

Times

Gulf of Maine

Promoting Cooperation to Maintain and Enhance Environmental Quality in the Gulf of Maine

Ecotourism: treading lightly in the Gulf

Gulf of Maine — Not all of us dream of spending our precious vacation days combing an ankle-deep mud flat for sand worms — and paying for the privilege. But organizers of trips that send people to work alongside environmental researchers and scientists say volunteer travel and other forms of “ecotourism” are increasingly popular worldwide, including in the Gulf of Maine.

Ecotourism, also called ecotravel, describes outdoor-oriented travel, incorporating environmental education, conservation, or natural history components, that benefits — or at least does no harm to — the destination’s natural, cultural, or economic environment.

Depending on who you ask, ecotravel can cover everything from a wilderness camping experience to a bus trip to a bird

sanctuary. “Ecotrips” can constitute a week and a half spent on a remote Maine lake monitoring loons with field scientists, an afternoon nature walk, or an extended canoe trip with chef-staffed campsites set up for weary travelers by the outfitter’s advance teams.

Even the cruise ship industry is marketing itself as an increasingly environmentally aware travel option, according to Randy Brooks, Canadian Co-Chair of the New Atlantic Frontier Association (NAFA), an association of ports from New York to Montreal.

Of the 60 ships coming into NAFA ports, about a third have naturalists on board, said Brooks. Also, he said, cruise ship companies operating in the Gulf of Maine are using “greener” practices in response to public sentiment, increased

environmental awareness, and tighter US and Canadian regulation.

Blue Magruder, Director of Public Affairs for the Earthwatch Institute, based in Watertown, Massachusetts, credits her organization with creating the movement “where people want to be involved as not just a tourist, but want to be part of something real.” Earthwatch volunteers don’t visit places passively, but work in the field with scientists and help them gather and record information on wildlife or other species.

The group annually sends about 4,000 volunteers from dozens of countries to work with scientists all over world including in the Gulf of Maine. “When I started 20 years ago, there were 300 volunteers a year. It was very radical to find people who would pay to work,”

Magruder said.

Earthwatch may be the most established organizer of environmentally oriented trips, but considers itself an educational, rather than an ecotourism organization, Magruder said. “We’re supporting scientific research, but people are getting the best possible education they can get,” she explained.

The nature of responsible travel

So, what is ecotourism? “The main thing is that it is not just nature tourism — it’s responsible travel,” said Megan

ECOTOURISM
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Pipeline routes prompt concern about habitat

Gulf of Maine — Even as they welcome the new supply of cleaner fuel that natural gas developers hope to market to the region, communities and environmental agencies throughout the Gulf are seeking assurances that the environmental effects of the proposed pipelines will be kept in check.

Maritimes & Northeast Pipeline Project (M&N) and North Atlantic Pipeline Project (NAPP) are vying for approval to transport the gas being developed by the Sable Offshore Energy Project to markets in Atlantic Canada and New England. Although more than one company can receive permits to distribute the gas, the first to do so is in the advantageous position of cornering certain markets.

In December, Canada’s National Energy Board (NEB) shelved consideration of a third proposal, the Trans Maritimes Pipeline Project, at the

PIPELINE
Continued on Page 8

Photo: The Outdoor Adventure Co.



Travelers are increasingly seeking outdoor vacations that combine recreation with environmental education. On this trip, kayakers skimmed the Bay of Fundy near Saint John, New Brunswick, getting a close look at the marine environment.

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Council on the
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The Gulf of Maine Council on the Marine Environment was established in 1989 by the governments of Nova Scotia, New Brunswick, Maine, New Hampshire, and Massachusetts to foster cooperative actions within the Gulf watershed. Its mission is to maintain and enhance environmental quality in the Gulf of Maine to allow for sustainable resource use by existing and future generations.

Visit the Gulf of Maine Council on the Marine Environment's web site at:
<http://gulfofmaine.org>

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Gulfwatch program Prying information out of the common mussel

Jeffrey Taylor
*Director, New Hampshire
Office of State Planning*



The International Year of the Ocean encourages us to reflect on the many reasons for understanding and appreciating the earth's oceans, but the fact that many of our livelihoods are sustained by the marine environment seems reason enough to study it. The Gulf's importance as a resource for tourism, aquaculture, and commercial fishing makes its well-being essential to the economies of many of our coastal communities.

Gulfwatch, launched in 1991 by the Gulf of Maine Council on the Marine Environment, has played an important role in gathering information on the health of the Gulf of Maine marine environment. Under the program, US and Canadian scientists analyze blue mussels that live in shallow coastal habitats throughout the Gulf, examining them for the presence of toxic contaminants such as mercury, lead, and pesticides.

Gulfwatch uses blue mussels as its "sentinel" species (one that shows signs of change in the ecosystem) for several reasons. They stay in one place. They pump large volumes of water, causing chemicals to concentrate in their tissues. The amounts of the chemicals detected in the mussels indicate the amounts present in their home waters — information that can be more difficult to discern by analyzing only the water and sediment itself.

Over the past six years, Gulfwatch has provided the first long-term, comprehensive picture of the potential presence of toxic trace metal and organic contaminants in the Gulf of Maine. Scientists have developed baseline information that they can use to evaluate how changes in the marine environment may be affecting the health of the Gulf, providing a focus for Gulf-wide cooperation on issues affecting the US and Canada.

Changes in the marine environment may be sudden — such as those resulting from an oil spill — or may be caused by gradual contamination from dispersed sources, such as the collective runoff from gas stations, parking lots, and roadways. In either case, knowing the effects of changes helps those working in environmental and planning agencies in the US and Canada make sound decisions affect-

ing the Gulf's marine environment. Researchers, grassroots organizations, and even business can use the information Gulfwatch collects.

As new toxic chemicals become cause for concern, Gulfwatch incorporates them into its research. In addition, Gulfwatch monitors pristine areas along with heavily populated areas, bringing to light how much of certain toxic substances exist naturally in the environment, and the extent to which pollutants resulting from human activities have spread.

To date, very few of the Gulfwatch stations contain mussels with contaminant concentrations high enough to be detrimental to the mussels' health. This is good news because of the valuable role mussels play in the coastal ecosystems of the Gulf of Maine.

Gulfwatch is valuable in helping us understand if the Gulf of Maine is a healthy place for humans and other species living here. The fact that a small animal like a mussel can provide us with so much information underscores how much knowledge there is to be gained by studying the Gulf of Maine as a whole.

Jeffrey Taylor is a member of the Gulf of Maine Council on the Marine Environment.

Immerse yourself International Year of the Ocean is upon us

Anne Donovan
Editor in Chief

With the International Year of the Ocean well under way, opportunities to learn about and appreciate the importance of marine environments abound. Even long-time users of and advocates for ocean and coastal environments are likely to experience something new as part of this year-long effort to provide insight into the

importance of the world's communities.

IYO represents an effort to ensure that governments do all they can to promote the exploration, sustainable use, and conservation of the sea.

The *Gulf of Maine Times* looks forward to bringing you closer to IYO so you can make the most of the events taking place and resources being developed. Here are a few of the developments we'll be following during the year.

In the US, SeaWeb, a public education initiative in support of ocean conservation funded by Pew Charitable Trust, is working with the National Oceanic and Atmospheric Administration (NOAA) to develop activities and

resources designed to increase awareness of ocean issues during IYO.

A Gulf-wide effort to clean up the coast will include spring coastal cleanups in Nova Scotia and New Brunswick, coordinated by the Clean Nova Scotia Foundation with support from Moosehead breweries. Fall coastal cleanups will take place in Maine, New Hampshire, and

Massachusetts, coordinated by government agencies and supported by the Washington, DC-based Center for Marine Conservation. The Gulf of Maine Council on the Marine Environment will use information gathered during the cleanups to determine the best way to combat marine debris along the Gulf's coasts.

Environment Canada and the Canadian Wildlife Service are working with provincial governments to develop a kit to promote IYO to schools. Formal education programs will also be available on the Internet, and via video, CD ROM, and printed materials.

As part of a circumnavigation expedition, research vessels will relay a United Nations flag to one another during their regularly scheduled research cruises. A virtual expedition on the Internet will follow these cruises providing extensive information about the regions and oceans where the research vessels do their work.

International Ocean Day is June 8 and will be marked with numerous events. And don't expect IYO to wash away at year's end. Organizers say efforts to educate the world about its oceans will continue.

Visit <http://ioc.unesco.org/iyo>
for more information on this
year-long celebration
and education effort.

importance of the world's oceans to our livelihood and quality of life.

This celebration has been years in planning. The United Nations General Assembly in December 1994 proclaimed 1998 the International Year of the Ocean (IYO) to promote awareness and understanding of the importance of the sea, its resources, and marine activities to the wel-

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Pumpout programs offer alternatives to dumping

Gulf of Maine — Pumpout programs throughout the Gulf of Maine provide recreational boaters with an environmentally sound method for disposing of septic waste and help mariners find the pumpout facilities.

