Chapter VI: Wetland Component

Chapter Contents:

Introduction	**pg. 1**
Wetland Conservation Planning	**pg. 2**
Beginning with Habitat	**pg. 4**
Recreation Considerations	**pg. 6**
Recommendations	**pg. 7**
Works Cited	**pg. 9**

Chapter VI: WETLAND COMPONENT

Introduction

Maine has an abundance and diversity of wetlands unequalled in the Northeastern U.S. One quarter of the state's land area is wetlands, four times the wetland area of the other five New England States combined. Over five million acres of Maine's wetlands are freshwater types (wooded swamps, shrub swamps, bogs, freshwater meadows, freshwater marshes and floodplains), while only 157,500 acres are tidal types (tidal flats, salt marsh, brackish marsh, aquatic beds, beach bars and reefs).

According to Dahl (1990) between 1780 and 1980, an estimated 20% of Maine's wetlands were lost. Human endeavors like building and road development, dam and impoundment building, agriculture and timber harvesting, and other activities are prime contributors to these wetland losses.

Wetlands are valuable not only for their beauty and the recreation opportunities they support, but also for critically important functions they perform in our environment, including water storage, flood conveyance, groundwater recharge and discharge, shoreline erosion control and water quality improvement. They are the source of timber resources highly valuable to Maine's forest products industry, and perhaps most important, wetlands provide habitat vital to fish and wildlife, including many rare and endangered species.

The identification of important wetlands and their protection by regulation and acquisition has been ongoing for many years by government and private organizations. Since passage of the Emergency Wetlands Resources Act of 1986, State Comprehensive Outdoor Recreation Plans (SCORPs) have been required to address the acquisition of wetlands with stateside Land and Water Conservation Fund (LWCF) dollars. Specifically, federal SCORP guidelines require the inclusion of a wetlands priority component consistent with Section 303 of the Emergency Wetlands Resources Act of 1986. At a minimum this component must:

- *be consistent with the National Wetlands Priority Conservation Plan* (NWPCP) prepared by the US Fish and Wildlife Service;
- *provide evidence of consultation with the state agency responsible for fish and wildlife resources;*
- *and contain a listing of those wetland types that should receive priority for acquisition.*

Wetland Conservation Planning

The **Emergency Wetlands Resources Act of 1986** affirmed that both federal-side and stateside LWCF money could be used to acquire wetlands. It required the Secretary of the Interior to prepare a ***National Wetlands Priority Conservation Plan*** that would specify the types of wetlands and interests in wetlands that should be given priority for acquisition with LWCF dollars so that efforts would focus on the country's more important, scarce, and vulnerable wetlands. Federal agency wetland acquisitions with LWCF dollars (primarily by the US Fish and Wildlife Service) must be consistent with the plan, and wetland acquisitions by states with stateside LWCF dollars must be consistent with a SCORP that is consistent with the plan.

The NWPCP was prepared by the US Fish and Wildlife Service and published in 1989. To be eligible for purchase with LWCF dollars, a wetland must meet the following minimum criteria specified in the plan:

1. The wetland site must include predominantly (50% or more) wetland types that are rare or declining in an ecoregion.
2. The wetland must be threatened with loss or degradation. A site would be considered threatened if more than 10% of its values and functions are likely to be destroyed or adversely affected by direct, indirect, or cumulative impacts over the next 10 years considering the array of possible threats to the site and the level of threat afforded by existing regulations and owners' intentions. Obvious threats include draining and filling, building development, mining, transportation projects, vegetation removal, etc.
3. The wetland site must offer documented public values in at least two of the following areas: wildlife, commercial and sport fisheries, surface and groundwater quality and quantity and flood control, outdoor recreation, and other values, such as rare/unusual species or features, educational/research value, or historical/archaeological features.

