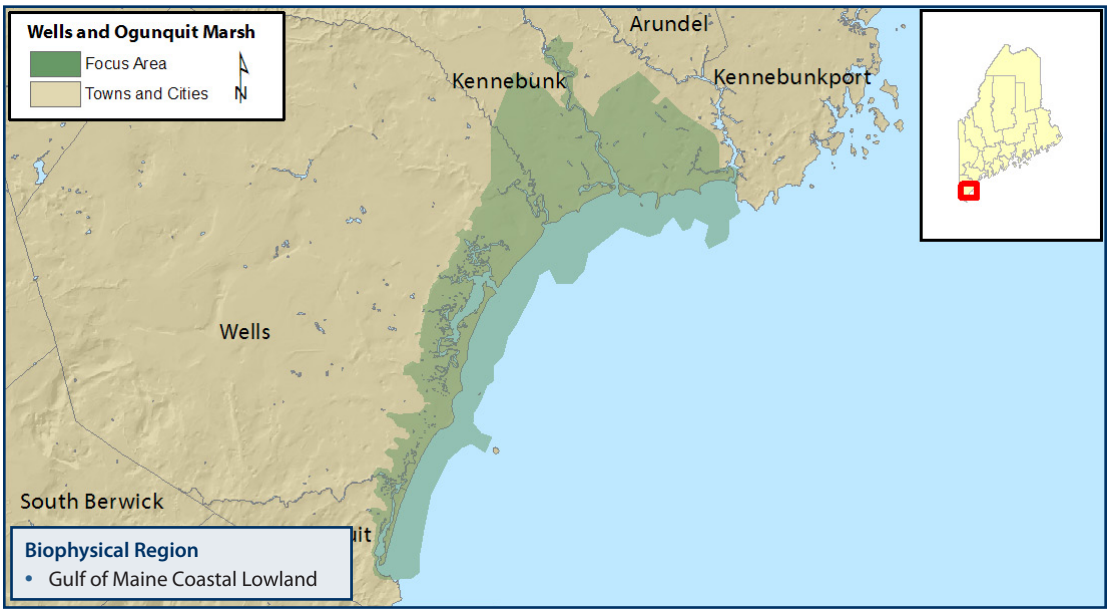
Beginning with HABITAT

Focus Areas of Statewide Ecological Significance

Wells and Ogunquit Marsh



WHY IS THIS AREA SIGNIFICANT?

The Wells and Ogunquit Marsh are the second largest salt marsh complex in Maine. They include extensive areas of undisturbed habitat and support several rare and exemplary natural communities and ecosystems along with a number of rare, threatened and endangered species. Much of the coastline within the Focus Area has been identified as important Tidal Waterfowl and Wading Bird Habitat and as Shorebird Area.

OPPORTUNITIES FOR CONSERVATION

» Work with willing landowners to permanently protect remaining undeveloped areas.
» Conserve upland natural communities as part of the greater marsh ecosystem.
» Monitor and remove invasive plant populations.
» Maintain the sites natural hydrology and identify and restore tidal restrictions and undersized culverts.

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

Rare Animals
Piping plover
Least tern
Saltmarsh Sharp-tailed Sparrow
Spot-winged Glider
Citrine Forktail

Rare Plants
Saltmarsh false-foxglove
Beach wormwood
Saltmarsh bulrush
Pygmyweed
Spongy arrow-head
Pale green orchis
Beach plum
American sea-blite
Sassafras
Dwarf glasswort
Slender blue flag

Rare and Exemplary Natural Communities
Brackish tidal marsh
Freshwater tidal marsh
Pitch pine bog
Coastal dune-marsh ecosystem
Tidal marsh estuary ecosystem
Dune grassland
Spartina saltmarsh

Essential Wildlife Habitats
PipingPlover/Least Tern

Significant Wildlife Habitats
Tidal Wading Bird and Waterfowl Habitat
Inland Wading Bird and Waterfowl Habitat
Shorebird Area
Deer Wintering Area

Photo credits, top to bottom: Maine Natural Areas Program (Top 2 photos), Maine Department of Inland Fisheries and Wildlife, Maine Natural Areas Program, Wells National Estuarine Research Reserve

Dune Grassland, Ogunquit Beach, Maine Natural Areas Program

FOCUS AREA OVERVIEW

The Wells and Ogunquit Marsh are the second largest salt marsh complex in the state. They support extensive areas of relatively undisturbed habitat and a wide array of wildlife including a large number of rare plants and animals. The Focus Area extends from the south end of Ogunquit Beach north to just beyond the mouth of the Mousam River. It includes all tidal marshes east of Route 1 along with upland buffers where available. The Focus Area also includes a large fresh water wetland complex and adjacent forests roughly bounded by the Little River, the Mousam River, and Route 1. The Focus Area is not intended to include the various highly developed areas along this segment of the coast, rather it is intended to include wetlands and uplands where there is an opportunity for practical conservation. The boundary line is a guide showing the area within which additional conservation projects could help sustain the long term health of these habitats.