Many recreational vessels are equipped with portable toilets, or Marine Sanitation Devices, which can be drained at dump stations or pump-out stations where waste is collected for proper treatment and disposal. If, however, boaters simply dump their toilet waste and wastewater directly into the ocean, they are contributing to contamination of shellfish beds and swimming areas with disease-carrying bacteria.

Also, as the organic matter in sewage decomposes, bacteria involved in the process use up oxygen needed by fish and other aquatic wildlife.

States, provinces, and federal governments in the Gulf of Maine have been

campaigning to make mariners aware of the importance of using pumpout stations. In 1992, the US Congress passed the Clean Vessel Act (CVA), administered by the US Fish & Wildlife Service, to help states develop pump-out programs and awareness campaigns.

As part of the information campaign, the Sportfishing Promotion Council established 1-800-ASK-FISH, a toll-free number US boaters and anglers can call for pump-out and dump station locations and to report malfunctioning facilities. Currently, Massachusetts is the only state bordering the Gulf that participates in the information line.

But the CVA is now due for reauthorization, noted Buell Hollister of the Massachusetts Division of Marine

Fisheries (MDMF) and coordinator of that state's pumpout program. Without new federal funding for the program, private entities such as yacht clubs and marinas would have to absorb the cost of

New Hampshire has three pumpout stations managed by the state's Department of Environmental Services, and is installing a fourth in Rye Harbor. The New Hampshire Coastal Program publicizes the stations with pamphlets and stickers distributed to marinas each spring.

Maine's 40-plus pumpout stations, many funded through the State Planning Office's Coastal Program, are publicized with public service announcements, and with laminated cards that show the stations' locations and provide telephone numbers and radio frequencies, according to Stephen Cole, senior planner with the Maine Coastal Program.

Unlike Hollister, Cole said he would rather pump-out programs not rely on annual federal grants. "If pumpout fees were high enough, the stations could be more self-supporting. Towns and marinas could use the proceeds to maintain and

staff the pumpout stations," he said. Noting that the Clean Vessel Act grants limit fees at grant-supported pumpout stations to five dollars, Cole said, "I don't think that's enough over the long term."

The average weekend boater in Maine would probably have to pump out their tanks only two or three times a season, and would be willing to pay more than five dollars each time, Cole asserted. But Bob Pacific, chief of the US Fish & Wildlife Service Division of Federal Aid, which administers the CVA pumpout grants, said a study done in the northeastern US showed that boaters tend not to use pumpout stations if the fee is more than five dollars.

Maine also used some of its CVA funds to provide a grant to Friends of

Casco Bay (FOCB), a nonprofit stewardship organization in South Portland, to help the group operate Maine's only pumpout boat.

Use of FOCB's pumpout vessel has steadily increased since its arrival in the Bay three years ago, which Associate Director Cheryl Seavey attributes to boaters becoming more educated about the fact that dumping waste into the water can contaminate clam flats and swimming areas, and to the program's convenience. The pumpout boat can empty a vessel's tanks as it sits moored, whether the owner is present or not. FOCB publicizes the program with a brochure it distributes to marinas and other key locations around Casco Bay.

Seavey said CVA funding has been important to the program. An end-of-season survey FOCB conducted last year revealed that regular users of the pumpout vessel would be willing to pay more than they currently do for its services. But without any outside funding, "fees would need to be well over 50 dollars a pumpout. This would certainly preclude anyone using it," she said. "Our goal is to get funding for FOCB's Vessel Pumpout Program wherever we can. We're committed to continue the program through this coming season this summer," Seavey noted.

Provinces push pumpouts

While Canada does not have an equivalent to the US Clean Vessel Act, New Brunswick is waging its own campaign to promote clean boating.

The province's Department of Environment (DOE) has set up informational displays at several marinas, and distributes a brochure featuring guidelines for waste disposal and information about its 11 marine pump-out stations. The province's Environmental Trust Fund financially supported construction of the stations as part of the DOE's wastewater management program.

Some marinas and private moorings in Nova Scotia have pumpout facilities for septic waste, but DOE does not operate any itself, according to DOE District Manager Jeff Garnhum. But, he noted, the department encourages boaters to dispose of their septic waste properly at pumpout stations available at marinas.



Friends of Casco Bay's pumpout boat, manned above by Vessel Pumpout Program Coordinator Andy Bertocci, provides a convenient and environmentally safe way for boaters to empty their septic waste tanks.

Photo: Cheryl Seavey/Friends of Casco Bay

maintaining and operating the pumpout stations in the US.

Hollister predicted that if they don't get federal funding, some pumpout stations are likely to shut down, making it harder for boaters to properly dispose of their waste. MDMF coordinates 49 pumpout boats, 46 shoreside stations, and 15 dump stations, promoting them with annually updated brochures noting their locations. Last year, Massachusetts boaters used the facilities to divert 465,865 gallons/17,634 hectoliters of septic waste from ocean waters, Hollister noted.

Grants fund facilities, outreach

The CVA has helped other states in the Gulf set up pumpout programs as well.

Power company, hatchery charged up about flounder farming partnership

Manchester, New Hampshire — GreatBay Aquafarms, Inc. and Public Service Company of New Hampshire/Northeast Utilities (PSNH) are teaming up on a successful fish farming venture that both parties say provides an environmentally responsible alternative to harvesting wild flounder stocks.

Since early fall of 1995, GreatBay Aquafarms, Inc. has hatched summer flounder and sold them to growout operations that raise them to maturity and then sell the high-end fish at market. Since its launching, the hatchery has expanded to a second building and is now piloting its own growout program in anticipation of another large expansion this year, said Fish Culturist Greg Beckman.

GreatBay founders George Nardi and Chris Duffy launched their business in partnership with PSNH as a means of reducing fishing pressure on wild flounder stocks. PSNH Business Development Manager Gordon Tuttle said fish farms can also provide some employment for fishermen forced out of the industry by

declining stocks. GreatBay employs about a half dozen full-time and half dozen part-time workers, one of whom is a commercial fisherman, according to Beckman.

GreatBay leases space at PSNH's Newington Station on the Piscataqua River. The power company also supplies the hatchery with saltwater from the tidal river by allowing GreatBay to tap into the station's water intake system.

As it passes through a series of fish holding tanks, the water is continuously filtered, reoxygenated, and recirculated. Fish waste is removed and marketed as agricultural fertilizer before the hatchery discharges the water back into the Piscataqua, in accordance with PSNH's state and federal operating permits, said Tuttle.

"We hope showing it works here might provide future opportunities for aquaculture development in New England. Plus, it's helping to nurture a small business that's growing within a new industry," Tuttle said.



GreatBay Aquafarm's hatchery at a power station owned by PSNH/Northeast Utilities uses water tapped by the station and stored in two holding tanks (right).

Photo: GreatBay Aquafarms

Gulf of Maine Council

1997 Visionary Award Winners innovate and inspire

Gulf of Maine — Those who can see what could be, and who have the drive to bring us closer to it, are visionaries. Without them progress would stall at wishful thinking. Visionaries in the Gulf of Maine have moved beyond identifying concerns about the sustainability of the marine environment, taking innovative steps to protect it, and convincing others

to share their passion.

In recognition of the valuable role visionaries play in advancing the Gulf of Maine Council's mission to protect and enhance the Gulf's marine environment, the Council annually recognizes two Visionary Award winners from each of its five member states and provinces for their commitment to protecting the environment

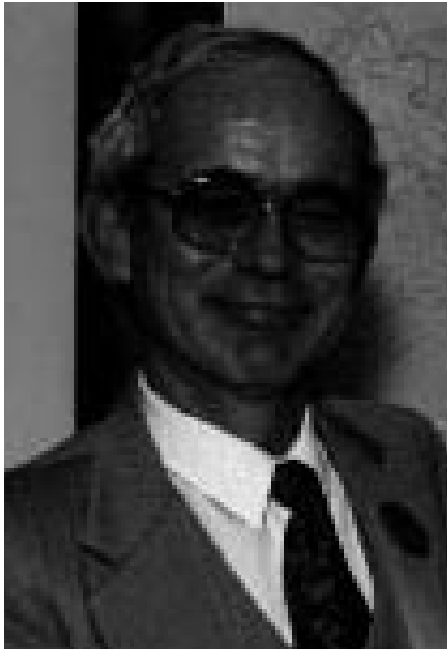
and increasing public awareness of the Gulf. The Council announced its 1997 Visionary Award winners late last year.

"We see the Council's Visionary Awards as a more personal way of giving formal international recognition to those who have made innovative and creative contributions to the goals we all share — a diverse, healthy, and productive marine

environment throughout the Gulf," said Trudy Coxe, Council Chair and Secretary of Massachusetts' Executive Office of Environmental Affairs.

For the first time this year, Nova Scotia Council members also presented two businesses with awards for contributing to public understanding of environmental issues.

Photo: Karen Swan/Environment Canada



Stephen Hawbolt

Stephen Hawbolt, Nova Scotia

Stephen Hawbolt, program director of the Clean Annapolis River Project, leads a team of volunteers who supply the government with information on the river's water quality. One of the founders of the Gulf of Maine Coastal Monitoring Network, he has worked for seven years to improve environmental quality and public education in the Annapolis Basin.

