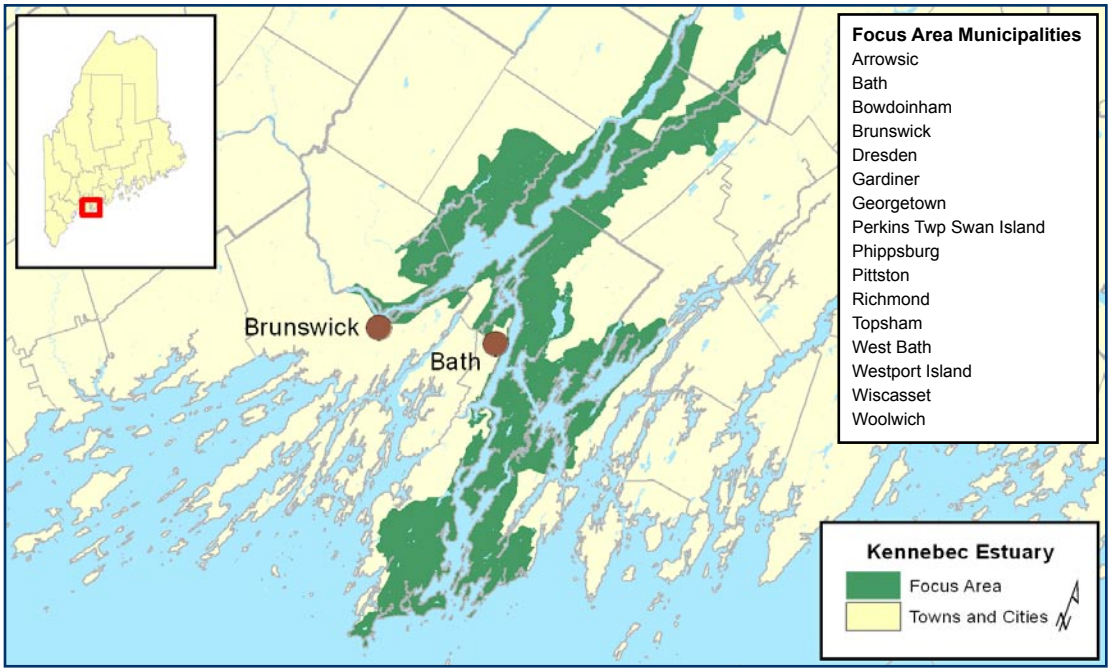
Beginning *with* HABITAT

Focus Areas of Statewide Ecological Significance

Kennebec Estuary



WHY IS THIS AREA SIGNIFICANT?

The Kennebec Estuary Focus Area contains more than 20 percent of Maine's tidal marshes, a significant percentage of Maine's sandy beach and associated dune habitats, and globally rare pitch pine woodland communities. More than two dozen rare plant species inhabit the area's diverse natural communities. Eight imperiled species of animals have been documented in the Focus Area, and it contains some of the state's best habitat for bald eagles.

OPPORTUNITIES FOR CONSERVATION

- Work with willing landowners to permanently protect remaining undeveloped areas.
- Encourage town planners to improve approaches to development that may impact Focus Area functions.
- Educate recreational users about the ecological and economic benefits provided by the Focus Area.
- Monitor invasive plants to detect problems early.
- Find ways to mitigate past and future contamination of the watershed.

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

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Rare Animals

Bald Eagle
Spotted Turtle
Harlequin Duck
Tidewater Mucket
Ribbon Snake
Redfin Pickerel
Atlantic Salmon
Piping Plover
Least Tern
Roseate Tern
Arctic Tern
Short-nosed Sturgeon
Saltmarsh Sharp-tailed Sparrow

Rare Plants

Lilaeopsis
Mudwort
Dwarf Bulrush
Marsh Bulrush
Dry Land Sedge
Yellow Pond-lily
Clammy Azalea
Pygmyweed
Tidal Spikerush
Stiff Arrow-head
Parker's Pipewort
Mountain-laurel
Marsh-elder
Water Pimpernel
Eaton's Bur-marigold
Estuary Bur-marigold
Long-leaved Bluet
Estuary Monkeyflower
Smooth Sandwort
Beaked Spikerush
Long's Bitter-cress
Spongy Arrow-head
Narrow-leaf Arrowhead
Sweet Pepper-bush
Small Salt-marsh Aster
Horned Pondweed
Saltmarsh False-foxglove
Large-purple False Foxglove