The Maine Wetlands Conservation Priority Plan: An Addendum to the State Comprehensive Outdoor Recreation Plan (1988) was a joint effort of the Maine Bureau of Parks and Recreation, the Maine State Planning Office, and the Wetlands Subcommittee of the Land and Water Resources Council, which coordinated natural resources policy among state agencies. The Addendum affirmed the three primary criteria of the national plan and identified the following Maine LWCF wetland acquisition priorities based on these:

1. **rare or declining wetland types:**

- palustrine emergent (fresh marshes)
- estuarine intertidal (coastal marshes and mudflats)
- some palustrine forested wetland complexes in York County and southern coastal areas including Hemlock-Hardwood Pocket Swamps (Critically Imperiled) and Significant Vernal Pools as recently included in Significant Habitat designations.

- Wetlands supporting habitat for rare (S1-S3) natural community types (for details on S1-S3 natural community types, see **table 1 on page 8**).

2. **wetlands threatened with loss or degradation:**

- coastal marshes and undeveloped low-lying uplands in southern and mid-coast areas where population increases and second home construction is placing pressure on these areas and limited undeveloped lands remain for climate change induced inland migration of these wetland types;
- headwater streams, and seeps in the coastal plain;
- vernal pool complexes and small isolated habitat stepping stone wetlands in southern Maine that support rare herpetiles;
- large peatlands, if peat mining becomes prevalent in Maine;
- coastal intertidal areas in regions of high population growth;
- critical edge habitat in coastal and other wetlands; and

3. **high value and/or function wetlands, determined by on-site analysis.**

Under this criterion, the Addendum recommended particular attention to the following in Maine:

- high value and multi-value wetlands;
- habitats for rare and endangered plant and/or animal species;
- habitat for rare, threatened, and endangered plant and animals, and rare and exemplary natural communities in the state and for which there are inadequate representatives under protected status;
- exemplary occurrences of common wetland types that are not receiving adequate protection;
- habitats of state significance for fishery and wildlife resources, and that may satisfy the goals and guidelines of international treaties such as the North American Migratory Waterfowl Plan;
- wetlands with important hydrological functions of state or regional significance; and
- culturally significant wetlands, such as those with recreational or educational potential and those that can accommodate high visitor use.

The **1993 Maine SCORP** recommended additional wetland acquisition criteria for stateside LWCF dollars that would target important wetlands not emphasized by other protection programs. These additional criteria required that a wetland proposed for acquisition:

- offer public access, including access to associated surface water;
- be located near population centers or in areas with high rates of growth;
- be wetland types that are not priorities for protection through other programs;
- contain public values and benefits that cannot be maintained except through acquisition, especially to gain access;
- be wetlands of local importance because they have been identified as a protection priority in local comprehensive, open space, or recreation plans; or because they provide public access to locally important outdoor recreation opportunities; or are key in protecting locally important habitat; and

- provide opportunities for nature education for a variety of age groups.

Beginning with Habitat

Beginning with Habitat is a habitat-based landscape approach to assessing wildlife and plant conservation needs and opportunities. The goal of the program is to maintain sufficient habitat to support all native plant and animal species currently breeding in Maine by providing each Maine town with a collection of maps and accompanying information depicting and describing various habitats of statewide and national significance found in the town. This data is coupled with suggestions for tools that can be implemented at the local level to advance local and regional conservation planning that better balances future growth with a functional network of habitat types capable of maintain ecological services over the long term. The program is a cooperative effort of the Maine Department of Inland Fisheries and Wildlife, Maine Department of Conservation Natural Areas Program, Maine Audubon Society, Maine State Planning Office, United States Fish and Wildlife Service, Maine Cooperative Fish and Wildlife Research Unit, Southern Maine Regional Planning Commission, and Wells National Estuarine Research Reserve.