"Stephen has set an example in positive community involvement that should be emulated and envied," according to Nova Scotia Fisheries and Aquaculture Minister Jim Barkhouse.

Hawbolt says he works to empower communities. "Linking those groups is important so that we can learn from each other, so that we don't keep reinventing the wheel, so that we can build on our strengths. But I think on a bigger scale even, and why volunteer monitoring is such a powerful device, is the sense of ownership it develops in people."

Bay Ferries, Nova Scotia

For its role in helping to launch a provincial Department of the Environment public education program last summer, Bay Ferries Ltd. received the Bay of Fundy Partnership Award. The program recruited high school and college-age youth to present on-board activities and demonstrations about the Bay of Fundy ecosystem to ferry passengers of

all ages.

"We certainly were honored, but really, the success of the project should be credited to the young individuals who delivered the program. The merits of the project in terms of educating the public were important. That's why we got involved," says Bay Ferries General Manager Donald Cormier.



Jennifer Morine and Bradley Hazelton discuss the marine environment with young Bay Ferries passengers.

Photo: Paul Schwartz/Nova Scotia Department of the Environment

ATV News, Nova Scotia

ATV News received the Bay of Fundy Environmental Awareness Award for its continued coverage of the plight of the endangered North Atlantic right whale.

"When our viewers see stories about endangered species it does something to them emotionally," says ATV News Director Jay Witherbee. "It makes them mad, and if they send that message to the politicians who can make the changes, then we're doing our job in terms of heightening public awareness."



ATV News Reporter Jonathan Kay accepts a Visionary Award from Nova Scotia Minister of Fisheries and Aquaculture James Barkhouse.

Photo: Karen Swan/Environment Canada

Nova Scotia Power

Nova Scotia Power is helping to enhance fish habitat and is contributing to scientific research on the marine environment. Collaborating with the provincial Department of the Environment, the company has also participated in a program allowing businesses to contribute funds to environmental efforts in lieu of paying fees the government would otherwise charge them for water use.

Nova Scotia Environment Minister

Wayne Adams has praised the company for its work with watershed and management groups, and on behalf of the Annapolis, Bear, Tusket, Gaspereau, and other rivers.

"We are strongly committed to constantly improving our company's environmental performance," says Doug Campbell, hydro production manager at Nova Scotia Power. "This award recognizes that our efforts are making a difference in our communities."



Nova Scotia Power field biologists perform an electro-fishing survey, stunning the fish, then measuring and identifying them.

Photo: Nova Scotia Power

Peter Hicklin, New Brunswick

Wildlife biologist Peter Hicklin, a 20-year veteran of the Canadian Wildlife

Service, has devoted much of his career to working with shorebirds and the ecology of the Upper Bay of Fundy.

"Peter's work has helped foster greater understanding of the critical role that mud flats play in sustaining and supporting large populations of migrating shorebirds. This is a vital component of the Gulf's environment," says Council Chair Coxe.

"I'm very grateful for the award, but it's not as if I'm finished," Hicklin emphasizes. "We've done a lot. We've learned a lot. And I'm very grateful that people recognize my contribution. But there's still much that we can't explain."



Peter Hicklin

Photo: Canadian Wildlife Service

ACAP-Saint John, New Brunswick

ACAP (Atlantic Coastal Action Program)-Saint John works with volunteer groups, and private and public agencies on coastal zone challenges facing the Saint John Harbor and estuary.

"A lot of what we work toward is to increase the appreciation of local residents for the value that the coastal environment has for the community," says Matthew McKim, president of ACAP-Saint John.

"ACAP-Saint John's long-standing community partnership has helped develop a strong sense of public responsibility



ACAP Saint-John encourages community participation in activities such as water quality monitoring.

Photo: ACAP-Saint John

for the betterment of the Saint John Harbor and Gulf of Maine marine environments," notes New Brunswick Environment Minister Joan Kingston.

Robin Alden, Maine

Former Maine Department of Marine Resources Commissioner Robin Alden founded *Maine Commercial Fisheries* in 1973, which later spun off into *Commercial Fisheries News*, *Fisheries Products News*, and *Fish Farming News*, making complex marine-related issues accessible to readers. She also helped start the annual Maine Fishermen's Forum, which has convened diverse representatives of the state's fishing industry for more than 20 years.

Appointed to her DMR post in 1995, Alden developed innovative programs and methods for managing marine fisheries resources, including a local management approach to Maine's lobster fishery.

"From the beginning I've really believed that if you give people the tools to act responsibly and control how they operate in the marine environment, they

will act responsibly, and better policy will result," Alden says, but adds, "you have to have government and institutions that are hospitable to that."



Robin Alden

Photo: Maine Department of Marine Resources

University of Maine School of Marine Sciences

In 1996, the University of Maine created its School of Marine Sciences, offering programs on aquaculture, biology, biotechnology, oceanography, marine geology, public policy, resource economics, and archaeology. The university also collaborates with the lobster industry to protect the health and predict the future of Maine's best-known species.

With the new school in place, "We'll

be recognized as a significant resource to the region in marine issues," according to Bruce Sidell, Director of the School of Marine Sciences.

The two Maine winners "have improved the quality of the Gulf of Maine's diverse natural resources, and they have increased the public's understanding of them," notes Council member and Maine State Planning Office Director Evan Richert.



The University of Maine School of Marine Sciences brings the classroom to a clam flat.

Photo: University of Maine School of Marine Sciences

Northeast Petroleum, New Hampshire

Northeast Petroleum, a Division of Cargill, Inc., funded the development of coastal ecology curricula in the New Hampshire seacoast region as part of the Coastal Education Initiative. Designed by the New Hampshire Coastal Program, the project has sent 9,433 students on field trips to coastal education centers since 1996.

"We wanted to create awareness with people in New Hampshire with what

actually takes place in [coastal] environments," starting when they're in elementary school, explains Jim Gilmartin, Northeast Petroleum's manager of terminal operations.

The company also works on other efforts to preserve the New Hampshire seacoast region and the Gulf of Maine, such as reducing waste and increasing recycling at its Portsmouth terminal. Northeast Petroleum also helped design and restructure the Piscataqua River Cooperative Oil Spill Response Team.



Students on a field trip as part of the Coastal Education Initiative supported by Northeast Petroleum, a Division of Cargill, Inc.

Photo: New Hampshire Coastal Program

Audubon Society of NH/Fish & Game Department

The Tern Restoration Project, a collaboration between the Audubon Society of New Hampshire and that state's Fish and Game Department, has successfully reintroduced common terns, a state endangered species, to the Isles of Shoals for the first time in more than 50 years.

Growing human and gull populations have pushed terns out of their historic nesting grounds throughout the Gulf of Maine.

"Our success in year one of this proj-

ect was way beyond our expectations in that we actually had terns successfully breed on the island," says Rich Cook, Vice President for Conservation at Audubon.

Jeffrey Taylor, Council member and Director of the New Hampshire Office of State Planning notes, "The mixture of hard science, industry participation, and public education represented in these projects are the three key elements necessary to assure the continued health of the Gulf of Maine."



Mike Schulze of the Audubon Society of New Hampshire prepares a decoy area on the Isles of Shoals.

Photo: Rebecca W. Suomala

Toad Hall Bookstore, Massachusetts

Toad Hall Bookstore in Rockport, a 25-year-old not-for-profit business operated by the Essex County Ecological Center, donates all of its proceeds to an environmental grant program supporting environmental advocacy, research, and educational groups on Massachusetts' North Shore.

"This award reinforces our commit-

ment to providing environmental grants and fostering environmental awareness among the residents of the North Shore of Massachusetts," says Rich Quateman, President of the ecological center's board of directors. Toad Hall Bookstore owner Buck Robinson adds, "While we have never sought out recognition of our work, it sure feels good to be recognized in this fashion by the Gulf of Maine Council."



From left, Trudy Coxe, Secretary, Massachusetts Executive Office of Environmental Affairs; Rich Quateman, Essex County Ecological Center; Toad Hall Bookstore Owner Buck Robinson; Massachusetts Coastal Zone Management Director Peg Brady.

Photo: Suzy Fried/Gulf of Maine Times

Stormy Mayo, Massachusetts

A leader in the field of marine mammal protection in New England for more than 20 years, and the lead scientist for the Center for Coastal Studies in Provincetown, Stormy Mayo has headed efforts in Massachusetts to protect the endangered North Atlantic right whale through the establishment of the Marine Mammal Disentanglement Network.

The Network, which works to free whales entangled in fishing gear, is "direct conservation," says Mayo, noting, "Awards such as this hearten those who work in many ways to conserve and protect marine mammals [by recognizing] the importance of very direct conservation efforts that strive to save species from extinction."

According to Coxe, the Massachusetts winners "saw that the environment of the Gulf of Maine needed them, and they took the steps necessary to get things done."



Dr. Stormy Mayo

Photo: Shane DuBow

Ecotourism

Continued from Page 1

Epler Wood, president of The Ecotourism Society (TES), a Vermont-based international association of 1,400 tour operators, travel agents, airlines, and other members.