Rare and Exemplary Natural Communities

Alder Thicket
Pitch Pine Bog
Dune Grassland
Mixed Saltmarsh
Salt-hay Saltmarsh
Pitch Pine Woodland
Brackish Tidal Marsh
Freshwater Tidal Marsh
Coastal Dune-marsh Ecosystem
Maritime Spruce–Fir Forest
Pitch Pine Dune Woodland
Rose Maritime Shrubland
Silver Maple Floodplain Forest
Tidal Marsh Estuary Ecosystem
White Oak–Red Oak Forest
Spruce–Pine Woodland

Significant Wildlife Habitats

Roseate Tern
Tidal Wading Bird and Waterfowl Habitat
Inland Wading Bird and Waterfowl Habitat
Deer Wintering Area

Margaret Pizer

FOCUS AREA OVERVIEW

The Kennebec Estuary Focus Area contains more than 20 percent of Maine's tidal marshes, a significant percentage of Maine's sandy beach and associated dune habitats, and globally rare pitch pine woodland communities. This diverse complex of rare and exemplary natural communities provides critical habitat for more than two dozen rare plant species and several endangered and threatened animal species.

The Focus Area extends southward from Gardiner and Pittston at its upstream end to Phippsburg and Georgetown at the coast. Along with the mainstem of the Kennebec River, it encompasses numerous inlets and tributaries with hundreds of miles of tidal waterfront.

Estuaries are places where rivers meet the sea, where fresh water mixes with salt. Because of the rich supply of nutrients and varied habitats, estuaries are renowned for their productivity and ecological importance. The Kennebec Estuary features 25,000 acres of prime waterfowl habitat, unusual freshwater tidal conditions, and one of the few places in the world where major rivers come together to form an enclosed tidal delta.

The estuary faces ever-increasing development pressures, as more residential and second homes are built along Maine's coast. Recreational activities and invasive species also pose significant threats to the Focus Area's habitats and wildlife.

Conservation priorities in the Kennebec Estuary include habitat for migratory fish, undeveloped shoreline for bald eagle nesting and roosting, intact beaches and dunes, freshwater and saltwater tidal marshes, and the upland forests that buffer these shoreline ecosystems and provide habitat for songbirds and mammals. Publicly owned conservation lands in the Focus Area help to protect clam flats, drinking water, and community-based agriculture, and they provide recreational opportunities, such fishing, hunting, and hiking.

THE UPPER KENNEBEC ESTUARY

Merrymeeting Bay

At the heart of the Kennebec Estuary is Merrymeeting Bay, one of the most important waterfowl areas in New England. Six rivers, draining one-third of the state of Maine, converge in Merrymeeting Bay to form an inland, freshwater, tidal delta.

Extensive beds of emergent and submerged aquatic vegetation support thousands of ducks, geese, rails, wading birds, and other water-dependent species during spring and fall migrations. Wild rice is common throughout the bay, provid-

Rik Sferra

ing an important food source for migratory waterfowl and other birds such as bobolinks. The intertidal mudflats are also important feeding areas for migrating shorebirds. Floodplain forests and shrub swamps serve as key migratory stopover sites for neo-tropical passerines.

Over 50 species of freshwater fish and ten species of anadromous fish use Merrymeeting Bay, including the rare Atlantic salmon (*Salmo salar*), shortnosed sturgeon (*Acipenser brevirostrum*), and Atlantic sturgeon (*Acipenser oxyrinchus*). At least one rare mussel species, the tidewater mucket (*Leptodea ochracea*), inhabits the bay. One of the small tributaries flowing into Merrymeeting Bay is Maine's only known location for the redfin pickerel (*Esox americanus*). American eels, currently believed to be declining in much of their geographic range, are abundant in parts of the bay.