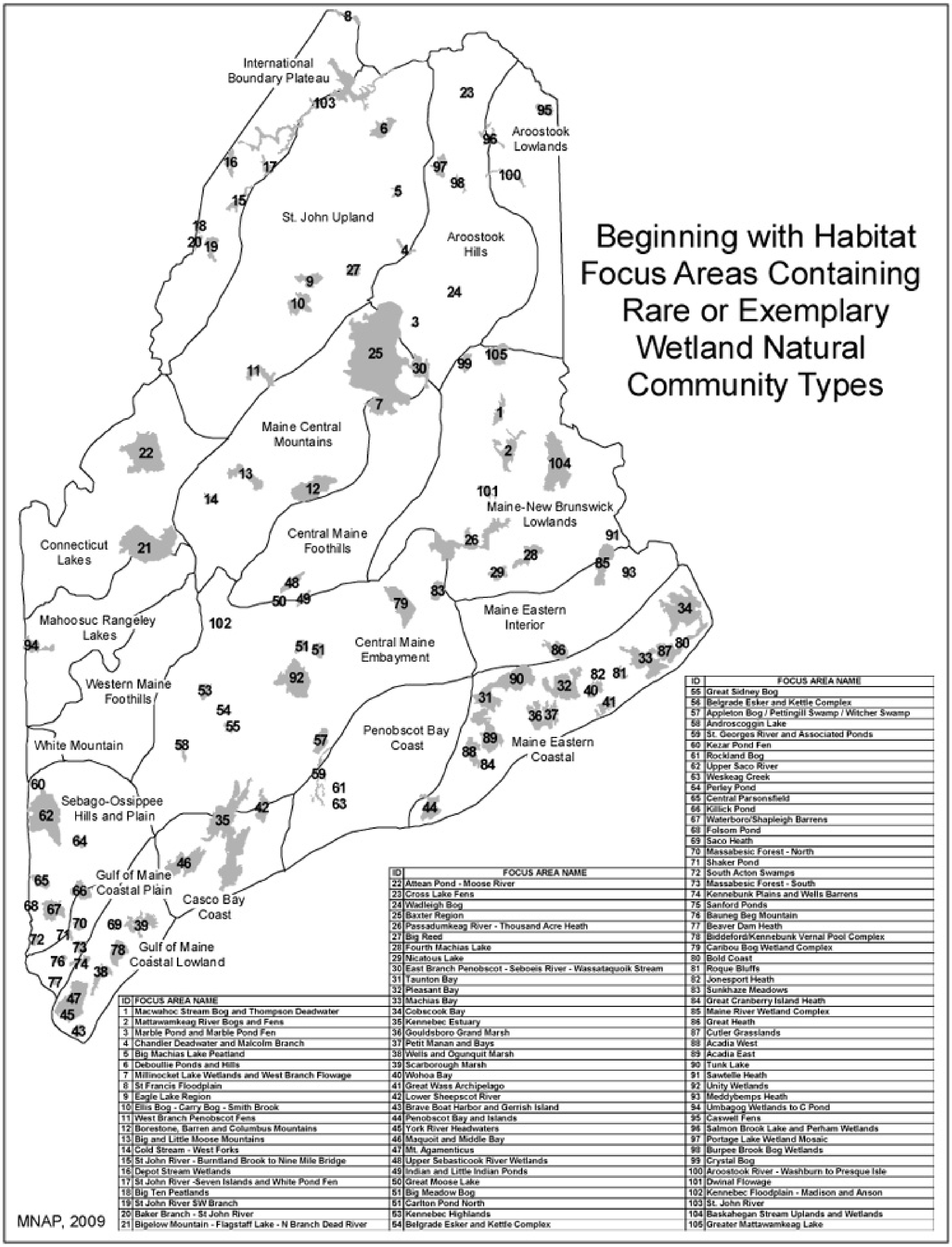
After reviewing high value plant and animal habitats – of which wetlands are key components - and undeveloped habitat blocks, biologists from the Maine Department of Conservation Natural Areas Program and Department of Inland Fisheries and Wildlife identified landscape-scale areas meriting special conservation attention - including acquisition. These Focus Areas of Statewide Ecological Significance are built around the locations of rare plants, animals, and natural communities, high quality common natural communities, significant wildlife habitats, and their intersection with large blocks of undeveloped habitat, and are designed to bring attention to areas with concentrations plant and animal habitats values. The important habitat resources identified in a community are recommended as a foundation for resource protection and open space planning that may be part of town comprehensive planning and local land trust conservation efforts. *Beginning with Habitat* Focus Areas of Statewide Ecological Significance are recommended as targets for additional protection efforts by towns, local land trusts and other agencies and organizations.