"Ecotourism travel companies should be involved in environmental conservation and must work with local communities in their destinations to make sure those communities are benefitting from the income brought into the region by travelers. Only by defining it that way does it become a form of sustainable development," Wood asserted.

Wood said the only country collecting data on whether self-proclaimed ecotourism outfitters are living up to the moniker is Australia.

Definitions of ecotourism may come down to semantics, but for the well-meaning prospective traveler, the numerous variations on outdoor travel can make the search for a true ecotourism experience confusing.

For instance, "nature travel" may bring visitors to natural settings, but without the educational or ecological emphasis. Adventure travel often takes place in natural outdoor settings, but may focus more on the activity than the environment.

Also, ecotravel concerns extend beyond the natural environment to cultural considerations. And, according to Sid Quarrier of the Maine Island Trail Association's (MITA) Rockland office, it is just as important to respect the locals when traveling within the region as it is on a trip from Boston to Belize.

Strings of out-of-town kayakers paddling across a coastal Maine channel may genuinely appreciate their natural surroundings, but they can also delay local fishermen attempting to squeeze every working minute out of a good weather day, Quarrier said.

The Maine Island Trail consists of 75 coastal islands managed by MITA for what Quarrier describes as "low-impact recreational use." Half the islands are state-owned and open to the public; the other half are privately owned and open to MITA members.

For muddled travelers seeking an environmentally and socially responsible travel experience, TES offers "screening" tips on its web site, such as checking on whether your potential outfitter employs naturalists, uses a responsible waste management policy, and participates in conservation efforts in their home communities. The organization also offers a Marine Ecotourist Fact Sheet.

Though there's no overarching super-



Some environmentally-oriented vacations look a lot like work, nevertheless, their popularity continues to increase. Here, Earthwatch Institute volunteer Kimberly Knowlton collects clam samples in Boothbay Harbor, Maine.

vision of the ecotravel industry in either Canada or the US, Wood said, "We've specialized in [establishing] standards for the private sector."

Benefits worth some risk

Some outfitters follow principles of ecotourism more closely than others. And accidental or even willful environmental transgressions sometimes occur. But sources insist that, so far, ecotourism in the Gulf of Maine weighs in with more environmental benefits than harm.

Speaking of ecotourism in a global context, Wood said, "What's not working is small potatoes in terms of the overall phenomenon. Ecotourism companies will have impacts, but compare that to the grand scale of corporate environmental abuse."

Educating people about the natural environment and providing opportunities for them to appreciate it at close range leads them to consider how their actions and lifestyles affect the environment, and how they can support and participate in conservation efforts, say ecotourism proponents. Also, they point out, ecotourism is contributing to increased attendance at parks and other sites, generating revenue to pay for conservation work.

"The more people have an opportunity to experience the outdoors the better. It makes people think differently," and behave differently when they return home, said David Armstrong, owner of The Outdoor Adventure company, based in St. George, New Brunswick. He said his company makes a point of using environmentally sound practices such as bringing septic waste back from campsites to be treated in sewage systems.

Armstrong concedes that some areas should be restricted to public access at certain times, such as during nesting or hatching seasons, but otherwise doesn't favor designating certain areas off limits. So far, he maintained, New Brunswick hasn't suffered any ill effects as a result of increased visitors to natural areas.

"Any disturbance to wildlife or natural habitat, if not done carefully and with some thought, could potentially have the impact of disturbing that ecosystem in some very subtle ways," said Barbara Canavan, Director of Earth Wise Journeys, an Oregon-based group that organizes volunteer and ecotravel trips to the Gulf of Maine and other destinations. "Do I think people shouldn't go there? No. I think we should make them as aware as they possibly can be and as educated as

they possibly can be," she said.

Another way to protect a fragile environment is to set strict parameters for how it can be visited. This has been done on Machias Seal Island, nesting territory for thousands of seabirds each summer, including about 1,000 pair of Atlantic puffins. Claimed by both Canada and the US but managed by the Canadian Wildlife Service, Machias Seal sits at the mouth of the Bay of Fundy about equidistant from Maine and New Brunswick.

Anyone willing to pay a 50 dollar charter fee can visit the island, but numbers of visitors per day are limited. Those who do come ashore are allowed on the island for only a few hours, and are restricted to certain areas. Officials say these measures are allowing the birds to reproduce successfully while providing an unusual experience for an appreciative audience.

Bill Hancock, Director of the Environmental Centers Department at Maine Audubon Society (MAS) in Falmouth, Maine, believes that some impact on natural resources is an inevitable result of any ecotravel, no matter how tightly controlled. But, he said, "Even where there is lasting impact on trail systems [for example], I think it's well worth the trade."

MAS has led environment-oriented trips to destinations all over the world, including whale watch and seabird cruises in the Gulf of Maine, for more than 25 years.

But Quarrier of MITA said that while "most people want to do the right thing," some travelers focus on reaching their destination without considering the effects they may have on an area's natural resources, such as visiting certain islands during seabird nesting season. "Simply that you can get there and do it doesn't make it a good idea from an environmental point of view," he said.

MITA advocates development of a management plan for use of coastal areas that takes into account their ecological, economic, and cultural significance.

Protecting with planning

Some work is already under way to study how Gulf of Maine communities can benefit from ecotourism while preventing it from irreparably damaging natural resources.

At a Sustainable Tourism Conference scheduled for April 6-7 at the College of the Atlantic in Bar Harbor, Maine, the Downeast Resource Conservation and Development Council hopes "to develop a strategy that can be an example for rest of state," said coordinator Dana Nelson.



Kayakers who paddle safely and courteously through fishing harbors, such as this one along coastal Maine, will avoid accidents, and are less likely to present problems to those working on the water.

In Canada, where the provinces are responsible for overseeing tourism, Nova Scotia is investigating how to nurture the fastest-growing type of tourism in the province without damaging natural resources, according to Bob Book, tourism development officer for Nova Scotia's Department of Economic Development and Tourism. A recent study by the department examined how nature tourism has affected other destinations. "Hopefully, we would learn from their experiences," said Book.

"We've been encouraging organizations representing the tourist industry to develop standards and criteria in which

to conduct themselves," said Jerry Conway, operations advisor on marine mammals and plants at Canada's Department of Fisheries and Oceans.

Ecotourism outfitters in Nova Scotia are doing a "pretty good job" monitoring their own practice, observed Book, adding that he doesn't foresee any government regulation of ecotourism in the near future. If it were found to be necessary, it would be in collaboration with the industry, he said.

Earthwatch's Magruder also favors local regulation of ecotourism. "Local people understand the resources and have an interest in protecting them,"

she explained.

Along with working to ensure its own trips don't overtax the destinations' natural resources or cultures, Earthwatch also helps other groups research how ecotourism affects natural areas. Before the Boston Harbor Islands were designated a national park last year, Earthwatch studied them, helping managers "to determine where the public could and shouldn't go to avoid damaging [piping] plover habitat and other concerns," she said.

Ecotourism operators say more and more, travelers care how their visits affect a local community or natural environment. "I think it is genuinely

increasing — the awareness that 'my travel dollars maybe can make a difference. I can give something back,'" said Canavan. Wood agreed that ecotourism "will grow because of the baby boomers' interest in this kind of travel."

Nevertheless, while they welcome the burgeoning interest, ecotravel proponents say common sense, foresight, and vigilance are needed to assure ecotourism doesn't overwhelm Gulf of Maine resources as it has other popular destinations. After all, said Wood, "Tourism cannot be ecotourism if it's not sustainable."

Photo: Mary Anne Cahill



Earthwatch Institute volunteers at Acadia National Park scan the water for signs of whales. Earthwatch organizes trips for travelers who want to help scientists and researchers working to study and conserve the environment.

Pathways to ecotravel Visit these web sites for more information

Earthwatch

www.earthwatch.org

Earthwise Journeys

www.teleport.com/~earthwyz/tourism.htm

The Ecotourism Society

www.ecotourism.org

Infohub

Infohub is a source for information on a variety of travel options and may provide some ecotravel leads.

www.infohub.com/travel.html

Downeast Resource Conservation and Development Council

Visit their web site to learn how one Maine region is exploring the ecotourism issue.

www.nemaine.com/rc&d/vac.htm

Whales warrant worry as ecotourism grows in the Gulf

Though the substantial benefits of ecotourism seem to outweigh its risks to the Gulf so far, some are concerned about one important aspect, the potential effects of whale watch boats on marine mammals.

The annual migration of whales — including endangered North Atlantic right whales — off of the New England coast and through the Bay of Fundy is one of the most popularly observed natural phenomena in the Gulf of Maine. Charter outfits pepper the New England and Maritimes coastlines offering half-day opportunities to watch the whales in their natural habitat.

Numbers of whale watching and marine ecotours are growing as fishermen affected by the downturn in regional fish stocks scramble for work, said Jerry Conway, operations advisor on marine mammals and plants at Canada's Department of Fisheries and Oceans.

