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Protecting Maine's Wetlands: Linking Maine's Past with its Future

By Lois Winter and Stewart Fefer

As with so many other parts of the country, habitat fragmentation, human disturbance, polluted runoff, sedimentation, and invasive species threaten Maine's wetlands. The Maine Wetlands Protection Coalition, a loosely knit group of federal, state, and nongovernmental conservation groups, has been actively striving to protect these valuable resources.

For those of us committed to wetland protection, the statistics, facts, and figures on wetlands losses give us compelling reasons to go to work every day. Since colonial times, over half of the wetlands in the lower 48 states have been lost to development. Nationwide, only 100 million acres of wetlands remain, and wetlands continue to be lost at a staggering rate of about 60,000 acres annually.

The story in Maine is consistent with national trends: the federal Clean Water Act and Maine's Natural Resources Protection Act have reduced the rate of wetland loss, but wetlands are still disappearing. Like other places of the country, Maine has a strong stake in protecting its remaining wetlands. Wetlands purify our drinking water, save our homes from floods, help buffer our coasts from rising sea levels, provide great recreational opportunities, preserve the traditional character of our communities, and protect important plant, fish, and wildlife habitat—including habitat for countless waterbirds and 46 rare wetland-dependent species. According to the Clean Water Network, Maine's remaining wetlands have an estimated economic value of $31 billion.

When the U.S. Fish and Wildlife Service's (FWS') Gulf of Maine Coastal Program was established in late 1991, wetland and development trends in Maine were already well known. Of Maine's estimated original 6.5 million acres of wetlands, about 5 million acres remained by the mid-1980s—a net loss of 20%. From 1970-1990, the Maine State Planning Office documented that as much land had been developed in Maine as had been developed in the entire history of the state up to that time, consuming land four times faster than population growth. Those trends continue today, with land gobbled up by development projected to double by 2010. The rate of land development is troubling for those of us committed to protecting remaining wetlands because when residential and commercial development increase, negative impacts to the biological integrity of Maine's wetlands generally intensify.

Today, Maine's remaining wetlands continue to be threatened by habitat fragmentation, human disturbance, polluted runoff, sedimentation, and invasive species. As human development continues to sprawl across Maine, remaining wetlands will continue to be lost or degraded, thereby reducing water quality and water storage capacity, destroying long-valued recreational opportunities for residents and visitors, disrupting the character of our communities, decreasing the biological vitality of important habitat, and reducing populations of many species—from waterbirds to songbirds to fish.

Changes in public awareness and attitude, along with multifaceted policy changes, will be needed to stem the tide of poorly controlled land use practices. In the meantime, the Maine Wetlands Protection Coalition, a loosely knit group of federal, state, and nongovernmental conservation groups, has been actively striving to protect the "best of Maine's wetlands" from development.

The Maine Wetlands Protection Coalition

The Coalition was established in 1989 to implement wetland conservation priorities of the North American Waterfowl Management Plan, tapping into federal funds provided by the North American Wetlands Conservation Act (NAWCA). Over time, the Coalition's purpose has evolved and expanded to maximize the permanent protection of high value wetlands and associated upland buffer. It places particular emphasis on projects that can compete successfully for NAWCA grants, National Coastal Wetland Conservation Grants, and most recently, Coastal Estuarine Land Conservation Protection grants. The Coalition also taps into state land protection grant programs and private philanthropic funds, which provide required matching funds for the federal grants.

Maine Wetland Protection Coalition members work cooperatively and synergistically, capitalizing on the skills of conservation biologists and land protection specialists from multiple federal, state, and private conservation organizations so that together they can accomplish more than any of their organizations could achieve independently. Coalition members meet a minimum of three times a year to strategize and accommodate planning for upcoming grants and to work with local and regional partners to oversee grant

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This coastal wetland protection project in Pleasant Bay was funded with Large NAWCA funds. Photo courtesy of Lois Winter, U.S. FWS.

This coastal salt marsh protection project at Reachwood Peninsula was funded with Small NAWCA funds. Photo courtesy of Lois Winter, U.S. FWS.

implementation. Coalition members also work in close coordination with the staff of the FWS Regional Migratory Bird Division and the Division of Federal Aid, who frequently provide invaluable strategic advice and support.

The Coalition's goal is to permanently protect as much high value wetland habitat in Maine as possible. To achieve its goal, the Coalition:

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

Our Accomplishments

Funding

Since its inception, Coalition members, working in coordination with willing landowners and local land trusts, have been instrumental in raising funds to protect nearly 1.5 million acres of important wetlands and upland buffer in Maine. The chart below summarizes the accomplishments.

Maine still has a great deal of relatively intact wetland and upland buffer habitat, but most is not publicly owned or permanently protected. Members of the Maine Wetland Protection Coalition continue to work with willing landowners and tap into available funding to save the highest value habitat and protect Maine's natural resource heritage.