Merrymeeting Bay has some of the northeast's best habitat for rare plants associated with tidal freshwater marshes. Several sites around the bay are particularly significant, such as the Cathance River, Chops Creek, Eastern River, Lines Island, Abagadasset Point, and Swan Island.

Cathance River

The Cathance River, meaning "crooked river" in Abenaki, is a twenty-mile, roaming river that navigates its way through Bowdoin, Bowdoinham, and Topsham. The surrounding watershed is mostly rural with forests, fields, and agricultural lands. The river and the associated Bradley Pond are known for excellent paddling and fishing.

The watershed has habitats for rare plants, waterfowl, mammals, amphibians, bald eagles, and other flora and fauna. This area is relatively free of invasive plants, and the vegetation helps to remove pollutants from the groundwater and surface water before they enter the river.

Like many areas of Merrymeeting Bay, the freshwater tidal marshes along the Cathance River are dominated by wild rice (*Zizania aquatica*). Less abundant are pickerelweed (*Pontederia cordata*), water parsnip (*Sium sauve*), soft-stem bulrush (*Schoenoplectus tabernaemontanii*), and river bulrush (*Bolboschoenus fluviatilis*). Perhaps the most notable inhabitant of this stretch of river is the globally rare Eaton's bur marigold (*Bidens eatonii*). More than a thousand individuals of this rare plant live along a 300-meter section of the riverbank. Also present are the rare estuary bur marigold (*Bidens hyperborea*), spongy arrowhead (*Sagittaria calycina* ssp. *spongiosa*), Parker's pipewort (*Eriocaulon parkeri*), and Long's bittercress (*Cardamine longii*).

Chops Creek

A freshwater tidal marsh covering approximately 100 acres extends along much of Chops Creek. The marsh is dominated by American bulrush (*Schoenoplectus pungens*) at the southern end and wild rice (*Zizania aquatica*) further upstream. Pickerelweed (*Pontederia cordata*) and bull-head lily (*Nuphar variegatum*) live near the low-tide line along the creek. A small cove a few hundred meters north of Chops Point supports Parker's pipewort (*Eriocaulon parkeri*), water pimpernel (*Samolus valerandi*), pygmyweed (*Crassula aquatica*), estuary bur-marigold (*Bidens hyperborea*), Eaton's bur-marigold (*Bidens eatonii*), mudwort (*Limosella australis*), and thousands of spongy arrowhead (*Sagittaria calycina* ssp. *spongiosa*) plants.

Chops Creek has the highest abundance of submerged aquatic vegetation of all sites inventoried to date in Merrymeeting Bay. Dominant species are tapegrass (*Valisneria americana*) and pondweeds (*Potamogeton perfoliatus* and others), but several other species are present. The adjoining uplands are intact and forested, and sparse residential development within the creek's watershed provides ample buffering and great potential for conservation.

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Eastern River

Well known as a wintering area for bald eagles, the Eastern River also features numerous rare plants and a freshwater tidal marsh. The rivershore has abrupt banks with overhanging trees, low oxbows, and meanders with extensive mudflats of freshwater tidal marsh vegetation. These tidal sections are dominated by wild rice (*Zizania aquatica*), soft-stem bulrush (*Schoenoplectus tabernaemontanii*), and American bulrush (*Schoenoplectus pungens*). Low tide exposes broad sections of soft, relatively open mud flats. Estuary bur-marigold (*Bidens hyperborea*), spongy arrowhead (*Sagittaria calycina* ssp. *spongiosa*), Parker's pipewort (*Eriocaulon parkeri*), and Eaton's bur-marigold (*Bidens eatonii*) grow throughout the area.

Lines Island

Along the southeast side of Lines Island is a 20-acre freshwater tidal marsh with some of the bay's largest populations of rare plants. Dominated by wild rice, this marsh contains softer mud that supports hundreds of spongy arrowhead along with scattered populations of Parker's pipewort and estuary bur-marigold. Water pimpernel occurs sporadically where the base of the rocky upland meets the mud flats. In part because of its importance for bald eagles, Lines Island has been protected as a wildlife refuge by the Maine Department of Inland Fisheries and Wildlife.