US regulations and Canadian guidelines are intended to protect whales and other sea mammals, but some worry that the continual presence of observation boats will cause problems for the whales anyway.

Conway described this as the classic ecotourism quandary. Educating people about the endangered North Atlantic right whale cultivates funding and support to protect the species. "There are benefits to be derived from people seeing these animals but we have to be very careful that in allowing people to see them we don't adversely impact the animals," he said.

Conway credited most of the approximately 25 whale watch charters operating in the Bay of Fundy with adhering to a code of ethics they developed with assistance from East Coast Ecosystems, a marine education and research organiza-

tion based in Freeport, Nova Scotia. "We see it as a very positive sign on the part of the marine industry. It's self-serving too — if the whales are chased out, they're out of business," Conway said.

Deborah Tobin, education coordinator for East Coast Ecosystems, said the number of whale watch tour operators on the Nova Scotia side of the Bay of Fundy increased from three to 10 in one year, and that "the industry recognized that its

tem," Conway said, although if vessels increase in size and numbers, he predicted, "We will have to review it and possibly control it via licensing or seasonal control."

But Janice Harvey, Marine Conservation Program Director for the Conservation Council of New Brunswick, said whale watching in the Bay of Fundy worries her group, which she said otherwise has not discussed ecotourism much.



Whale watching is becoming an increasingly popular way for travelers to experience the magnificence of the Gulf of Maine marine environment, but without restraint, these seasonal pilgrimages could take their toll on the whales.

Photo: Tourism Nova Scotia

growth was getting out of control." But along with working with whale watch operators, East Coast ecosystems has also created brochures to educate passengers about how to be responsible whale watchers, she said.

"We haven't reached a point where [whale watching is] impacting adversely on the Bay of Fundy or the marine ecosys-

"If there is pressure, it's there because it's getting big. A bunch of boats all circling around a pod of right whales is not a good thing. I'm very concerned about it because they're such a vulnerable population," Harvey said.

In Massachusetts, protective measures include restrictions preventing vessels from maneuvering closer than 100

yards/91 meters to whales and 500 yards/460 meters to endangered right whales. These "are working well in the short term," according to Mason Weinrich, Executive Director and Chief Scientist at the Cetacean Research Unit (CRU) in Gloucester, which conducts whale research and supplies naturalists to whale watch boats.

Weinrich said he is more concerned about the long-term effects of the whales' exposure to boat engine noise than he is about the number or proximity of boats to the mammals, noting, "Around here, most whale watches do a good job."

Whale watch charter owner Dave Malloy agreed that most New England captains are responsible in their approach to running whale watch tours. Malloy's company, the East India Cruise Company in Salem, Massachusetts, runs cruises from May through October using CRU naturalists. He said whale watch passengers in the past were often looking for little more than a relaxing day on the water. "Now a vast majority want to learn more about the environment and dangers that face the marine mammals," he said.

"I think in general people are more environmentally aware than they were 20 years ago. It's not exclusively because of whale watching, but I like to think it's helping," said Weinrich. Nevertheless, he said naturalists often find themselves having to lower the expectations of people who expect whales to perform continuously. When you're watching a wildlife documentary, he elaborated, "You don't see 45 minutes of an animal sleeping and three minutes of it being active. You see the best of what it took naturalists and film crews two years to get."

Pipeline

Continued from Page 1

company's request.

NAPP proposes traversing the Gulf of

from the Sable Island reserves to Country Harbour, Nova Scotia, from there crossing the Gulf of Maine to Seabrook, New Hampshire, connecting with the existing natural gas network and distributing fuel

state could block the license, Timpano noted. The public can voice their opinion on the project at public hearings or in writing.

Timpano said IF&W is also concerned

any infrastructure project requiring stream crossings, Timpano said, adding, "I guess the one item that is new to my experience is the idea of avoiding impacts on larger rivers by directional drilling — when they can drill underneath and run the pipe through."

Mike Herz, board member of the Alna, Maine-based Sheepscot Valley Conservation Association, is concerned that Maine's regulatory process may not be supportive enough of the state's new Atlantic salmon conservation plan. Horton explained that the plan does not designate critical salmon habitat, so a pipeline could not be halted or diverted from particular areas on that basis. There would have to be "clear demonstrable impacts" on the salmon, he said.

Canadian environmental officials faced an additional concern. Some slates along the pipeline's proposed path through Nova Scotia and New Brunswick are high in sulfides. When exposed to rain, the runoff can cause streams to acidify, making heavy metals such as lead, cadmium, zinc, arsenic, and mercury more easily absorbed by wildlife, and affecting the well-being of salmon and trout and their food supplies, said Alan McIver of the Environment Canada's Environmental Protection Branch.

The acidic rock is in a "very limited location," according to Tony Vadlja, M&N northeast manager of environment for the Canadian part of the project. "Even in those areas, we suspect the rock will be below the level needed to trench to put the pipe in the ground," he said. If the rock has to be disturbed there are ways to seal or dispose of it that minimize its effects on rivers and streams, he asserted.

Sterling noted that, unlike the M&N proposal, NAPP's proposed pipeline would only traverse a few miles on land. Nevertheless, she said, "The engineers would certainly be working with environmentalists or community groups if that's applicable to ensure that there are no problems with the stream crossings."

Marine impacts debated

Both proposals would require a pipeline be laid from the reserves off Sable Island, a federal Migratory Bird Sanctuary, to mainland Nova Scotia. According to Jerry Conway of Canada's Department of Fisheries and Oceans, this

part of either project would disrupt the marine environment.

But, he said of the M&N proposal, "It's certainly a far more acceptable pipeline as opposed to [NAPP's] that was going to be extending along the Scotian shelf through the North Atlantic right whale conservation area and lucrative fishing areas." Conway said short-term effects of pipeline construction as well as long-term effects of the structure's presence and risks of leaks have to be considered when evaluating this type of project.

NAPP maintains that offshore pipelines cause fewer environmental impacts than onshore construction, and that the pipeline's design would not snag

fishing gear.

"We're very well aware of the right whale habitat and breeding area and would take care to avoid that habitat to avoid disruption to them," said Sterling. She said NAPP has also begun speaking with fishermen in the US and Canada, "But we're much more focused on the Atlantic provinces now because that's where the pipeline is. We're a year away from pipeline being in this area."



Some are concerned that a natural gas pipeline proposed by Maritimes & Northeast could affect the habitat of Atlantic salmon, which spawn in many of the Maine rivers the pipeline would have to cross, such as the Sheepscot (above).

Maine with a pipeline constructed along the ocean floor. M&N, much further along in the regulatory approval process, would travel overland, crossing numerous rivers and streams that are home to migratory fish and other aquatic species.

Lacking an adequate infrastructure to distribute natural gas throughout the region, the northeastern US now relies much more on oil than does the rest of nation, and also pays more for the natural gas it does use, according to the New England Gas Association, a regional trade association. But the group notes that natural gas use is increasing rapidly, creating a ready market for the Sable Island reserves.

Natural gas proponents point out that the fuel burns cleaner than coal and oil, which emit pollutants that can return to the Gulf of Maine watershed in rainfall or dry particles, causing a variety of problems in coastal and marine environments.

Review of projects continues

The Canadian portion of M&N's proposal has been approved by NEB, and construction of a gas plant is already under way at the Goldboro, Nova Scotia site where the pipeline will make landfall.

The US Federal Energy Regulatory Commission (FERC) has approved the first US phase of M&N's project — the portion of the pipeline that travels from Westbrook, Maine to Dracut, Massachusetts according to spokesperson Tamara Young-Allen. She said FERC staff are reviewing phase two of the project — the portion from Westbrook to Canada.

Along with environmental issues, FERC considers the need for the proposed projects, as well as proposed customer rates and other factors, said Young-Allen.

Brian Prenda of M&N said the company will begin construction of phase one this spring and expects to start construction on phase two in the fall.

NAPP filed applications for its North Atlantic Natural Gas MarineLine with FERC and NEB in October 1997, and both agencies are reviewing the application. NAPP had unsuccessfully petitioned the US and Canadian federal governments to consider its proposal as an alternative to M&N's application.

The project's first phase would bring gas

throughout the northeastern US and Canada. The second and third phases would extend the system into Newfoundland and offshore of eastern Nova Scotia.

Economic growth expected

One factor of major importance to communities along a pipeline route is the potential for business development.

A gas plant now under construction in Goldboro, Nova Scotia, where the pipeline from the Sable Island Reserves will make landfall, will provide approximately 45 new jobs in the small town, according to Gordon MacDonald of the Guysborough County Regional Development Authority. But, he said, "It's the ancillary activities that are going to bring the real jobs. It's what the development is going to lead to down the road in additional industry."

Maine also recognizes the benefits of a new source of natural gas, according to Jim Connors, senior policy development specialist in the Maine State Planning Office and staff representative to state's interagency Natural Gas Working Group, which monitors development of pipelines in the state.

"The state of Maine, from the governor on down, are welcoming the access to natural gas these pipelines will bring," Connors said. He pointed out that M&N has lateral pipelines that would provide opportunities for local distribution companies to grow, while NAPP's pipeline would bypass all of Maine and its energy markets.