Beginning with Habitat Focus Areas of Statewide Ecological Significance, including important wetlands, have been designated statewide. **Figure 1 (pg. 5)** and **Table 1 (pages 8)** show focus areas of statewide significance with rare or exemplary wetland natural community types. **Table 3 (page 10)** lists Beginning with Habitat Focus Areas of Statewide Ecological Significance by county.

Current Wetland Acquisition in Maine

Current wetland acquisition in Maine is driven largely by the program objectives of agencies and organizations concerned with fish, wildlife, and plant habitats rather than by a single overarching wetland protection strategy, and wetlands high in habitat values account for much of the wetland acreage that has been acquired for protection in Maine.

Figure 1: Beginning with Habitat Focus Areas with Rare or Exemplary Wetland Types (Source: Maine Natural Areas Program, 2009)



The principal funding programs for acquisition of wetlands in Maine are listed in **Table 2.**

Table 2: Wetland Acquisition Funding Programs in Maine
Federal Programs
Focus on Fish & Wildlife Habitat
North American Waterfowl Management Plan Grants
National Coastal Wetlands Conservation Grants
Land and Water Conservation Fund (Federal-Side)
Migratory Bird Hunting Stamp Funds
US Fish and Wildlife Service Challenge Grants
Partnerships for Wildlife
Casco Bay Land Opportunity Fund
National Fish and Wildlife Foundation Grants
Gulf of Maine Council on the Marine Environment Mini-Grants
Focus on Forests
US Forest Service's Forest Legacy Program
Focus on Farmlands, Soil and Water Conservation
Farmland Protection Program
Wetland Reserve Program (WRP)
Environmental Quality Incentives Program (EQUIP)
Wildlife Habitat Incentives Program (WHIP)
State Programs
Land for Maine's Future
Maine Outdoor Heritage Fund
Land and Water Conservation Fund (Stateside)

The U.S. Fish and Wildlife Service's Gulf of Maine Program, the Maine Dept. of Inland Fisheries and Wildlife, The Nature Conservancy--Maine Chapter, Maine Coast Heritage Trust, the Land for Maine's Future Program, Ducks Unlimited, The Trust for Public Land, local land trusts, and landowners come together periodically as the **Maine Wetland Protection Coalition** to identify protection priorities and coordinate large grant application efforts that result in important wetland acquisitions. The Maine Wetland Protection Coalition's goal is to permanently protect high value wetland habitat in Maine. Winter and Fefer (2007) outline the coalition's approach below:

- Prioritize statewide wetland protection projects based on habitat data, willing landowners, and grant requirements;
- Coordinate potential wetland protection projects with all conservation partners to avoid unproductive competition and maximize its use of staff time and funding sources;
- Identify projects where the expertise of Coalition members can support local partners in developing and implementing well-conceived and nationally competitive grants;
- Conduct outreach to ensure strong support for wetland conservation projects in Maine and nationally; and
- Ensure that projects are coordinated with the Maine Department of Inland Fisheries and Wildlife, the lead Coalition agency, and other appropriate partners.

Recreation Considerations

Each State Comprehensive Outdoor Recreation Plan is required to consider outdoor recreation opportunities associated with its wetlands resources for meeting the State's public outdoor recreation needs. In this regard, it is worth highlighting a few key services and opportunities provided by wetlands.