Abadagasset Point To Pork Point

The cove on the north side of Abadagasset Point has a broad, extensive tidal flat of approximately 200 acres with bands of vegetation. The ledgy Abagadasset Point supports small populations of Parker's pipewort, mudwort (*Limosella australis*), water pimpernel, and Eaton's bur-marigold.

Swan Island

Swan Island is located in the Kennebec River between the towns of Richmond and Dresden. The island is well known for its abundant and often quite visible wildlife, especially nesting bald eagles, white-tailed deer, and wild turkey. The island is the site of a small, abandoned town formerly known as Perkins Township, and it has long been recognized for its interesting history. Native American tribes, early explorers, and settlers used the island, and it was reportedly visited by American historical figures such as Aaron Burr and Benedict Arnold. The Maine Historic Preservation Commission, with cooperation from the Maine Department of Inland Fisheries and Wildlife, successfully added Swan Island to the National Register of Historic Places. Each year, more than 4,000 people visit Swan Island. Visits to the island are limited by the Maine Department of Inland Fisheries and Wildlife (MDIFW).

Several hundred acres of tidal flats surround the island. The shoreline has a range of substrates—soft and firm mud, sand, gravel, cobble, and ledge—that provide suitable habitat for seven rare plant species. Wild rice dominates much of the marsh at the southern end of the island, joined by associated species such as waterworts (*Elatine* spp.), three-square bulrush (*Schoenoplectus pungens*), and false pimpernel (*Lindernia dubia*). Some of the wild rice may have originated from historic seeding efforts by MDIFW.

The island's upland forests of mature oak and pine have regrown on former pastures. A long-standing prohibition on hunting, however, has resulted in a large deer population that is impeding forest regeneration by overbrowsing seedlings and saplings.

THE LOWER KENNEBEC ESTUARY

Back River/Hockomock Bay

Marshes along the Sasanoa and Back Rivers make up one of the largest brackish tidal marsh systems in Maine. Extending southeastward from Bath, these wetlands form a transition zone from the freshwater tidal systems of Merrymeeting Bay to the saltwater systems near the Kennebec's mouth. Below

Merrymeeting Bay, brackish waters and strong tidal currents prevent freezing, and the estuary offers critical wintertime habitat for waterfowl.

The salt marshes along the Back River in Georgetown are long and linear, covering nearly a thousand acres. The marsh vegetation exhibits distinct patterns of zonation, with cordgrass (*Spartina alterniflora*), seaside goldenrod (*Solidago sempervirens*), and silverweed (*Argentina anserina*) dominant along the edges of creeks. Meadows of salt hay (*Spartina patens*) cover the majority of the marsh, which is dotted with slightly depressed pools or pannes. Arrow-grass (*Triglochin maritimum*), seaside plantain (*Plantago maritima*), and the rare seaside gerardia (*Agalinis maritima*) colonize the pools and pannes.

Uplands along the Back River are oak-pine forests with small, scattered freshwater wetlands. Spotted turtles (*Clemmys guttata*) occur in a few locations near the Back River, including three sightings at Trafton Meadow, the easternmost place at which the species has been recorded.

Pleasant Cove *Woolwich*

Five rare species have been found in moderate to high abundance along the eastern shore of Pleasant Cove: Parker's pipewort (*Eriocaulon parkeri*), spongy arrowhead (*Sagittaria calycina*), mudwort (*Limosella australis*), water pimpernel (*Samolus valerandi*), and lilaeopsis (*Lilaeopsis chinensis*).

Newtown and Minot Creeks and Tarrs Mountain *Arrowsic*

The salt marshes of Newtown Creek and Minot Creek cover approximately 200 acres along both sides of Tarrs Mountain. While these marshes do not have manmade drainage ditches, nearby salt marshes to the south along Minot Creek and west of Bald Head do have a few old ditches, which affect marsh hydrology and ecology. Both Nelson's sharp-tail sparrow (*Ammodramus nelsoni*) and the uncommon saltmarsh sharp-tail sparrow (*Ammodramus caudacutus*) breed here. The Tarrs Mountain area, just east of Newtown Creek, has a range of plant communities (salt marsh, pitch pine woodland, spruce woodland, oak-pine forest) amid more than 400 acres of forest. Properties with such diverse habitats in good condition located near protected land is very uncommon in midcoast Maine.