Technical Expertise

The Gulf of Maine Coastal Program introduced biologically based geographic information system (GIS) analytical work to the Coalition in the early 1990s as a tool to help identify and prioritize highest value wetlands and upland buffer for permanent protection. GIS maps created by the Gulf of Maine Coastal Program used habitat suitability models in combination with existing site survey data to identify high value habitat for rare, threatened, endangered, and declining migratory birds (especially waterbirds) and searun fish. The GIS data, later supplemented with additional biological data from the Maine Department of Inland Fisheries and Wildlife

Funding to Protect Maine's Wetlands

Federal Grant	Number of Projects	Federal Grant Funds	Other Federal Funds	Nonfederal Funds	Acres Permanently Protected
Large NAWCA	14	$11.75 M	$26.45 M	$91.06 M	1,455,464
Small NAWCA	26	$2.25 M		$9.76 M	16,728
National Coastal Wetland Grants	12	$4.66 M		$2.65 M	2,896
Total	52	$17.65 M	$26.45 M	$103.47 M	1,475,088

The island protection project at the Hog Island Mudflats was funded with Coastal Wetland Grant funds. Photo courtesy of Lois Winter, U.S. FWS.

and the Maine Natural Areas Program, offered critical information that could be displayed in readily viewable maps. This information facilitated the Coalition's collective ability to identify, evaluate, protect, and manage high value wetland and upland buffer habitats.

All Coalition partners play a critical role in putting the GIS analyses to work. By locating existing conservation lands, tapping into local knowledge of natural resource values, and identifying unprotected parcels of high value habitat where landowners express interest in selling or donating lands for conservation, land trust partners and state wildlife biologists are able to establish a clear path for focusing habitat protection work. Land trust staff and volunteers provide expertise in land protection options and processes, skillfully crafting and negotiating, one landowner at a time, land protection strategies that achieve our common interest in protecting high value wetlands—often, at a landscape scale.

Land Protection

Some of the special places the Coalition has focused on protecting to date include:

- Cobscook Bay, near the Maine-Canada border, home to twice-daily tides averaging 24 feet, large numbers of nesting and wintering bald eagles, internationally important populations of migratory shorebirds and waterfowl, and large concentrations of wintering black ducks.
- Greater Pleasant Bay, in downeast Maine, also exhibits a large tidal range and has scores of nesting and wintering bald eagles, internationally important populations of migratory shorebirds and waterfowl, wintering black ducks, and dozens of high value nesting seabird islands.
- Lower Kennebec Estuary, where the freshwater tidal wetlands of Merrymeeting Bay (which attract all varieties of migratory waterbirds) meet the expansive salt marshes of the Lower Kennebec (which attract wintering waterfowl), supports nesting and wintering bald eagles and all 12 species of Maine's searun fish.
- York River, an amazingly pristine, expansive, and wildlife-rich salt marsh, protects waterbirds and searun fish amidst the rapidly expanding footprint of human development in southern Maine.
- Landscape-scale Northern Forest projects, with major concentrations of freshwater wetlands and upland buffer that support breeding loons, black ducks, bald eagles, and many species of neotropical migrants.

Land protection projects supported by the Maine Wetland Protection Coalition have ranged in size from 17 to 762,202 acres. Small parcels can be just as important as the big ones. Small parcels often provide critical habitat for species of management concern and also engender enthusiastic community-based support for well-loved places. Saving small places helps protect the cultural heritage of a community, reminds people of the importance of protecting natural areas, offers places for public access and local recreation, and maintains the hope and enthusiasm that can catalyze larger efforts. On the opposite end of the spectrum, large landscape-scale habitat protection initiatives with multi-national corporations demonstrate the willingness to establish and maintain sustainable land use practices for the long term. These efforts provide an antidote to the increasingly ominous trend of those who choose the short-term lucrative path of subdividing their property to build second homes and resort developments, which often leads to large-scale habitat loss, fragmentation, and elimination of public access for recreation. Landscape-scale habitat projects in Maine's Northern Forest can help protect substantial breeding habitat for populations of neotropical migrants and waterfowl that require large swaths of intact habitat to maintain their populations.

Some of the largest wetland protection projects, in terms of size alone, have been in interior Maine. But the Maine Wetlands Protection Coalition has focused most of its efforts on protecting coastal wetlands, where increased residential and commercial development is imminent and severe and where migratory and wintering waterbirds, endangered species, and searun fish concentrate. From 1990 to 2000, Maine's population increased in all but one coastal county by 9% to 13.5%. Maine's population change over the same time period in the inland counties ranged from a 4% increase to a 15% loss. The pressure on Maine's coastal wetlands is even more apparent when viewed through the lens of acreage; Maine's coastal wetlands are concentrated on only 150,000 acres, while Maine's freshwater wetlands cover five million acres.