- Wetlands play a key habitat role in relation to recreational hunting and fishing (according to the 2006 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation,* produced by the United States Fish & Wildlife Service, there are a combined 366,000 resident hunters/anglers in Maine).
- Wetlands, as mentioned above, have vital wildlife habitat functions. As such, they are also natural sites for wildlife watching and photography. Developing additional wildlife watching facilities, including interpretive elements exploring the natural history of wetlands, should be a considered a recreation goal associated with wetlands. This is especially noteworthy due to the strong growth in the participation levels for wildlife watching activities.
- Some wetlands, such as Maine's peat bogs, are nationally unique environments and, when properly managed, can add to the overall diversity of landscapes residents and visitors alike can explore and enjoy.

Recommendations

There are a number of reports and planning efforts associated with wetlands, both nationally and in Maine. However, Beginning with Habitat (BwH) has become a leading force in the identification of focus areas for conservation, including wetlands, and may be best positioned to guide any potential wetland acquisitions associated with LWCF funds. Given BwH's planning role regarding both wetlands of statewide significance and wetlands with more local (community) importance, it is recommended that BwH guidance, especially in the form of focus areas identified as having rare or exemplary wetland natural community types (see Figure 1), take priority for wetland acquisition.

Qualification Note: NWPCP Standards

As mentioned before, the following conditions (1-3) must be met to use the Land and Water Conservation Fund to purchase wetlands. Listed below each condition are details indicating wetland characteristics and/or locations meeting the condition.

1. **rare or declining wetland types:**
- Wetlands supporting habitat for rare (S1-S3) natural community types

1. **wetlands threatened with loss or degradation:**
- coastal marshes and undeveloped low-lying uplands in southern and mid-coast areas where population increases and second home construction is placing pressure on these areas and limited undeveloped lands remain for climate change induced inland migration of these wetland types;
- headwater streams, and seeps in the coastal plain;
- vernal pool complexes and small isolated habitat stepping stone wetlands in southern Maine that support rare herpetiles;
- large peatlands, if peat mining becomes prevalent in Maine;
- coastal intertidal areas in regions of high population growth;
- critical edge habitat in coastal and other wetlands; and

2. **high value and/or function wetlands, determined by on-site analysis.**

particular attention should be given to the following in Maine:

- high value and multi-value wetlands;
- habitats for rare and endangered plant and/or animal species;
- habitat for rare, threatened, and endangered plant and animals, and rare and exemplary natural communities in the state and for which there are inadequate representatives under protected status;
- exemplary occurrences of common wetland types that are not receiving adequate protection;
- habitats of state significance for fishery and wildlife resources, and that may satisfy the goals and guidelines of international treaties such as the North American Migratory Waterfowl Plan;
- wetlands with important hydrological functions of state or regional significance; and
- Recreationally and/or culturally significant wetlands, such as those with educational potential, scenic attributes, hunting and fishing values, and those that can sustainably accommodate high visitor use.

Note: Wetland acquisitions should also include an adequate upland buffer to ensure off-site impacts to wetlands are minimized.

Table 1: Maine Natural Areas Program Rare and Exemplary Wetland Natural Community Types in Maine

- S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- 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 (20-100 occurrences).
- S4 Apparently secure in Maine.
- S5 Demonstrably secure in Maine.

Alder Floodplain	S4
Bog Moss Lawn	S4
Bulrush Bed	S4
Cedar - Spruce Seepage Forest	S4
Mixed Graminoid - Forb Saltmarsh	S4
Mixed Tall Sedge Fen	S4
Mountain Holly - Alder Woodland Fen	S4
Northern White Cedar Swamp	S4
Northern White Cedar Woodland Fen	S4
Red Maple - Sensitive Fern Swamp	S4
Red Maple Wooded Fen	S4
Sheep Laurel Dwarf Shrub Bog	S4
Spruce - Fir - Cinnamon Fern Forest	S4
Spruce - Larch Wooded Bog	S4

Table 1: Maine Natural Areas Program Rare and Exemplary Wetland Natural Community Types in Maine (Continued)

Sweetgale Mixed Shrub Fen	S4
Tussock Sedge Meadow	S4
Alder Shrub Thicket	S5
Cattail Marsh	S5
Mixed Graminoid - Shrub Marsh	S5
Pickerelweed - Macrophyte Aquatic Bed	S5
Pipewort - Water Lobelia Aquatic Bed	S5
Water-lily - Macrophyte Aquatic Bed	S5

Works Cited

Dahl, Thomas E., (1990). Wetlands losses in the United States 1780's to 1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C., http://www.npwrc.usgs.gov/resource/othrdata/wetloss/wetloss.htm (Version 16JUL97).