Land route provokes habitat concerns

"[M&N is] proposing construction during spring, summer, fall seasons and there are timing concerns on some of the real sensitive streams," where anadromous fish would be migrating and spawning, said Steve Timpano, environmental coordinator for the Maine Department of Inland Fisheries & Wildlife (IF&W).

Several state environmental agencies are involved in the permitting process. FERC has ultimate jurisdiction, although by denying a water quality certificate, the

about threatened and endangered species living along streams, such as freshwater mussels and some species of turtles, and about waterfowl and wading bird habitat. He said the agency wants M&N to avoid construction when the birds are nesting and rearing their broods.

And, accommodating one environmental issue may mean compromising another. Moving a crossing from one site to another may preserve a wetland but could affect Atlantic salmon spawning habitat, for example.

Another concern regarding anadromous fish habitat is the excavation of stream bottoms and the resulting accumulation of silt that would fill in spawning and rearing habitat downstream, said Gregg Horton, a fisheries biologist with the Maine Atlantic Salmon Authority, adding, "I've never known of a project that has involved such extensive excavation of the stream bottom that [M&N is]



Work is under way to construct a gas plant in Goldboro, Nova Scotia, where Maritimes & Northeast's proposed pipeline would make landfall after transporting the gas via underwater pipeline from Sable Island to the mainland.

talking about."

Gus McLachlan, M&N's environmental manager, said habitat concerns can make routing complicated. But, he said, "By working with environmental agencies and groups to develop alternate routes as needed and specialized construction methods, a workable solution can usually be found to cross these resource areas."

Many of these issues would arise with

For information on the status of the pipeline projects call:

Ross Hicks
National Energy Board Canada
(403) 299-3930

Paul McKee
US Federal Energy
Regulatory Commission
Office of External Affairs
202-208-1371

Cite the appropriate
project docket number:
*North Atlantic Pipeline
Partners CP98-29-000*
*Maritimes & Northeast
Pipeline CP96-809-000 et al*

Constructed wetlands revive dikelands

Bay of Fundy — Filled with rich soils and topped with salt-tolerant plants, salt marshes are among the most productive habitats in the world. With their intricate networks of creeks and small ponded areas called *pannes*, they link land and sea, providing nursery grounds and food for fish, waterfowl, and shorebirds.

Salt marshes depend on the tide's ebb and flow to function. In a process that has taken place twice a day for thousands of years in the upper Bay of Fundy, the world's largest tides — as high as 50 feet/15 meters — flow in and out of the Chignecto Bay and Minas Basin, eroding the soft red sandstone there, and forming vast mud flats that eventually give rise to extensive salt marshes.

The construction of dikes in this region by Acadian settlers in the 1670s, however, blocked tidal flow, severing the lifeline between land and sea in many places, and converting more than half of the former salt marsh there to agricultural land. From the 1700s to early 1900s, these "dikelands" supplied hay for local use and export to the US.

But when the invention of the combustible engine in the early 1900s reduced the use of horses — and consequently the demand for hay — these lands fell out of use for farming. Because the lands are no longer hospitable to salt marsh plants and wildlife, the species that once lived there have not returned.

Those working on habitat restoration say converting the dikelands back to salt marsh is impractical. People have settled there, establishing homes, businesses, farms, and the infrastructure to support them. Removing the dikes to restore tidal flow would flood these settlements.

Alternatively, in an effort to revitalize wetland habitat for waterfowl and other

migratory birds, various habitat restoration partnerships are constructing freshwater impoundments on the former agricultural lands that once were salt marsh, using methods to contain the water and prevent flooding in other areas.

Although flooding these lands with fresh water will never restore the lost functions and values of Fundy salt marshes, the impoundments are providing much-needed habitat for waterfowl and other wildlife such as marsh birds, amphibians, fish, and insects — all essential in the food web. "It's a win-win situation," said Jon Stone of the Canadian Wildlife Service and communications coordinator for the Eastern Habitat Joint Venture (EHJV), which is working on

Plan, a 15-year agreement between the US, Canada, and, more recently, Mexico. The plan provides a framework for addressing conservation and protection of critical wetland habitat throughout North America through restoration, enhancement, and land acquisition. Partnerships between governmental agencies and non-governmental organizations are working to restore continental waterfowl populations to 100 million birds — numbers not seen since the 1970s.

In 1996, North American waterfowl numbers, including black ducks and Canada geese, were estimated at 90 million birds, an increase of 35 million since 1985. These species rely on Canada's wetlands for breeding, raising their

20,000 acres/8,100 hectares of land in the Gulf of Maine watershed. Project costs have averaged about \$1,500 per acre — a bargain considering that land acquisition and excavation of soil, both known to be expensive, are often involved.

Belleisle a "model" project

At Belleisle Marsh, an 800-acre/320-hectare site located along the Annapolis River in Nova Scotia, several freshwater impoundments are integrated with agricultural use and private land ownership. People hiking along trails there can now observe birds and wildlife, and populations of waterfowl, including Canada geese and black ducks, and other marsh birds such as sora rails and bitterns.

"Before the restoration of Belleisle Marsh, I would see grasslands with very little wetland habitat. Today, I can count as many as 30 bird species within an hour," said Stone. Belleisle is also providing habitat for other wildlife dependent on wetland habitat, such as muskrat and several species of frogs.

Using the Belleisle project as its flagship, the EHJV hopes to encourage private landowners and farmers to develop similar projects on their own land, as has been done in New Brunswick at the Hampton-Kennebecasis Marsh Complex. According to Peter Austin-Smith of New Brunswick's Department of Natural Resources and Energy, freshwater impoundments,

Photo: Environment Canada



Reg Melanson, Eastern Habitat Joint Venture Coordinator, introduces Alice Stone to a wood duck at Belleisle Marsh, an EHJV project along the Annapolis River in Nova Scotia.

restoring waterfowl habitat. "Both people and wildlife will benefit," he explained.

Plan promotes waterfowl habitat

Coupled with great losses of wetlands, drastic declines in waterfowl populations in the 1980s led to development of the North American Waterfowl Management

young, and staging — gathering prior to their long migration south.

Collaborating to carry out the plan in Canada are members of EHJV, including Environment Canada and the Canadian Wildlife Service, Wildlife Habitat Canada, New Brunswick's Department of Natural Resources and Energy, Nova Scotia's Department of Natural Resources, and Ducks Unlimited Canada (DUC). Funding is made available through US partners, including the US Fish and Wildlife Service and non-governmental organizations.

DUC has been working to enhance waterfowl habitat in the Gulf of Maine watershed since 1965. The group has pursued projects using a successful combination of landowner agreements and land acquisition. But, noted Keith McAloney, DUC Senior Habitat Biologist, "The EHJV partnership provides the additional money necessary to purchase land and [for] further enhancement of wetland habitat."

Since DUC's early work and the formation of EHJV in 1989, more than 100 wetland impoundments have been developed on nearly

rough cover habitat (areas where dense vegetation is allowed to grow), and river and lake habitat coexist with agricultural lands. "A positive outcome of this project has been increased communications between and among interest groups and government agencies," he said. And communication is essential in managing that 5,000-acre/2,020-hectare marsh system, which includes multiple landowners who differ in their interests and opinions.

The Belleisle project, Hampton-Kennebecasis Marsh, along with a 2,000-acre/810-hectare project proposed for the Tantramar Marsh, will serve as "models" for future projects. "The [Belleisle project] has been extremely successful, not only for wildlife, but in changing peoples' attitudes," said Reg Melanson of the Canadian Wildlife Service and Coordinator for the EHJV, adding "people are beginning to realize the benefits of these projects."

Visit
www.wetlands.ca
 for more
 information on
 wetlands in
 Canada.



Constructed wetlands are promoting a return of waterfowl, which had been absent from some areas after the construction of dikes in the seventeenth century. The projects not only are attracting wildlife, but also provide opportunities to educate people of all ages about the value of wetlands.

GULF LOG

Feds conditionally approve MA nonpoint pollution plan

Boston, Massachusetts — After an extensive public notice period, the National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA) conditionally approved Massachusetts' Coastal Nonpoint Pollution Control Plan last fall. This makes Massachusetts one of the first four states in the country to receive such approval, along with Rhode Island, Wisconsin, and Michigan.

The conditional approval means that NOAA and EPA have sanctioned all of Massachusetts' strategies for dealing with coastal sources of nonpoint pollution, and have set up a timetable for the state to implement those solutions.

Written by Massachusetts Coastal Zone Management with participation by other state agencies, the plan outlines the methods for restoring and protecting the state's coastal waters from nonpoint source pollution resulting from stormwater, agricultural runoff, septic system pollution, and other sources. Specifically, strategies will address urban sources; marinas and boats; agriculture; forestry; hydromodification, which includes channel changes, and dam construction and use; stream bank and shoreline erosion; and wetlands.

