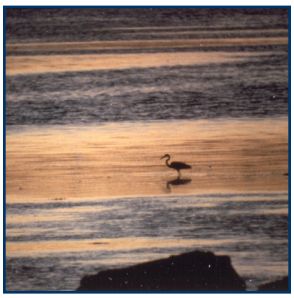
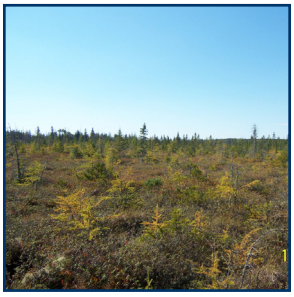
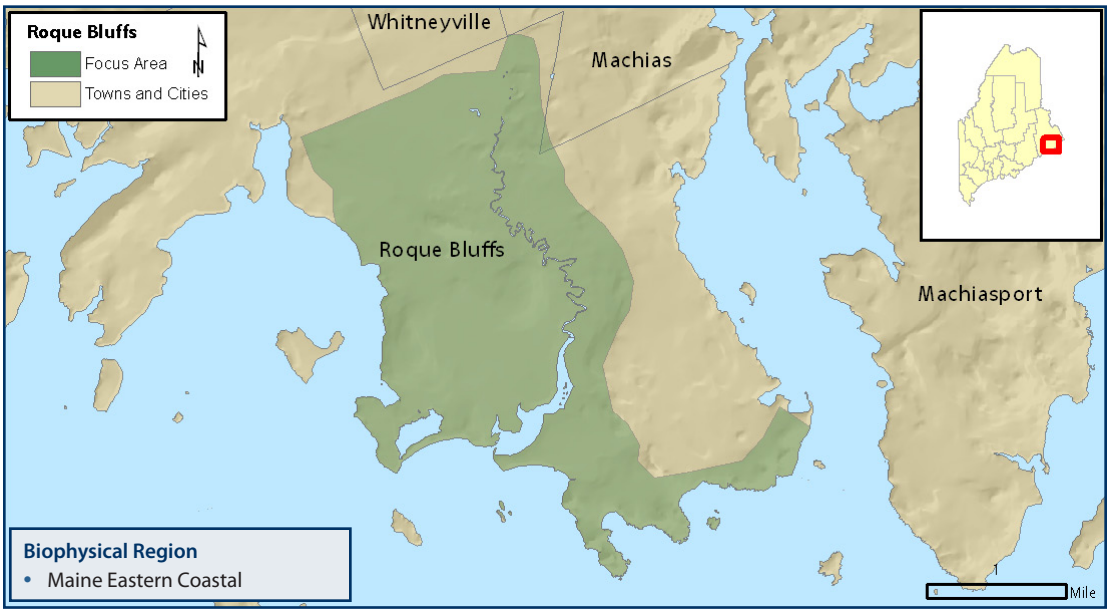
Beginning with HABITAT

Focus Areas of Statewide Ecological Significance

Roque Bluffs







WHY IS THIS AREA SIGNIFICANT?

The Roque Bluffs Focus Area features an interesting array of intact peatlands and tidal marsh in close proximity to one another. The size, species composition, lack of recent human disturbance (i.e., within the last 60 years), and intact surroundings of this marsh indicate that it is of statewide significance.

OPPORTUNITIES FOR CONSERVATION

» Educate recreational users about the ecological and economic benefits provided by the focus area.
» Maintain natural hydrologic regime by avoiding drainage or impoundment of the wetlands, streams or adjacent water bodies.
» Monitor and remove invasive plant populations.
» Protect sensitive natural features through careful management planning on conserved lands.
» Work with willing landowners to permanently protect remaining undeveloped areas.

For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: www.beginningwithhabitat.org/toolbox/about_toolbox.html.

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Rare Animals
Crowberry Blue
Purple Sandpiper

Rare Plants
Gaspe Arrow-grass

Rare and Exemplary Natural Communities
Brackish Tidal Marsh
Coastal Plateau Bog Ecosystem
Maritime Huckleberry Bog

Significant Wildlife Habitats
Tidal Wading Bird and Waterfowl Habitat
Shorebird Area

Public Access Opportunities
- Rogue Bluffs State Park, MBPL
- Englishman's River, MDIFW

Rogue Bluffs coastline , Maine Natural Areas Program

FOCUS AREA OVERVIEW

This area, which includes Englishman River Marsh, the Black Head Bogs, Hanscom Heath, and Great Cove Heath, is generally in excellent condition. The peatlands are scattered to the east and west of the major feature of this focus area—the extensive Englishman River tidal marsh. The total area of the Englishman River Marsh is roughly 230 acres, making it one of the larger tidal marshes in the Downeast Region.