Maine Wetlands Priority Conservation Plan, An Addendum to the State Comprehensive Outdoor Recreation Plan, Widdoff, Lissa, Maine Bureau of Parks and Recreation; Maine State Planning Office; Wetlands Subcommittee, Land and Water Resources Council; July, 1988.

National Wetlands Priority Conservation Plan, US Department of the Interior, Fish and Wildlife Service, 6/91 Edition.

U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.*

Winter, Lois, and Stewart Fefer (2007). Protecting Maine's Wetlands: Linking Maine's Past with Its Future. National Wetlands Newsletter, vol. 29, no. 6. Environmental Law Institute. Washington, DC.

Table 3: Beginning with Habitat Focus Areas of Statewide Ecological Significance

Androscoggin	Androscoggin Lake
Aroostook	Aroostook River - Washburn to Presque Isle
Aroostook	Big Machias Lake Peatland
Aroostook	Black Brook - Birch River Headwaters
Aroostook	Burpee Brook Bog Wetlands
Aroostook	Caswell Fens
Aroostook	Chandler Deadwater and Malcolm Branch
Aroostook	Cross Lake Fens
Aroostook	Crystal Bog
Aroostook	Deboullie Ponds and Hills
Aroostook	Depot Stream Wetlands
Aroostook	Greater Mattawamkeag Lake
Aroostook	Macwahoc Stream Bog and Thompson Deadwater
Aroostook	Mattawamkeag River Bogs and Fens
Aroostook	Portage Lake Wetland Mosaic
Aroostook	Salmon Brook Lake and Perham Wetlands
Aroostook	Squa Pan Mountain
Aroostook	St. Francis Floodplain
Aroostook	St. John River
Aroostook	St. John River - Burntland Brook to Nine Mile Bridge
Aroostook	St. John River - Seven Islands and White Pond Fen
Aroostook	Wadleigh Bog
Cumberland	Holt Pond
Cumberland	Jugtown Plains
Cumberland	Kennebec Estuary
Cumberland	Maquoit and Middle Bay
Cumberland	Otter Pond
Cumberland	Perley Pond
Cumberland	Scarborough Marsh
Cumberland	Upper Saco River
Franklin	Bigelow Mountain - Flagstaff Lake - North Branch Dead River
Franklin	Kennebec Highlands
Franklin	Mount Abraham - Saddleback - Crocker Mountains
Franklin	Tumbledown Mountain to Mount Blue
Hancock	Acadia East and West
Hancock	Bagaduce River
Hancock	Bald Bluff Mountain
Hancock	Fourth Machias Lake
Hancock	Gouldsboro Grand Marsh
Hancock	Great Cranberry Island Heath
Hancock	Nicatous Lake
Hancock	Passadumkeag River - Thousand Acre Heath
Hancock	Penobscot Bay and Islands
Hancock	Schoodic Peninsula
Hancock	Taunton Bay
Hancock	Tunk Lake