Preble Point *Arrowsic*

The tidal marsh on both sides of the point is dominated by saltmarsh cordgrass (*Spartina alterniflora*), with lesser amounts of softstem bulrush (*Schoenoplectus tabernaemontanii*). On the west side of the point, horned pondweed (*Zannichellia palustris*) grows in scattered mats on the mud flats near saltmarsh cordgrass. Lilaeopsis (*Lilaeopsis chinensis*) lives on mud flats to the south. On the east side of the point, ledges end abruptly at the tidal marsh, and lilaeopsis grows in scattered, small, dense patches below the cordgrass.

Preble Point is the state's only known location for the marsh bulrush (*Bolboschoenus* x *novae-angliae*), a hybrid of river bulrush and salt-marsh bulrush. This hybrid has not been documented in Maine in over 20 years.

The Basin Preserve

At 1,910 acres, the Basin Preserve property is now the largest protected parcel in the Kennebec Estuary. For comparison, nearby Popham Beach State Park is 530 acres and Reid State Park is 800 acres. The Preserve's diverse topography ranges from hemlock gorges and pitch pine ridges to over four miles of shoreline surrounding The Basin, a saltwater inlet on the New Meadows River popular with boaters. The donation of this parcel increases the amount of the estuary under conservation to nearly 13,000 acres and 120 miles of waterfront. The property is among the largest unfragmented forest blocks in the midcoast region. The Basin Preserve includes valuable shorebird habitat and wintering areas for black ducks. The Preserve area was used by some of the earliest European settlers in Maine (nearby Popham Colony was settled in 1607) and has four historic graveyards within its borders.

THE HEADLANDS AND BEACHES

Pasture Ridge

Pasture Ridge is a relatively broad, low ridgeline of uneven topography. It has a mosaic of pitch pine woodlands within a forest of mixed mid-successional oak-pine woods. At over 200 acres, this is one of the largest pitch pine woodlands in the state. Low-growing pitch pine (*Pinus rigida*) dominates the overstory and averages 25% cover, while white pine (*Pinus strobus*) and red pine (*Pinus resinosa*) are present in lower abundance. A few old stonewalls suggest that the pitch pine forest is growing on abandoned pastureland, and long-ago fires also could have facilitated establishment of the pitch pine. The understory is dominated by huckleberry (*Gaylussacia baccata*), low-bush blueberry (*Vaccinium angustifolium*), sheep laurel (*Kalmia angustifolia*), broom crowberry (*Corema conradii*), and lichens (*Cladonia* and *Cladina* spp.). The soil layer is thin and quite acidic (pH 3. 7). Scattered among the bedrock outcrops are small basins that sometimes contain water, perhaps as vernal pools.

Popham Beach

At over 400 acres, Popham Beach State Park and the adjacent Hunnewell Beach (private) serve as nesting habitat for piping plovers (*Charadrius melodus*) and least terns (*Sterna antillarum*). Nearby Pond Island, which is protected by the U.S. Fish and Wildlife Service, has served as a restoration site for roseate terns (*Sterna dougallii*). Popham Beach State Park also has small remnant pitch pine woodlands and a coastal dune/marsh ecosystem with a dune grassland.

This area was home to the Popham Colony, the first organized attempt to establish an English colony in the region known today as New England. The colony was planted at the mouth of the Kennebec River in the summer of 1607 and lasted for just over a year, until it was abandoned in the fall of 1608.

Morse Mountain and Seawall Beach to Small Point

This area extends west from Popham Beach through Small Point and encompasses several ecologically important features, including Meetinghouse Pond, Parker Head Swamp, Seawall Beach, Sprague River, and Cape Small.

Lying between the Morse River to the east and the Sprague River to the west, the Morse Mountain and Seawall Beach area supports several uncommon and high-quality habitats, including most of those listed above for the Popham Beach area. In addition, the interior supports a small but intact maritime spruce–fir larch forest. The area serves as an important feeding and staging area for the roseate terns that nest on nearby Pond Island. The 300-acre salt marsh along the Sprague River supports both saltmarsh sharp-tail sparrow (*Ammodramus caudacutus*) and Nelson's sharp-tail sparrow (*Ammodramus nelsoni*).