RARE AND EXEMPLARY NATURAL COMMUNITIES

The Focus Area includes high quality examples of two types of ecosystems and five types of natural communities. An ecosystem is a group of natural communities and their environment, occurring together over a particular portion of the landscape, and held together by some common physical or biotic feature.

The two ecosystems in the Focus Area, Coastal Dune-Marsh Ecosystem and Tidal Marsh Ecosystem, are both comprised of suites of natural communities that are influenced by tides and marine geomorphology.

Spartina Saltmarsh: The most abundant community type is Spartina saltmarsh, or salt hay saltmarsh. Spartina salt marshes occur along the Ogunquit, Webhannet, Little, and Mousam Rivers. These large areas are dominated by expanses of saltmeadow cordgrass, smooth cordgrass, and black-grass. Shrubs are generally absent from the majority of the marsh and are more often found along the upland edge or on small raised islands within the marsh. Saltmeadow cordgrass gives a low meadow-like appearance throughout these marsh systems. On slightly higher elevations in the marsh black-grass is dominant, and along creeks or at slightly lower elevations smooth cordgrass is dominant. Salt pannes are abundant and often support widgeon grass. The peat substrate of the marsh is likely several meters thick.

Brackish Tidal Marsh: These marshes are found near the upper end of tidal influence along coastal rivers. They support 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.

Freshwater Tidal Marsh: These marshes are also found near the upper end of tidal influence along coastal rivers. They differ from brackish marshes in that they are above the intrusion of salinity. These marshes are dominated by patchy stout herbs, typically a mixture of wild rice, softstem bulrush, pickerelweed, and sometimes cat-tails. Mixed in with the tall herbs are lower forbs including several rare species. Some marshes may have mudflats dominated by forbs and low vegetation in patches among the graminoids; many have a very narrow band of low forbs near the high-tide-upland interface. Species found in brackish marshes, such as chair-maker's rush, may be in these marshes as well; but at least some obligate freshwater plants will also be present: pickerelweed, common arrowhead, sweet flag, and northern water-plantain, for example.

Dune Grasslands: These communities typically occur on dune formations in coastal areas. They are dominated almost exclusively by dune grass with very few other thinly scattered species. Dune grass is the anchor that helps keep the highly exposed sand dune formation in place. Dune grass needs actively accreting sand to survive and will die off if not stimulated to grow by shifting sand. Generally, the very front and back areas of the dunes are transition areas that support a small number of other characteristic plant species. Much of the original dune grassland occurring along this section of the coast is now heavily developed. Dunes and fore dune areas are essential habitat for the Federally Threatened piping plover and the State Endangered least tern. All the remaining viable areas of dune grassland should be preserved and managed as sensitive natural areas.

Pitch Pine Bog: A Pitch pine bog natural community is also included within the Focus Area. This type of bog is a sparsely forested peatland in which the dominant tree species are pitch pine and red maple. This community type is restricted to extreme southern Maine and usually occurs in relatively small patches of 20 to 40 acres. The shrub layer indicates the more southerly affinities of the pitch pine bog community type, with maleberry, nannyberry, and highbush blueberry being common. Cinnamon fern is the most abundant plant in the herb layer. Peat or sphagnum mosses cover the ground and form the substrate. The pitch pine bog at this site is located adjacent to the upland on the east side of the Little River in the vicinity of Crescent Surf Beach.

Ecological Services of the Focus Area

- Nutrient export to marine food webs
- Major migratory stopover for myriad bird species
- Cleans water running off land prior to discharge into ocean
- Nursery for juvenile fish and shellfish

Economic Contributions of the Focus Area

- Attracts tourism for wildlife observation, paddling, hunting, and angling
- Acts as protective buffer for storm surge
- Supports local marine resource industries
- Provides scenic vistas that raise property values
- Valuable open space for local residents

RARE SPECIES

Several rare animal species are known from the area, including **piping plover** (*Charadrius melodus)* and **least tern** *(Sterna antillarum)*. Both of these bird species are dependent on undisturbed dunes and fore dune areas for nesting and consequently for survival. Wide spread development of coastal areas throughout New England has limited habitat for these species. Over two thirds of Maine's 30 miles of beaches have been lost as nesting habitat for piping plovers and least terns because of construction of jetties, seawalls, and high-density housing. Least terns were listed as Maine's first Endangered species in 1982 and piping plovers, also listed as Federally Threatened, were listed as state Endangered in 1986. All areas that currently support nesting or brood raising activities for these species should be managed to insure their long-term survival.