Hancock	Upper Union River
Kennebec	Androscoggin Lake
Kennebec	Belgrade Esker and Kettle Complex
Kennebec	Cobbossee - Annabessacook South
Kennebec	Great Sidney Bog
Kennebec	Kennebec Estuary
Kennebec	Kennebec Highlands
Kennebec	Kennebec River at Sidney-Vassalboro
Kennebec	Messalonskee Lake Marsh
Kennebec	Spectacle - Tolman Ponds
Kennebec	Unity Wetlands
Knox	Appleton Bog - Pettingill Stream - Witcher Swamp
Knox	Camden Hills
Knox	Lower St. George River
Knox	Penobscot Bay and Islands
Knox	Ragged Mountain - Bald Mountain
Knox	Rockland Bog
Knox	St. George River and Associated Ponds
Knox	Upper Sheepscot River
Knox	Weskeag Creek
Lincoln	Kennebec Estuary
Lincoln	Lower Sheepscot River
Lincoln	Salt Bay
Lincoln	St. Georges River and Associated Ponds
Lincoln	Upper Sheepscot River
Oxford	Ellis River
Oxford	Jugtown Plains
Oxford	Kezar Pond Fen
Oxford	Mahoosucs
Oxford	Porter Hills
Oxford	Twin Peaks Region
Oxford	Umbagog Wetlands to C Pond
Oxford	Upper Saco River
Oxford	White Mountains
Oxford	Whitecap Mountain - Rumford
Penobscot	Caribou Bog Wetland Complex
Penobscot	Carlton Pond North
Penobscot	Indian and Little Indian Ponds
Penobscot	Sunkhaze Meadows
Piscataquis	Baxter Region
Piscataquis	Big and Little Moose Mountains
Piscataquis	Big Reed
Piscataquis	Borestone, Barren and Columbus Mountains
Piscataquis	Eagle Lake Region
Piscataquis	Ellis Bog - Carry Bog - Smith Brook
Piscataquis	Millinocket Lake Wetlands and West Branch Flowage
Piscataquis	Nahmakanta Lake
Piscataquis	West Branch Penobscot Fens
Sagadahoc	Kennebec Estuary
Somerset	Attean Pond - Moose River
Somerset	Baker Branch - St. John River

Somerset	Bald Mountain
Somerset	Big and Little Moose Mountains
Somerset	Big Meadow Bog
Somerset	Big Ten Peatlands
Somerset	Bigelow Mountain - Flagstaff Lake - North Branch Dead River
Somerset	Carlton Pond North
Somerset	Cold Stream - West Forks
Somerset	Douglas Pond and Madawaska Bog
Somerset	Great Moose Lake
Somerset	Green Mountain
Somerset	Indian and Little Indian Ponds
Somerset	Kennebec Floodplain - Madison and Anson
Somerset	St. John River Southwest Branch
Somerset	Upper Sebasticook River Wetlands
Somerset	West Branch Penobscot Fens
Waldo	Appleton Bog - Pettingill Stream - Witcher Swamp
Waldo	Big Meadow Bog
Waldo	Camden Hills
Waldo	Carlton Pond North
Waldo	Unity Wetlands
Waldo	Upper Sheepscot River
Washington	Baskahegan Stream Uplands and Wetlands
Washington	Bog Brook Flowage
Washington	Bold Coast
Washington	Cobscook Bay
Washington	Cutler Grasslands
Washington	Englishman Bay
Washington	Fourth Machias Lake
Washington	Gouldsboro Grand Marsh
Washington	Great Heath
Washington	Great Wass Archipelago
Washington	Jonesport Heaths
Washington	Machias Bay
Washington	Maine River Wetland Complex
Washington	Meddybemps Heath
Washington	Nash Islands
Washington	Orange River
Washington	Petit Manan Point and Bays
Washington	Pleasant Bay
Washington	Roque Bluffs
Washington	Sawtelle Heath
Washington	Tunk Lake
Washington	Wahoa Bay
York	Bauneg Beg Mountain
York	Beaver Dam Heath
York	Biddeford / Kennebunkport Vernal Pool Complex
York	Brave Boat Harbor and Gerrish Island
York	Central Parsonsfield
York	Folsom Pond
York	Kennebunk Plains and Wells Barrens
York	Killick Pond
York	Massabesic Forest North
York	Massabesic Forest South

York	Mt. Agamenticus
York	Saco Heath
York	Sanford Ponds
York	Scarborough Marsh
York	Shaker Pond
York	South Acton Swamps
York	Walnut Hill
York	Waterboro / Shapeleigh Barrens
York	Wells / Ogunquit Marshes Marsh
York	York River Headwaters