Meetinghouse Pond and Parker Head Swamp are contained within a large undeveloped area north of Route 209. This area supports a variety of small but intact wetland and upland habitats, including patches of pitch pine woodland, forested and shrub swamps, and a small pocket peatland, within a matrix of an oak-pine forest.

The entire block covers nearly 2,000 acres, is largely unfragmented by roads, and has isolated patches of recent logging activity. The extensive pitch pine woodland occurs as patches of various sizes within an area of approximately 150 acres. The shrub layer includes large patches of broom crowberry (*Corema conradii*). Approximately 50 clumps of the rare smooth sandwort (*Minuartia glabra*) occur on a small open ridge with *Cladina* spp. and *Cladonia* spp. lichens.

Parker Head Swamp is a 200-acre wetland identified by MDIFW as a high-value waterfowl and wading bird habitat. It is dominated by highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), and speckled alder (*Alnus incana* ssp. *rugosa*). A small acidic fen with sweet gale (*Myrica gale*), bog aster (*Aster nemoralis*), and beaked sedge (*Carex utriculata*) lies in the southeastern portion of the swamp.

Cape Small covers approximately 200 acres and supports a variety of uncommon plant communities. The interior is largely post-agricultural oak–pine forest interspersed with patches of spruce–fir forest and several acres of pitch pine woodland with broom crowberry (*Corema conradii*). The interior of Cape Small contains an undeveloped pond with a boggy edge. A rocky, shrubby headland along the perimeter of the peninsula is interrupted by seven pocket beaches and associated dunes, a few of which support the rare seabeach sedge (*Carex silicea*). The rocky headland of Cape Small supports black crowberry (*Empetrum nigrum*), golden heather (*Hudsonia ericoides*), huckleberry (*Gaylusaccia baccata*), juniper (*Juniperus communis*), large cranberry (*Vaccinium macrocarpon*), and bracken fern (*Pteridium aquilinum*). Closer to the ocean, the rocky headland has clumps of the rare smooth sandwort (*Minuartia glabra*) in small cracks and depressions of the exposed bedrock. Small and undisturbed, the dune community behind the south-facing beach is dominated by rugosa rose (*Rosa rugosa*), poison ivy (*Toxicodendron radicans*), and bayberry (*Myrica pensylvanica*). Clumps of sea-beach sedge occur in swales within the dune system.

Little River

This area includes the Little River, Sagadahoc Bay, the environs of Reid State Park, and nearly 700 acres of salt marsh. With little or no evidence of manmade ditches, this marsh could be one of the largest unditched marshes in midcoast Maine.

The upper part of the Sagadahoc Bay marsh has saltmarsh cordgrass (*Spartina alterniflora*), but somewhat low-salinity conditions are suggestd by the presence of creeping bentgrass (*Agrostis stolonifera*), wire rush (*Juncus arcticus* var. *balticus*), seaside crowfoot (*Ranunculus cymbalaria*), red fescue (*Festuca rubra*), and narrowleaved cattail (*Typha angustifolia*). Ditchgrass (*Ruppia maritima*) lives in the numerous natural pools or pannes. Southward toward Sagadahoc Bay, the creeks become larger and are lined densely with saltmarsh cordgrass. On the eastern side of Indian Point Road, toward the Little River salt marsh, is more high-quality marsh with patches of spike grass (*Distichlis spicata*). The surrounding uplands are forests of mixed pine and oak, with a few houses near the water.

At nearly 700 acres, Reid State Park supports a variety of intact natural communities, including uncommon pitch pine woodlands (about 20 acres in four separate patches) and dune grasslands. Piping plovers (*Charadrius melodus*) and least terns (*Sterna antillarum*) have nested on the beach, and roseate terns (*Sterna dougallii*) use the area for feeding.

