

Currents

• A Quarterly Newsletter of the Casco Bay Estuary Project •

Volume 4 No.1

Winter 1995

Computer Mapping and Protecting Casco Bay - An Important Link



Our ability to see where and how we interact with the world around us, and how we affect our surroundings, influences how we make good environmental decisions. Seeing our surroundings in Casco Bay and its watershed can encompass first-hand visual experience, or it can involve use of another important link: maps.

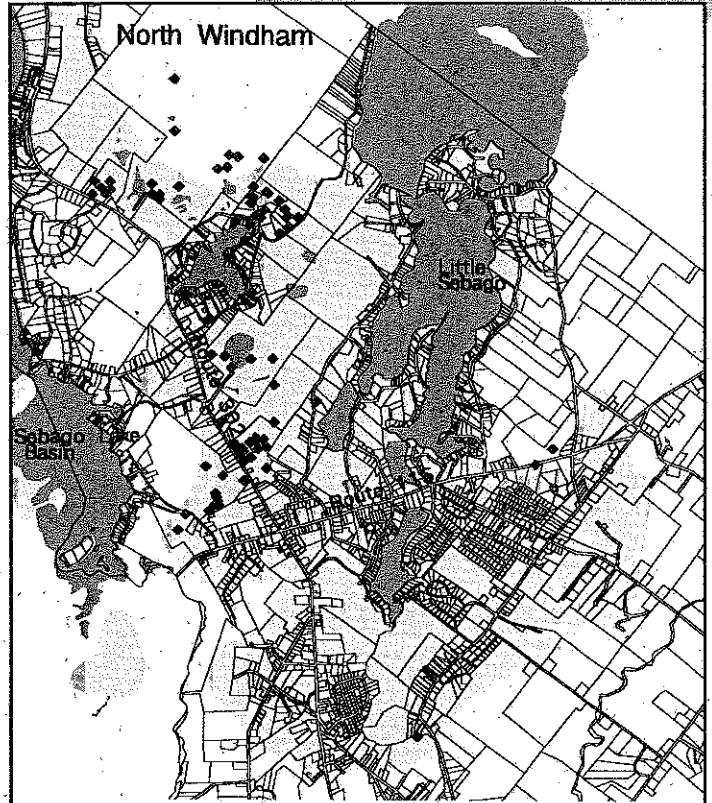
One of the most powerful planning tools to emerge in the past decade is computer-based mapping known as geographic information system (GIS). The Casco Bay Estuary Project is working on giving local officials this important state-of-the-art mapping tool to support sound environmental decisions, and ultimately better protection of Casco Bay.

GIS allows large quantities of geographic information - data layers such as critical natural resources, existing development, and drainage ways - to be combined, analyzed, and printed as maps. As a result, town officials can see the effects of their decisions in advance. This type of decision-making power will be instrumental in preventing the pollution of Casco Bay.

Since 1991 Data Manager Tom Burns has been gathering data and entering it into the GIS computer database, and has been helping a number of towns in the lower watershed with using this information. His focus has been on creating data layers important to planners: soil types, land cover, topography, land parcel boundaries, wetlands, roads and water bodies. Through a grant from the Project the City of Portland, and the Towns of Windham, Falmouth, Cumberland, Yarmouth, Brunswick, and Harpswell are already using GIS in their town offices.

"Examples of applications already abound," says Burns. "GIS technology is helping answer important questions about development trends in relation to natural resources. The short-term goal has been to input into the computer data base a critical number of data layers. The long-term goal is to ensure the continued use of the data by the towns and agencies who will be, in part, responsible for helping implement the upcoming Casco Bay Plan."

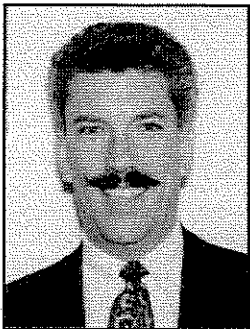
Watch for a schedule of GIS demonstrations in our next newsletter.



GIS applications are limited only by the imagination of the user. This illustration shows monitoring wells that were drilled to satisfy Windham's siting requirements for all of the development that occurred on North Windham's single-source aquifer since 1985. By combining the locations of the parcels, aquifer and monitoring wells on one map using GIS, it became clear to the Windham Town Council that the area south of Route 115, which comprises at least half of the aquifer, had virtually no monitoring data. This simple graphic was presented after the Council tabled a request from the Windham Conservation Commission to fund a monitoring project proposed by the U.S. Geological Survey. The Casco Bay Estuary Project was subsequently able to present this map which rekindled the discussion, resulting in passage of the monitoring proposal.