The saltmarshes prevalent throughout the Focus Area provide breeding habitat for a number of migratory bird species including the rare **saltmarsh sharp-tailed sparrow** *(Ammodramus caudacutus)*. The saltmarsh sharp-tailed sparrow is a secretive species with very narrow habitat requirements found only in coastal saltmarshes of the eastern United States. This sparrow makes its nest on or near to the ground in shrubs and marsh grass and it forages in the saltmarsh vegetation. Suitable habitat for the saltmarsh sharp-tailed sparrow is declining throughout its range.

Eelgrass beds forms extensive underwater meadows in shallow bays and coves, tidal creeks, and estuaries of the Focus Area. Eelgrass is a flowering plant that reproduces by seed and by vegetative growth. Eelgrass beds are among the most productive plant communities in the world. They serve as a nursery habitat, and feeding area for many fish, waterfowl, wading birds, invertebrates, and other wildlife, including commercially valuable fish and shellfish. Eelgrass reduces water pollution by absorbing nutrients, and it dampens wave energy and slows currents, which helps stabilize sediments and buffer shorelines. Because of its important ecological functions, loss of eelgrass beds can result in reduced fish and wildlife populations, degraded water quality, and increased shoreline erosion.

Suitable wintering habitat for harlequin ducks is located in the near shore areas. **Harlequin ducks** *(Histrionicus histrionicus*) are small diving sea ducks with striking blue, white, black, and chestnut plumage. About 1000 birds from southeastern Canada winter in Maine, mostly in small flocks on rough coastal waters and exposed rocky shores. They forage by diving into foaming surf to glean marine invertebrates. Harlequins have an extremely low reproductive potential compared to other waterfowl. Harlequin ducks were listed as State Threatened in 1997.

Important shorebird roosting and feeding areas are located along several of the Focus Areas beaches and marshes. **Shorebird Areas** are important stopover sites for migratory shorebirds that use the beaches and intertidal mudflats as staging areas, feeding on the high concentrations of intertidal invertebrates and resting on the sandy beaches and gravel bars above the high tide line before embarking on their long (sometimes 2,000 or more miles) migrations to their wintering areas. Nearly all of the shoreline has been mapped as **Tidal Wadingbird and Waterfowl Habitat** and provides important feeding, nesting habitat to a variety of species.

Other significant features within the Focus Area include 12 rare plant species (see table for list). The majority of the rare plants are species with ranges that extend from the south barely extending into Maine. Some of them such as **salt-marsh false-foxglove** *(Agalinis maritima)* and **dwarf glasswort** *(Salicornia bigelovii)* are restricted to tidal salt marshes and may have a relative high level of protection due to the large area of salt marsh already in conservation ownership within the focus area. However, others are freshwater wetland species and many specific sites for them are not in conservation ownership. Rare plants dependent on coastal freshwater wetlands include **slender blue flag** *(Iris prismatica)***, smooth winterberry** *(Ilex laevigata)***,** and **pale green orchis** *(Platanthera flava var.herbiola)*. These populations are vulnerable to wetland alterations that could occur with encroaching development. The state Endangered **beach plum** *(Prunus maritima)* has been documented within the Focus Area. This species occurs in the dry thickets behind sand dunes and has been lost from most of the sites where it has been previously documented due to development. This species is on the verge of being extirpated from the state.

Public Access Opportunities
- » Rachel Carson National Wildlife Refuge, USFWS
- » Laudholm Farm, MBPL

Webhannet Marsh, Maine Natural Areas Program

CONSERVATION CONSIDERATIONS

- » Nearly all areas mapped as exemplary natural communities are contained within existing conservation lands. Many of the areas supporting rare plant species are not contained within conservation lands.

- » Natural communities still occurring on the uplands adjacent to the salt marshes in the Focus Area including upland forests, pine barrens, shrub swamps, forested swamps, and sand dunes should be conserved as part of the greater ecosystem of the marsh. Long-term preservation of the biodiversity of a high value natural area such as this will be best achieved by retaining as much of the surrounding natural landscape as possible.

- » Whenever possible a vegetative buffer should be established and protected around the perimeter of all salt marsh community types. The tidal marshes and the life they support are not independent of the landscape in which they occur. A buffer of 250 feet or more will serve to limit impacts from adjacent development, help prevent erosion, provide habitat needed by numerous species that depend on the

marsh, limit opportunities for colonization of invasive species, and prevent reckless impacts from off road vehicle use.

