023000591	Active	2023 RAGAN AND MASSEY LLC
P-123272	Adjuvant	KNOCK DOWN FOAM QUICKLY FARM GENERAL DEFOAMER ANTIFOAMING AGENT (84009-ADJ-4)	2023000592	Active	2023 RAGAN AND MASSEY LLC
P-123273	Adjuvant	FARMWORKS KNOCK DOWN FOAM QUICKLY DEFOAMER ANTIFOAMING AGENT (84009-ADJ-5)	2023000593	Active	2023 RAGAN AND MASSEY LLC
P-123274	Adjuvant	FARM GENERAL 90/10 SURFACTANT (84009-ADJ-1)	2023000556	Active	2023 RAGAN AND MASSEY LLC
P-135283	Adjuvant	BREWER TA-39 (999999-ADJ-999999)	2023000828	Active	2023 BREWER INTERNATIONAL
P-135284	Adjuvant	SUN WET (999999-ADJ-999999)	2023000829	Active	2023 BREWER INTERNATIONAL
P-133294	Adjuvant	AQUA-YIELD NANOPRO (999999-ADJ-999999)	TBD	Pending	2023 AQUA YIELD OPERATIONS
P-133295	Adjuvant	TURF NANOTECH NANOFUSE ((999999-ADJ-999999)	TBD	Pending	2023 AQUA YIELD OPERATIONS
P-133302	Adjuvant	CLEARARRAY OXIDIZING SHOCK (102613-ADJ-3)	TBD	Pending	2023 JACUZZI PRODUCTS CO.
P-133303	Adjuvant	Cleararray pH Up	TBD	Pending	2023 JACUZZI PRODUCTS CO.
P-133304	Adjuvant	Cleararray Alkalinity Up	TBD	Pending	2023 JACUZZI PRODUCTS CO.
P-134295	Adjuvant	Cleararray pH/Alkalinity Down	TBD	Pending	2023 JACUZZI PRODUCTS CO.
P-134296	Adjuvant	Cleararray Borate Plus	TBD	Pending	2023 JACUZZI PRODUCTS CO.



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
 28 STATE HOUSE STATION
 AUGUSTA, MAINE 04333

JANET T. MILLS
 GOVERNOR

AMANDA E. BEAL
 COMMISSIONER

July 25, 2023

Kennebec Estuary Land Trust
 Dillon Mulhern
 872 Washington St.
 Bath, ME 04530

RE: Variance permit for CMR 01-026 Chapter 29, Kennebec Estuary Land Trust

Dear Mr. Mulhern,

The Board of Pesticides Control considered your application for variance from Chapter 29, Section 6. The variance is approved, with the condition that the product to be used is currently registered in the State of Maine or was registered at the time of purchase and that no applications are made to standing water. The applicator must use nonpowered application equipment and the spray must be directed away from the water with no drift or direct discharge to the water body or wetland.

The Board authorizes the issuance of two-year permits for Chapter 29, therefore this permit is valid until December 31, 2024, as long as applications are consistent with the information provided on the variance request. Please notify the Board in advance of changes, particularly if you plan to use a different product from those listed.

Please bear in mind that your permit is based upon your company adhering to the precautions listed in Section X of your Chapter 29 variance request.

I will alert the Board at its next meeting that the variance permit has been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

John T. Pietroski
 Acting Director

JOHN PIETROSKI, ACTING DIRECTOR
 90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-2731
 THINKFIRSTSPRAYLAST.ORG



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STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

July 19, 2023

Top Leaf Tree, LLC
Kevin Prevost
147 Valley Rd.
Raymond, ME 04071

RE: Variance permit for CMR 01-026 Chapter 29, Top Leaf Tree, LLC

Dear Mr. Prevost,

The Board of Pesticides Control considered your application for variance from Chapter 29. The variance is approved, with the condition that all products to be used are currently registered in the State of Maine or were registered at the time of purchase and any application is made above the high-water line. Anything below high water must be manually removed.

The Board authorizes the issuance of two-year permits for Chapter 29, therefore this permit is valid until December 31, 2024, as long as applications are consistent with the information provided on the variance request. Please notify the Board in advance of changes, particularly if you plan to use a different product from those listed.

Please bear in mind that your permit is based upon your company adhering to the precautions listed in Section X of your Chapter 29 variance request.

I will alert the Board at its next meeting that the variance permit has been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

John T. Pietroski

MEGAN PATTERSON, DIRECTOR
90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-2731
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