Englishman River Tidal Marsh

The most interesting feature of the Englishman River tidal marsh is the extensive mixing zone where freshwater marsh converges with salt marsh. The resulting "brackish tidal marsh" supports an interesting assemblage of plant species with characteristics of both freshwater and saltwater tidal marshes.

Two rare plants are found along the Englishman River Marsh: a population of saltmarsh sedge (*Carex recta*) in the upper fresh/brackish part of the marsh, and Gaspe arrow-grass (*Triglochin gaspense*) in the lower salt flats. There are fewer than ten locations of each species currently known in Maine. In fact, Gaspe arrow-grass had not been documented in the United States in over 40 years. It is at the southwestern edge of its range in Maine, and only a few known locations exist in Washington County.

The salt marsh near the River's mouth is most extensive on the west side of the river and is largely dominated by saltwater cordgrass (*Spartina alterniflora*) lower down in the intertidal zone and saltmeadow cordgrass (*Spartina patens*) and blackgrass (*Juncus gerardii*) more abundant in the mid-tide zone. Patches of mixed graminoid-forb salt marsh, characterized by seaside plantain (*Plantago maritima*) and salt marsh arrow grass (*Triglochin maritimum*), occur interspersed among the mid and higher tide zones.

The brackish tidal marsh that lies about two miles upstream is transitional between upstream fresh meadows and downstream salt marshes. It is composed primarily of hedge bindweed (*Convolvulus sepium*) and the sedge *Carex paleacea*. Red fescue (*Festuca rubra*), wire rush *(Juncus arcticus*), New York aster (*Aster novi-belgii*) and silverweed (*Argentina anserina*) are also common. At this point in the river, the tidal range appears to be a few feet. Plants characteristic of slow-moving freshwater include yellow water-lily (*Nuphar variegata*), perfoliate pondweed (*Potamogeton perfoliatus*), common arrowhead (*Sagittaria latifolia*), water-parsnip (*Sium suave*) and river horse-

tail (*Equisetum fluviatile*). The banks of the channel are lined by Canada bluejoint grass (*Calamagrostis canadensis*).

Black Head Bogs
The Black Head Bogs are three 10 to 20-acre maritime huckleberry-crowberry bogs between Mack Cove and Roque Bluffs Road. The bog on the south side of the road is dominated by black crowberry (*Emetrum nigrum*) and sheep laurel (*Kalmia angustifolia*). Also common in the herb layer are tufted club-rush (*Trichophorum cespitosum*), Labrador tea (*Rhododendron groenlandicum*), leatherleaf (*Chamaedaphne calyculata*), baked apple-berry (*Rubus chamaemorus*) and black spruce (*Picea mariana*). Although these small peatlands have the requisite plant species, they lack the morphology (e.g., a clear marginal slope) to be considered a Coastal Plateau Bog ecosystem.

Hanscom Heath
This 49-acre peatland consists of a 23-acre forested black spruce lagg and a 26-acre open maritime huckleberry-crowberry bog. Within the huckleberry-crowberry bog, there are two zones. The outer portion is primarily heath shrubs, with scattered black spruce and larch. Sheep laurel, Labrador tea, and leatherleaf are the most common species here. The inner portion of the bog (~15 acres) is slightly raised, and characterized black crowberry. The diversity in this bog is quite high, including species such as grass-pink (*Calapogon tuberosus*), dwarf huckleberry (*Gaylussacia dumosa*), mountain holly (*Nemopanthus mucronatus*) and baked apple-berry. Aside from a road abutting one end, there are no signs of disturbance.

Great Cove Heath
This 85-acre coastal plateau bog has vegetation characteristics similar to those described above for the Black Head Bogs and Hanscom Heath. The most common species are sheep laurel, black crowberry, and leatherleaf, with baked apple-berry and deer-hair sedge also frequent. The perceptible marginal slope and raised surface distinguish this peatland from other similar bogs in Roque Bluffs.