ME leads Atlantic salmon protection efforts in state

Augusta, Maine — The National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS) withdrew a proposal in December to protect Atlantic salmon in seven Maine rivers under the federal Endangered Species Act. Instead, the fish will be protected by Maine's newly developed Atlantic Salmon Conservation Plan, which combines the efforts of state, federal, and private programs.

The state-designed plan — only the second of its kind in the nation approved for a fish species — addresses the potential impacts of aquaculture, forestry, recreational fishing, and a wide range of agricultural activities. It was developed during the last two years by a task force of scientists, academics, state employees, Native American sustenance fishers, conservationists, anglers, and private citizens appointed by Maine Governor Angus King.

The state plan was accepted jointly by

both NMFS and USFWS, the two federal agencies responsible for recovering threatened and endangered marine and freshwater fish, because Atlantic salmon spend their early life in fresh water, mature at sea, and then return to spawn in the freshwater stream or river where they were born.

The agencies will conduct joint annual reviews of whether further Endangered Species Act protection is needed for the salmon, taking into account factors including progress on Maine's plan.

USFWS plan would reduce lethal gull control measures

Hadley, Massachusetts — With the migratory seabirds nesting season fast approaching, the US Fish & Wildlife Service (USFWS) is seeking approval of a new management plan that would reduce, but not rule out, lethal gull control in Monomoy Island National Wildlife Refuge off of Chatham, Cape Cod.

USFWS submitted a final draft of its plan to US Department of Interior Secretary Bruce Babbitt in early February so that he can review it in time for measures to be put into place for the 1998 nesting season, which begins in April.

The agency's methods for managing the island during previous nesting seasons have included poisoning gulls that were colonizing parts of the island and preventing other seabirds from nesting there. Outraged Chatham residents, with support from animals rights groups, called for an end to the policy. In August, Babbitt called for further study of the practice.

Following a series of public meetings, a scientific workshop, and an independent review of its management practices on Monomoy by the Center for Coastal Studies in Provincetown, USFWS issued a draft 1998-2000 plan in December stating that it intends to use mostly non-lethal "harassment" methods to keep gulls, predators, and competitors out of certain areas. Some of these methods include establishing a field camp on-site early in each nesting season, firing shot guns with "cracker shells," and breaking up gull nests.

The agency promised to stop poisoning gulls on Monomoy "for the foreseeable future," but has not ruled out other lethal methods for controlling gulls on the island, including shooting them.

The Endangered Species Act (ESA) charges USFWS with protecting migratory birds such as endangered roseate terns

and piping plovers, listed as "threatened," but more recent legislation also requires the agency to manage refuges for diversity of species, even if some are not protected under the ESA.

USFWS officials say some gulls, which arrive earlier in the season than the other birds and take over their nesting territory, must be kept out of certain areas if other species are to reproduce. Sometimes gulls can be chased away, but USFWS has said in other cases it has had to kill the birds. Officials say controlling gulls has increased numbers of terns, plovers, and grassland nesting birds on Monomoy.

EPA releases mercury report

Washington, DC — The US Environmental Protection Agency (EPA) in December released its long-awaited report evaluating the human health and environmental impacts of air emissions of mercury, calling the document a full scientific assessment.

"This publication has been subjected to extensive peer review by independent scientists and health experts," said EPA Administrator Carol M. Browner. EPA stated that the report contains substantial input from industry groups, the public, and state, local, and federal government agencies.

EPA has been criticized for being three years late with the report. Critics say the delays have stalled action to control hazardous air emissions, but Browner said the agency "has already taken a series of actions to reduce emissions of mercury into the environment 50 percent by 2006."

The publication, *Mercury Study Report to Congress*, was required by the Clean Air Act Amendments of 1990. It estimates that all US industrial sources, such as electric utilities, municipal waste combustors, commercial and industrial boilers, medical waste incinerators, and chlor-alkali plants, emitted about 159 tons/144 tonnes of mercury into the air in 1995.

Mercury is a heavy metal that, with high exposure, can cause neurological problems. Mercury emissions to the atmosphere can enter waterways in rainfall and runoff, entering the food chain and building up as methyl mercury (mercury's toxic form) in the tissues of predatory fish, often eaten by humans.

The executive summary of the report is accessible at <http://www.epa.gov/airlinks> on the Internet.

Resources

Frogwatch program

This environmental education program for students, families, and youth groups uses hands-on activities to teach field observation, recording, reporting, and scientific measurement techniques applicable to the northern spring peeper as well as other species. Booklets cover freshwater habitats, the life cycle of amphibians, global and local environmental issues, and stewardship principles. For information, visit Frogwatch on the Internet at www.ednet.ns.ca/educ/museum/mnh/educ/frogwch/ or contact the Nova Scotia Museum of Natural History at (902) 424-3563.

Right whale info for mariners

An illustrated brochure, *Right Whales on the Brink*, includes tips for mariners on how to help protect the endangered North Atlantic right whale and its habitat. A supplemental waterproof card, *Guidelines for Mariners*, outlines precautionary measures to avoid harming the whales at sea. Sponsors include the Gulf of Maine Council on the Marine Environment, the Center for Coastal Studies, US Environmental Protection Agency, International Fund for Animal Welfare, and the Massachusetts Port Authority. For copies, contact the Gulf of Maine Council Secretariat at (617) 727-9800, ext. 406.

Sustainability courses on-line

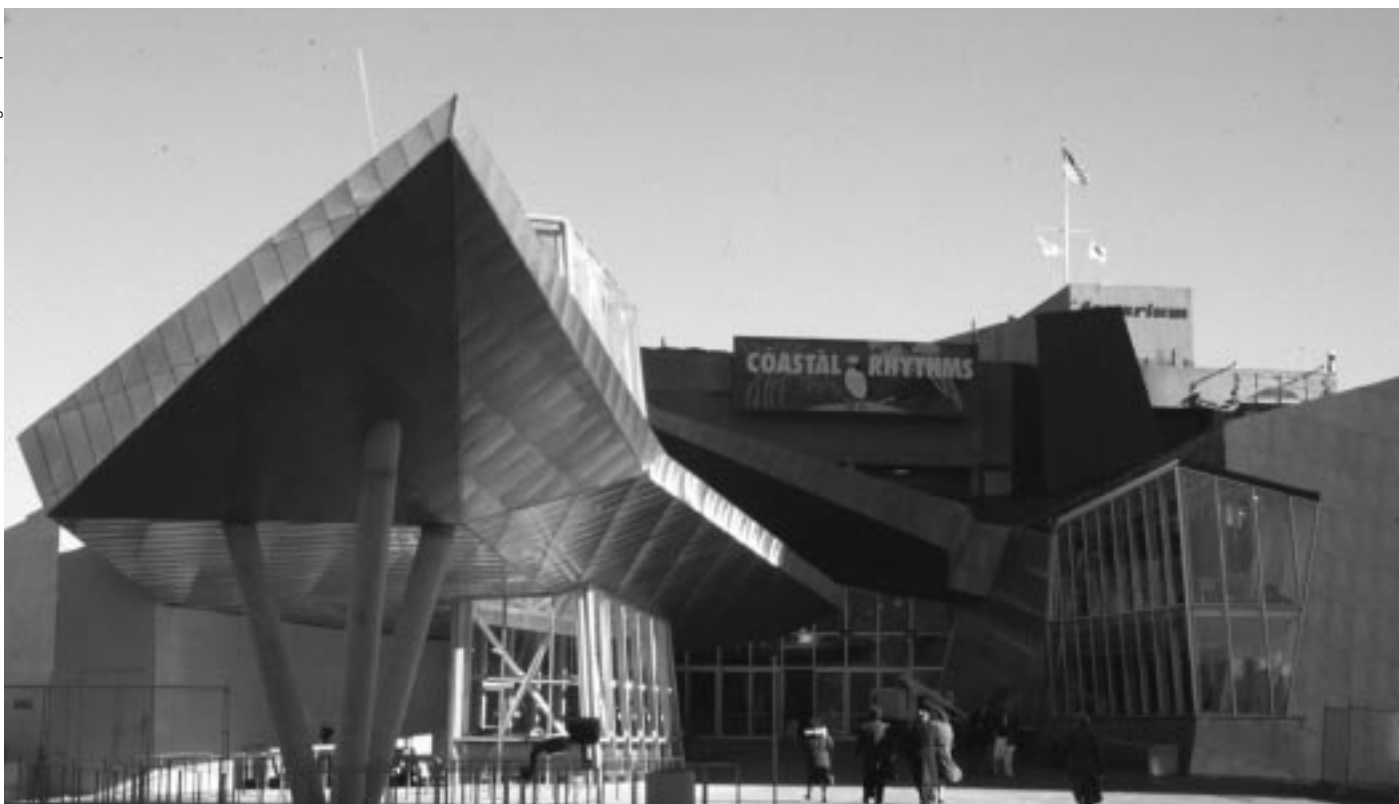
The University of California is offering on-line undergraduate level courses in global sustainability, exploring such topics as habitat transformations; the origin, evolution, and value of biological diversity; the major physical and biogeochemical processes in the world's oceans; and the effects of El Niño, pollution, habitat destruction, and over-fishing. Visit the program's web site darwin.bio.uci.edu/~sustain/index for more information.