Conclusion

The Coalition has worked together for nearly two decades by forging personal relationships of trust that recognize a shared passion and commitment to wetland protection. Working together, the Coalition has accomplished what none of their organizations could have achieved alone. The skill sets listed below, interspersed amongst all Coalition partners, continue to provide the raw ingredients needed to submit compelling grant proposals, allowing the Coalition to successfully compete for limited FWS funds:

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Conclusion

Although large tracts of uplands and wetlands have been permanently protected through public and private ownership in South Carolina, the coastal landscape remains vulnerable to alteration from a rapidly increasing human population. The Coastal Program in South Carolina will continue to work cooperatively through public-private partnerships to adapt innovative landscape-scale solutions to a dynamic coastal environment. The challenge is to protect and restore South Carolina's coastal ecosystems while accommodating the inevitable growth of our coastal communities. ■

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- expertise in GIS and habitat mapping and analysis;
- knowledge of conservation biology and coastal Maine ecology;
- strategic understanding of federal and other grant program requirements;
- practical experience working "on-the-ground" with landowners on land protection options;
- grant-writing skills;
- capacity to raise required non-federal matching funds and provide bridge loans;
- capability to effectively manage and steward protected lands; and
- outreach skills needed to promote land protection success stories.

By integrating their members' collective strengths, and by retaining a flexible, non-regulatory, and voluntary approach, the Coalition has demonstrated its effectiveness in working with people who want to work together to permanently protect thousands and thousands of acres of important habitat. In the broadest sense, Coalition members view all of the wetland and upland buffer protection projects—whether large or small, inland or coastal—as part of an integrated and comprehensive effort to ensure that Maine's high value wetland habitat remains intact, providing safe haven for endangered species, searun fish, and waterbirds as well as open space with natural resource values for all of us—for now and forever. ■

Maine Wetland Protection Coalition Partners

Maine Dept. of Inland Fisheries and Wildlife
U.S. FWS, Gulf of Maine Coastal Program
Maine Coast Heritage Trust
The Nature Conservancy (Maine Chapter)
Trust for Public Lands
Ducks Unlimited, Inc.

A Living Shoreline Initiative, *continued from page 11*

available to build more greenhouses at high schools to provide more plants and offer local career opportunities. Plant production in school yards through the Grasses in Classes program is another terrific solution that will provide plants and planting labor, with the added benefit of educating people of all ages in the community about the role they can play in restoration. The FPCP has provided funding to the West Florida Regional Planning Council to establish Grasses in Classes in at least one school in each coastal county. Community involvement plays an important role in these projects. We also envision a certification process for nursery owners to supply appropriate native species.

Initiative partners also plan to coordinate regularly on the inventory of all eroding shorelines in the Panhandle. This includes developing survey methods, determining which restoration profile would work best for each area, and deciding upon the highest priority areas in need of living shoreline protection so that technical assistance and funding can be directed appropriately. The state of Virginia is doing this now, with the ultimate goal of having a web portal through which data on potential erosion conditions and pre-determined methods for best protection for any shoreline segment are just a click away—a very useful tool for property owners and contractors.

We also plan to host regular living shoreline summits for scientists, regulatory agencies, contractors, engineers, policymakers, educators, and other professionals to encourage communication and information exchange.

Conclusion

Hardening the shoreline with fixed structures to "hold the line" is the most common technique used to combat coastal erosion. Ironically, this often increases erosion. It also prevents the shoreline from functioning naturally and destroys established habitat for many species. Hardening can create a bathtub effect where the gradual sloping transition from water to land is transformed into right angles.

Conversely, living shorelines create nursery and foraging habitat, enhance natural processes, and improve water quality. With our 2,300 miles of irreplaceable tidal coastline, Floridians can help turn the tide. The Living Shoreline Initiative can help restore our bays and streams by producing and implementing a living shoreline cookbook, providing property owners with an effective and ecologically sound alternative to coastal armoring. We want to make it as easy as possible for people to make that choice and put living shorelines into action. ■

Living Shoreline Resources

National Resource Council. 2007. Mitigating shore erosion along sheltered coasts. National Academies Press, Washington, D.C., *available at* http://www.nap.edu/catalog.php?record_id=11764.

NOAA Restoration Portal, *at* http://habitat.noaa.gov/restorationtechniques/public/shoreline_tab1.cfm.

Maryland Shorelines Online, *at* http://shorelines.dnr.state.md.us/living.asp.

Douglass, S.L. and B.H. Pickel, The Tide Doesn't Go Out Anymore—The Effect of Bulkheads on Urban Bay Shorelines, *at* http://www.southalabama.edu/cesrp/Tide.htm.