Ecological Services of the Focus Area

- Nutrient export and sediment retention resulting in a rich and productive habitat for aquatic organisms
- Cleansing of water from several major river systems
- Protection of downstream areas from flooding

Economic Contributions of the Focus Area

- Coastal wetlands and dune systems protect properties from storm surge and sea-level rise
- Food source and nursery for commercially important shellfish and finfish
- Destination for duck hunters, birders, paddlers, and beachgoers

CONSERVATION CONSIDERATIONS

» With funding from the Maine Coast Protection Initiative, Merrymeeting Bay Trust, and the Nature Conservancy, the Kennebec Estuary Collaboration was recently initiated to provide the Phippsburg and Lower Kennebec Land Trusts with greater capacity to increase the amount of land and water protection in the estuary.

» Although much of the shoreline in the lower Kennebec estuary has been developed, most of the development is low-density residential. Some large parcels remain undeveloped, offering significant opportunities for conservation. However, residential development pressures are increasing, and further development is likely to degrade existing shoreline buffers, fragment wildlife habitat, lower water quality, and serve as a pathway for invasive species. Protection of undeveloped shoreline parcels along the estuary, especially wetlands and wetland buffers, should be a top priority.

» Climate change and sea-level rise may have major impacts on estuaries such as the Kennebec. Tidal marshes and other shoreline habitats may be flooded by rising seas, while the entire ecosystem could be altered by rising air and water temperatures, shifts in ocean circulation, increased erosion due to more intense storms, and other poorly understood effects of climate change.

» Culverts and other structures crossing streams and rivers should be large enough and installed properly so that they do not block the passage of fish and other aquatic species. Maintaining connections among aquatic habitats allows species to access areas that they use for breeding, feeding, and shelter. For example, forage fish such as silversides move between salt marshes and the open ocean. Removing barriers to fish passage and tidal flow can benefit offshore species that eat forage fish.

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» Invasive species such as the common reed (*Phragmites australis*) have expanded rapidly in salt and brackish marshes in parts of New England. While invasive plants do not seem to be a major threat currently in the Focus Area, their distribution and abundance should be monitored.

» Because Merrymeeting Bay drains nearly one third of Maine, the potential for water-quality degradation is high. Both the Androscoggin and Kennebec Rivers have major industries upriver. Although these industries are much cleaner than in years past, contamination remains in the bay's fine-grained sediments. Eagle eggs from Merrymeeting Bay have been found to contain some of the highest levels of PCBs ever recorded. Mitigating past and future contamination of the watershed will be a continuing challenge.

» At nearly 2,300 acres, the Pasture Ridge block is one of the largest unfragmented blocks in Phippsburg. Development of the interior may eliminate or diminish the quality of the pitch pine woodlands. In addition, pitch pine woodlands may require periodic fire or a similar disturbance. Use of fire as a conservation tool has not occurred in these areas, and it may be difficult because of the proximity to residential areas.

» In recent years, the use of personal watercraft has increased dramatically, including illegal use in some of the smaller creeks. Personal watercraft may have negative impacts on waterfowl and sensitive shoreline vegetation.

Public Access Opportunities

» Fort Popham
» Fort Baldwin
» Popham Beach State Park
» Reid State Park
» Earle Kelley (Dresden Bog) Wildlife Management Area
» Kennebec River Estuary Wildlife Management Area
» Merrymeeting Bay Wildlife Management Area
» Steve Powell (Swan Island) Wildlife Management Area

For more information about Focus Areas of Statewide Ecological Significance, including a list of Focus Areas and an explanation of selection criteria, visit **www.beginningwithhabitat.org**