Watershed map

For an 18" x 24" three-color map of the Gulf of Maine watershed (the same map featured on page 12 of the *Gulf of Maine Times*) while supplies last, contact (in the US) Massachusetts Coastal Zone Management, (617) 727-9530, ext., 420; Cynthia Lay, New Hampshire Coastal Program, (603) 431-9366; or Paul Dest, Maine State Planning Office, (207) 287-5305; (in Canada) Sue Browne, Nova Scotia Department of the Environment (902) 424-0126.

Pro sailor's textbook

Auxillary Sail Vessel Operations by Marine Maritime Academy alumnus and associate professor of marine transportation and nautical science Capt. G. Anderson Chase describes the fundamental principles and practices necessary for a person to progress from a recreational sailor to a professional mate or captain of yachts and passenger, training, commercial sailing, and charter vessels. Published by Cornell Maritime Press, the book is available by calling 1-800-638-7641 from the US, or (410) 758-1075 from Canada.



New England Aquarium opens new West Wing — Representing the first phase of the Aquarium's three-part expansion project to be completed in 2002, the 17,400 square-foot/1,618 square-meter wing, opened in January, includes a two-level changing exhibit gallery and a larger free outdoor harbor seal exhibit with views from above and below the water line. The Aquarium is well-known for its marine research as well as its work to educate the public about the marine environment.

The *Gulf of Maine Times*
is on the Gulf of Maine
Council's Website!
<http://gulfofmaine.org>

Council Currents

News from the Gulf of Maine Council on the Marine Environment

Council remembers Longard

Halifax, Nova Scotia — Arthur A. Longard of Halifax passed away December 20 at the QEII Health Sciences Centre VG Site.

Born in Halifax, May 14, 1942, he was the son of the late John R. and Evelyn (Nickerson) Longard. Educated in Halifax City schools, he graduated from Dalhousie University with a Bachelor of Science degree.

Longard is survived by his devoted wife Carol (Howlett) and son Mark, both of Halifax, one sister Nancy (Mrs. John Hood) of Yarmouth and her children David and Jennifer, and a multitude of friends.

Known to his friends and family as "Art," Longard faced his battle with cancer with a positive attitude and great courage.

Truly a man of the sea, he worked diligently to protect one of Nova Scotia's most precious resources as the province's long-time representative on the Gulf of Maine Council's working group; as an employee of the Federal Department of Fisheries and Oceans; and, since 1980, as Director of Policy, Planning and Coastal

Resources for the Nova Scotia Department of Fisheries.

Longard had a passion for sailing and spending time with friends at Sambro Creek. He was a member of the Royal Nova Scotia Yacht Squadron for many years.

A memorial service took place December 23 at St. Andrews United Church, Halifax. Memorial donations may be made to the Canadian Cancer Society, 5826 South Street, Halifax, Nova Scotia B3H 1S6.

Council hosts pipeline forum, announces grant awards

Boston, Massachusetts — A forum on natural gas pipeline proposals and announcement of \$50,000 in grants to nonprofit environmental organizations throughout the Gulf highlighted the Gulf of Maine Council's semi-annual meeting here December 12-13.

Companies seeking US and Canadian approvals to construct pipelines to transport natural gas from Sable Island Nova Scotia to markets in New England and Atlantic Canada described their proposals and fielded questions from Council members and business-sector representatives.

The Council also discussed other issues relating to sustainable use of the marine environment including creation of marine protected areas and problems associated with dumping of ballast water by cargo ships.

At a December 12 reception at Boston's Museum of Science, the Council recognized its 1997 Visionary Award winners (see story on page 4), and presented \$7,000 in grants to two Massachusetts organizations as part of its ongoing annual grant program for non-profit organizations working to protect and enhance the vitality of the Gulf of Maine. The Council presented a total of \$50,000 to 11 organizations Gulfwide in 1997.

In Massachusetts, the Boston Harbor Association (TBHA) received \$5,000



Photo: Suzy Field/Gulf of Maine T

At their semi-annual Council meeting, members recognize 1997's Visionary Award winners. From left are Council Members Trudy Coxe, Secretary, Massachusetts Executive Office of Environmental Affairs; Wayne Adams, Minister, Nova Scotia Department of Environment; Irene d'Entremont, MIT Electronics, Inc.; and Peg Brady, Director, Massachusetts Coastal Zone Management Office.

Coastal Wetland Restoration Database coming

Boston, Massachusetts — Managers, scientists, and consultants in the Gulf of Maine will soon be able to exchange information on past, present, and potential coastal wetland restoration projects using a database under construction for the Gulf of Maine Council's home page.

The Coastal Wetland Restoration Database will contain project-specific information including location, activity, current habitat conditions, costs, funding sources, and contacts. Also

posted will be information on restoration programs for particular species, such as seabirds and anadromous fish.

To contribute to the database, please submit information on www.gulfofmaine.org, the Gulf of Maine Council's homepage. Click on the "Habitat" icon and use the electronic forms provided, or contact Chris Cornelisen at Massachusetts Coastal Zone Management (617) 727-9530 ext. 249.

to develop and distribute an English/Spanish citizen's guide to educate people from diverse backgrounds about how to reduce stormwater pollution and restore Boston Harbor.

The Coalition for Buzzards Bay received \$2,000 to create signs to be placed along the shores of Bourne and Falmouth, Massachusetts explaining the environmental problems caused by litter and other marine debris. The organization will also use the grant to monitor the effectiveness of these signs on reducing marine debris.

"This year's grant recipients are wonderful examples of true local initiative to protect a magnificent environmental resource," said Trudy Coxe, Council Secretariat and Secretary of the Executive

Office of Environmental Affairs in Massachusetts.

The Council will next meet in June in Salem, Massachusetts. Visit gulfofmaine.org to learn more about the Gulf of Maine Council.

Your business can benefit...

...from becoming a corporate sponsor of high quality research and education programs throughout the Gulf of Maine region.

To find out how, contact Don Pohl at the US Gulf of Maine Association via E-mail at dpohl@world.std.com or by phone at (617) 728-0541.

Photo: Nova Scotia Department of Fisheries



Art Longard

In search of Gulfwise web sites

Raphael Herz
Gulf of Maine Web Site Coordinator

Lost on the web? Here are a few of the many sites that can help you find marine and ocean facts, maps, reports, and organizations pertaining to the Gulf of Maine region.

Gulf of Maine Council

The Gulf of Maine Council web site (gulfofmaine.org) serves as a clearinghouse of information on the Gulf of Maine and its watershed. It provides links to environmental data and reports; to the *Gulf of Maine Times* online; and to scientists, resource managers, educators, students, and other Gulf "netizens." The site also serves as a hub for communication about Council committees, projects, and activities.

In the Data and Information Library,

reports and data are available on a variety of marine and coastal issues, such as marine protected areas, protection of North Atlantic right whales, and the Gulfwatch marine monitoring program. The site also contains multiple links to similar web sites, including those of regional non-profit organizations and educational institutions, as well as an extensive list of web sites on ballast water and exotic species invasion.

Environment Canada

Environment Canada's (EC) Green Lane (www.ns.ec.gc.ca) is an impressive federal outreach effort unifying many agency services, and covering major environmental issues in Atlantic Canada. EC's programs and initiatives are listed alphabetically under Issues and Programs.

For example, under Environmental Assessment, find fact sheets for environ-

mental assessment considerations for Canadian aquaculture operations. The Weather section provides an easy-to-use interactive map where you can receive 10-minute weather updates and forecasts for Atlantic Canada.

Aquatic Network

The Aquatic Network (www.aquanet.com) is a great resource for aquatic services, databases, news, editorials, and products. Aquanet's far-reaching subject area includes aquaculture, conservation, fisheries, limnology, marine science and oceanography, maritime heritage, ocean engineering, and seafood.

The site provides extensive information, ranging from oceanography and marine journal contacts to fisheries organizations. Under the Scuttlebutt link, click on Mailing Lists for an E-mail list such as *GulfTalk*. In Subjects, the Maritime

Heritage topic covers Canadian and US sites such as Canadian lighthouses, the Titanic, and Amistad.

Seaweb

A site not to be missed, Seaweb (www.seaweb.org) is a wonderful collection of educational materials featuring great audio clips on topics such as codfish on the Grand Banks of Canada, or Take Reduction Teams that unite fishermen and scientists to reduce the accidental death of endangered marine mammals. Seaweb's *OceanUpdate Newsletter*, also available via E-mail, features stories on Nova Scotia's decimated sea urchin population and inbreeding in North Atlantic right whales.

The Internet world, like sand on a beach, is constantly changing, and new web sites emerge every day. Happy hunting!

GULF OF MAINE FACTS

- The water surface of the Gulf of Maine measures 79,000 square kilometers/ 33,054 square miles.
- The total land area of the Gulf of Maine watershed is 69,115 square miles/165,185 square kilometers.

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Public Service of New Hampshire

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Gulf of Maine Council on the Marine Environment

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