RARE AND EXEMPLARY NATURAL COMMUNITIES

Coastal Plateau Bog Ecosystem: In Maine, Coastal Plateau Bog Ecosystems are restricted to the downeast coast, and not found anywhere else in the United States. These unique peatlands have flat surfaces that are raised above the surrounding terrain, and are generally treeless or sparsely treed. Characteristic plants of coastal plateau bog ecosystems include deer-hair sedge (*Trichophorum cespitosum*), labrador tea (*Rhododendron groenlandicum*), black crowberry (*Empetrum nigrum*), and baked-appleberry (*Rubus chamaemorus*). The latter two species reach the southern limits of their lowland habitats in the coastal plateau bogs, making this community more similar to plant communities found at higher latitudes of the Northern Hemisphere. A Huckleberry-Crowberry Bog community is representative of Great Cove Heath. These are coastal or near-coastal peatlands, either in raised bogs or in weakly minerotrophic areas transitional to true bogs. They are saturated during the growing season and typically highly acidic.

Brackish Tidal Marsh: Brackish tidal marshes contain both freshwater and brackish water species, often in bands corresponding to tidal exposure. Tall rushes and bulrushes often predominate over extensive mid-elevation flats. At the lower elevations, rosette-forming herbs, such as lilaeopsis and tidal arrowhead, may be common on the mudflats. Near the high tide line, there may be a fairly narrow zone of muddy gravel or rock shore sparsely vegetated with low herbs, including some rare species such as Long's bitter-cress or water-pimpernel. Sweetgale and poison ivy are often present at the upper fringes of the marsh, at or above the tidal reach.

Maritime Huckleberry Bog: These are coastal or near coastal peatlands, either in raised bogs or in weakly minerotrophic areas transitional to true bogs. They are saturated during the growing season and typically highly acidic (pH < 5.0, occasionally slightly higher). This peatland type is characterized by low (usually < 60 cm) heath shrubs, such as sheep laurel and leatherleaf, as the dominant layer.

Ecological Services of the Focus Area

- Cleans water running off land prior to discharge into ocean.
- Provides high quality habitat for waterfowl, wading birds, and other wildlife.
- Provides a major migratory stopover, feeding, breeding and roosting area for myriad bird species.
- Nursery for juvenile fish and shellfish.
- Nutrient export to marine food webs.
- Protects shoreline from erosion and storm surge

Economic Contributions of the Focus Area

- Serves as a valuable recreational resource with opportunities for wildlife observation, paddling, hunting, and angling.
- Provides a scenic viewshed that attracts tourism and raises property values.
- Supports local marine resource industries

CHARACTERISTIC SPECIES

The majority of the mudflats and intertidal areas in the focus area provide **Tidal Waterfowl and Wading Bird Habitat**. These areas provide undisturbed nesting habitat and undisturbed, uncontaminated feeding areas and are essential for

Rogue Bluffs coastline , Maine Bureau of Parks and Lands

maintaining viable waterfowl and wading bird populations. The mouth of the Englishman River and nearly all of the tidal marsh in the focus area are also important **Shorebird Areas**. Shorebird Areas are important feeding and resting stop over sites for shorebirds on their long migrations.

Crowberry blue (*Plebejus idas empetri*) has been documented in the coastal bogs in the focus area. Crowberry blue is a rare butterfly found in openings in mixed evergreen forests, bogs, wet meadows, seeps. It uses plants in the heath family as a caterpillar host.

Gaspe arrow-grass *(Triglochin gaspensis)* is a grassy looking, lawn forming plant found in tidal saltmarshes. Flowers are borne on a leafless stalk (scape) in a spike-like raceme. The base of the scape is often purple. Gaspe arrow-grass differs from other arrow-grasses in Maine by forming lawn-like patches (as opposed to clump forming) and the leaves are as long as or longer than the scape. *Triglochin maritima* (saltmarsh arrow-grass) differs from *T. gaspensis* in that the scape is taller than the leaves. Flowers July through August. Gaspe arrow-grass has been documented in the saltmarshs of the lower portions of the Englishman River.

Saltmarsh sedge *(Carex recta)* is present in the brackish tidal marsh of the Englishman River. Members of this genus can be difficult to identify without careful examination of microscopic features and knowledge of general groups of species. *Carex recta* is a member of the section *Phacocystis*, a group recognized by it's beakless perigynia on peduncled (sometimes appearing sessile) spikes. *C. recta* has spikes that are erect and appear sessile. The perigynia are inconspicuously nerved (as opposed to conspicuously nerved in *C. vacillans*) with short pappilose hairs (opposed to dense pappilose on *C. vacillans*). The achenes are strongly invaginated. Little currently known about this species in Maine. Rarer than initially believed due to confusion with *Carex vacillans*. Many collections that were thought to be *C. recta* were instead *C. vacillans*. Restricted to coastal saltmarshes.