» The integrity of the tidal marshes and the processes and life forms they support are dependent on the maintenance of the tidal hydrology in as much a natural condition as possible. The hydrology of the tidal marshes, and subsequently sedimentation patterns, have been and are currently being impacted by culverts which restrict tidal flow on several creeks and by past ditching. Partial tidal restriction from culverts causes increased fresh water influence (reduced salinity) in the upper marsh and a subsequent increase of oxygen. Increased oxygen leads to deterioration of the upper marsh through decreases in peat elevation and shifts in plant species. Water crossing structure repair, maintenance and installation projects should follow guidelines for aquatic species passage in order to avoid further fragmentation of aquatic and riparian habitats and unintended tidal restriction.

» Marshes and swamps in the Focus Area have been disturbed by numerous road and railroad crossings. 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 marshes should be made aware of the potential threat of invasive plants and keep an eye out for them before they become well established.

» Eelgrass is sensitive to losses due to disease, storms, pollution, nutrient enrichment, dredging, shellfishing, ice damage, propeller damage, sediments, and runoff. Because of its important ecological functions, loss of eelgrass beds can result in reduced fish and wildlife populations, degraded water quality, and increased shoreline erosion.

» Widespread loss, degradation, and fragmentation of coastal saltmarshes along the eastern seaboard are the biggest threats to the saltmarsh sharp-tailed sparrow. Habitat preservation and restoration are the most important factors for conserving this species.

» Shoreline development and subsequent habitat degradation are potential threats to Maine small populations of Horseshoe Crab. Though generally overlooked as a resource, Horseshoe Crabs in Maine are very vulnerable to depletion from any harvesting activities. In 2003, taking and possession of Horseshoe Crabs became prohibited in Maine.

» All areas of sand dunes should be posted with signs indicating their fragile nature and regular crossing areas should be well defined and managed to prevent erosion of the dunes.

» Care should be taken to insure that boating in the channels and mouths of the various marshes does not cause erosion to the exposed soils along the marsh edge, and that excessive noise from boats and people do not disrupt normal patterns of wildlife behavior.

» No dredge spoils or other fill materials should be placed in any of the marshes.

» Consult with MDIFW and USFWS on any projects requiring a municipal or state permit in areas designated as Essential Habitat for the Endangered piping plover and least tern and the area covered by the Wells Beach Agreement (Wells and Drakes Island Beaches).

» Avoid or minimize any further development of beach and dune habitats.

» This area includes Significant Wildlife Habitat for waterfowl and wading birds, shorebirds, and wintering deer. Land managers should follow best management practices in and around Significant Wildlife Habitat. Contact MDIFW for more information.

» 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.

Little River Marsh, Wells National Estuarine Research Reserve

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Piping plover	*Charadrius melodus*	E	S2B	G3
	Least tern	*Sterna antillarum*	E	S1B	G4
	Saltmarsh Sharp-tailed Sparrow	*Ammodramus caudacutus*	SC	S3B	G4
	Spot-winged Glider	*Pantala hymenaea*	SC	S2	G5
	Citrine Forktail	*Ischnura hastata*	SC	S1S2	G5
Plants	Saltmarsh false-foxglove	*Agalinis maritima*	SC	S3	G5
	Beach wormwood	*Artemisia campestris ssp. caudata*	SC	S1S2	G5T5
	Saltmarsh bulrush	*Bolboschoerus robustus*	SC	S2	G5
	Pygmyweed	*Crassula aquatica*	SC	S2S3	G5
	Smooth winterberry holly	*Ilex laevigata*	SC	S2	G5
	Slender blue flag	*Iris prismatica*	T	S2	G4G5
	Pale green orchis	*Platanthera flava var.herbiola*	SC	S2	G4T4Q
	Beach plum	*Prunus maritima*	E	S1	G4
	Spongy arrow-head	*Sagittaria calycina var. spongiosa*	SC	S3	G5T4
	Dwarf glasswort	*Salicornia bigelovii*	SC	S1	G5
	Sassafras	*Sassafras albidum*	SC	S2	G5
	American sea-blite	*Suaeda calceoliformis*	T	S2	G5
	Brackish tidal marsh	Brackish tidal marsh		S3	GNR
	Coastal dune-marsh ecosystem	Coastal dune-marsh ecosystem		S3	GNR
	Dune grassland	Dune grassland		S2	G4?
	Freshwater tidal marsh	Freshwater tidal marsh		S2	G4?
	Pitch pine bog	Pitch pine bog		S2	G3G5
	Spartina saltmarsh	Spartina saltmarsh		S3	G5
	Tidal marsh estuary ecosystem	Tidal marsh estuary ecosystem		S3	GNR

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.