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Saltmarsh Sharp-tailed Sparrow	*Ammodramus caudacutus*	SC	S3	G4
	Spotted Turtle	*Clemmys guttata*	T	S3	G5
	Bald Eagle	*Haliaeetus leucocephalus*	T	S4	G5
	Harlequin Duck	*Histrionicus histrionicus*	T	S2S3	G4
	Tidewater Mucket	*Leptodea ochracea*	T	S2	G3
	Roseate Tern	*Sterna dougallii*	E	S2	G4
	Arctic Tern	*Sterna paradisaea*	T	S2	G5
	Least Tern	*Sterna antillarum*	E	S1	G4
	Piping Plover	*Charadrius melodus*	E	S2	G3
	Atlantic Salmon	*Salmo salar*	E	n/a	n/a
	Redfin Pickerel	*Esox americanus*	E	n/a	n/a
	Short-nosed Sturgeon	*Acipenser brevirostrum*	E	n/a	n/a
	Ribbon Snake	*Thamnophis sauritus*	SC	S3	G5
Plants	Saltmarsh False-foxglove	*Agalinis maritima*	SC	S3	G5
	Large-purple False Foxglove	*Agalinis purpurea*	E	S1	G5
	Eaton's Bur-marigold	*Bidens eatonii*	SC	S2	G2G3
	Estuary Bur-marigold	*Bidens hyperborea*	SC	S3	G4
	Marsh Bulrush	*Bolboschoenus x novae-angliae*	E	S1	G5
	Long's Bitter-cress	*Cardamine longii*	T	S2	G3
	Dry Land Sedge	*Carex siccata*	SC	S2	G5
	Sweet Pepper-bush	*Clethra alnifolia*	SC	S2	G5
	Pygmyweed	*Crassula aquatica*	SC	S2S3	G5
	Tidal Spikerush	*Eleocharis aestuum*	SC	S2	G3
	Beaked Spikerush	*Eleocharis rostellata*	SC	S1	G5
	Parker's Pipewort	*Eriocaulon parkeri*	SC	S3	G3
	Long-leaved Bluet	*Houstonia longifolia var. longifolia*	SC	S2S3	G4G5
	Marsh-elder	*Iva frutescens ssp. oraria*	E	S1	G5
	Mountain-laurel	*Kalmia latifolia*	SC	S2	G5
	Lilaeopsis	*Lilaeopsis chinensis*	T	S2	G5
	Mudwort	*Limosella australis*	SC	S3	G4G5
	Dwarf Bulrush	*Lipocarpha micrantha*	T	S1	G5
	Estuary Monkeyflower	*Mimulus ringens var. colpophilus*	SC	S2	G5
	Smooth Sandwort	*Minuartia glabra*	SC	S3	G4
	Yellow Pond-lily	*Nuphar advena*	SC	S2	G5
	Clammy Azalea	*Rhododendron viscosum*	E	S1	G5
	Spongy Arrow-head	*Sagittaria calycina var. spongiosa*	SC	S3	G5
	Narrow-leaf Arrowhead	*Sagittaria filiformis*	SC	S2	G4G5
	Stiff Arrow-head	*Sagittaria rigida*	T	S2	G5
	Water Pimpernel	*Samolus valerandi ssp. parviflorus*	SC	S3	G5
	Small Salt-marsh Aster	*Symphyotrichum subulatum*	E	S1	G5
	Horned Pondweed	*Zannichellia palustris*	SC	S2	G5

Natural Communities	Alder Thicket	Alder Shrub Thicket	S5	G4G5
	Brackish Tidal Marsh	Brackish Tidal Marsh	S3	n/a
	Coastal Dune-marsh Ecosystem	Coastal Dune-marsh Ecosystem	S3	n/a
	Dune Grassland	Dune Grassland	S2	G4?
	Freshwater Tidal Marsh	Freshwater Tidal Marsh	S2	G4?
	Maritime Spruce–Fir Forest	Maritime Spruce–Fir Forest	S4	G4G5
	Mixed Saltmarsh	Mixed Graminoid–Forb Saltmarsh	S4	G5
	Pitch Pine Bog	Pitch Pine Bog	S2	G3G5
	Pitch Pine Dune Woodland	Pitch Pine Dune Woodland	S1	G2
	Pitch Pine Woodland	Pitch Pine Woodland	S3	G2
	Rose Maritime Shrubland	Rose–Bayberry Maritime Shrubland	S4	G4
	Salt-hay Saltmarsh	*Spartina* Saltmarsh	S3	G5
	Silver Maple Floodplain Forest	Silver Maple Floodplain Forest	S3	n/a
	Spruce–Pine Woodland	Red Spruce–Mixed Conifer Woodland	S4	G3G5
	Tidal Marsh Estuary Ecosystem	Tidal Marsh Estuary Ecosystem	S3	n/a
	White Oak–Red Oak Forest	White Oak–Red Oak Forest	S3	n/a

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.