CONSERVATION CONSIDERATIONS

» The most noteworthy aspect of the Englishman River Marsh is the broad area of mixing between salt water and fresh water. Consequently, any impoundment or alteration of the freshwater inflow would degrade this brackish tidal marsh. Future management activities should avoid additional impacts to the site's hydrology.

» In 2000 MNAP staff encountered two people collecting sweet grass *(Hierochloe odorata)* for basket-making in the

Englishman River Marsh. On the relatively small scale this was occurring, this commercial activity is probably not a significant threat to the marsh.

» There are no evident signs of former ditching or draining of the Englishman River Marsh; most other sizable tidal marshes in coastal Maine have been ditched in the past.

» Although a few invasive species occur on the periphery of the Englishman River Marsh, it is largely devoid of aggressive plants such as common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*) that have colonized other disturbed brackish and fresh marshes in the northeast. Disturbances to soils and natural vegetation in or adjacent to the marshes can create opportunities for colonization by invasive plant species. Local groups with an interest in the marsh should be made aware of the potential threat of invasive plants and keep an eye out for them before they become well established.

» In general, threats to peatlands include peat mining, cranberry harvesting, timber harvest around the forested perimeters, and development of surrounding uplands. The integrity of wetlands and the processes and life forms they support are dependent on the water quality and hydrology of the site. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution. These effects could have devastating impacts on populations of rare freshwater mussels and other aquatic life.

» Eelgrass is sensitive to losses due to disease, storms, sediments, ice damage, dredging, shellfishing, propeller damage, pollution, nutrient enrichment, runoff, jet skis, and inboard and outboard motors. In 1931-1932, a wasting disease decimated 90% of the eelgrass in the North Atlantic. Mussel dragging can pose severe and long lasting threats to eelgrass beds; it takes an average of 11 years for eelgrass in dragged areas to grow to 95% cover in undisturbed beds. Eelgrass is a key indicator for assessing nitrogen loading as it will rapidly decline due to shading by algae overgrowth.

» Slow vegetation growth rates, due to nutrient poor conditions, mean slow recovery from physical disturbances, such as recreational trail use. Great Cove Heath is used by a botany professor from the University of Maine for field trips. A few trails have been worn in the bog on the south side, near the Roque Bluffs Road, from this use. If disturbances are necessary, traversing during winter conditions or using boardwalks can minimize impacts.

» Current projections suggest sea level will rise at least 2 feet in the next century due to changing climate and warming temperatures. As sea levels rise, coastal habitats will begin to migrate inland. In areas where this inland migration is blocked by development these habitats will be lost. Conservation of low-lying, undeveloped uplands where coastal marshes, beaches, and other intertidal natural communities can migrate inland with sea level rise should be promoted.

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Crowberry Blue	*Plebejus idas empetri*	SC		
Plants	Gaspe Arrow-grass	*Triglochin gaspensis*	SC	S2	G3G4
	Salt-marsh Sedge	*Carex recta*		SH	G4
Natural Communities	Brackish Tidal Marsh	Brackish tidal marsh		S3	GNR
	Coastal Plateau Bog Ecosystem	Coastal plateau bog ecosystem		S3	GNR
	Maritime Huckleberry Bog	Huckleberry - crowberry bog		S3	G3G5

State Status*

- E — Endangered: Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.
- T — Threatened: Rare and, with further decline, could become endangered; or federally listed as Threatened.
- SC — Special Concern: Rare in Maine, based on available information, but not sufficiently rare to be Threatened or Endangered.

**State status rankings are not assigned to natural communities.*

State Rarity Rank

- S1 — Critically imperiled in Maine because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).
- S2 — Imperiled in Maine because of rarity (6–20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3 — Rare in Maine (on the order of 20–100 occurrences).
- S4 — Apparently secure in Maine.
- S5 — Demonstrably secure in Maine.

Global Rarity Rank

- G1 — Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation.
- G2 — Globally imperiled because of rarity (6–20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3 — Globally rare (on the order of 20–100 occurrences).
- G4 — Apparently secure globally.
- G5 — Demonstrably secure globally.