Letter from the Management Committee Chair

We are pleased to announce the hiring of Patricia Harrington as Project Director of the Casco Bay Estuary Project.



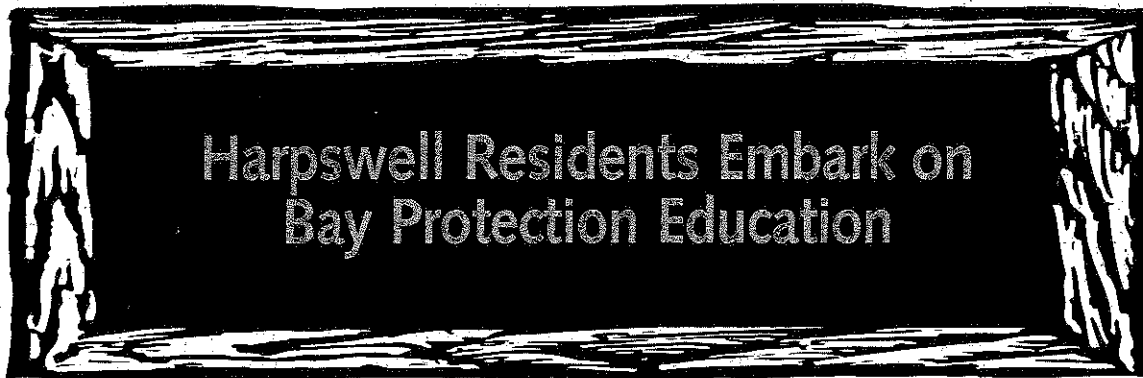
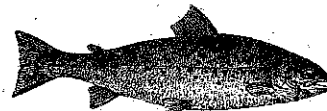
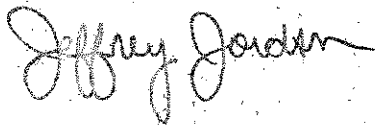
Patricia brings an outstanding background of professional and community service to the Project, having served as the Chief City Planner for the City of Portland and most recently as the Vice President of Fleet Financial Group in their Managed Assets Department. Patricia has also served as chairperson of the Freeport Planning Board, and is a past president of the Maine Audubon Society Board of Trustees.

As Project Director she will direct the development and implementation of the Casco Bay Plan, under policy guidance of the Management Committee. The Director is responsible for planning, directing, and coordinating activities of the project to ensure that the final Plan will work for the benefit of communities in the Casco Bay watershed.

The task ahead is to effectively communicate and involve the 41 municipalities of the watershed and involve the communities, individuals, and businesses in a partnership to change habits and activities that have been common for years. This won't be an easy task. I do believe that Patricia's municipal planning and business experience will complement the fine staff and management committee that has been assembled to develop a plan for Casco Bay.

We hope you will have an opportunity to meet her and share with her your ideas as we develop the Casco Bay Plan.

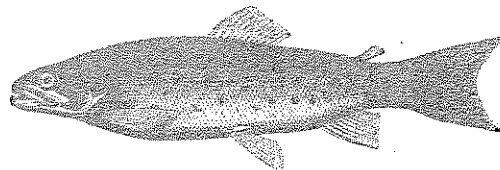
Sincerely,



The Harpswell Conservation Commission has completed an educational poster and video to inform homeowners and boaters about actions they can take to protect Harpswell's water resources - and ultimately Casco Bay. The two-sided poster provides information on how residents can reduce household hazardous waste, prevent septic systems from failing, practice "clean" boating, and reduce polluted stormwater runoff from lawns and driveways. The 30-minute video outlines water pollution issues, and suggests practical and simple steps individuals can take to help improve water quality, particularly people with individual wells and wastewater systems.

If you live in Harpswell and are interested in receiving a poster or viewing the video, contact the town at 833-5771 or Josie Quintrell, Chairperson of the Conservation Commission, at 725-8465. Businesses and marinas are encouraged to display the poster.

The project was funded in part by a grant from the Casco Bay Estuary Project.



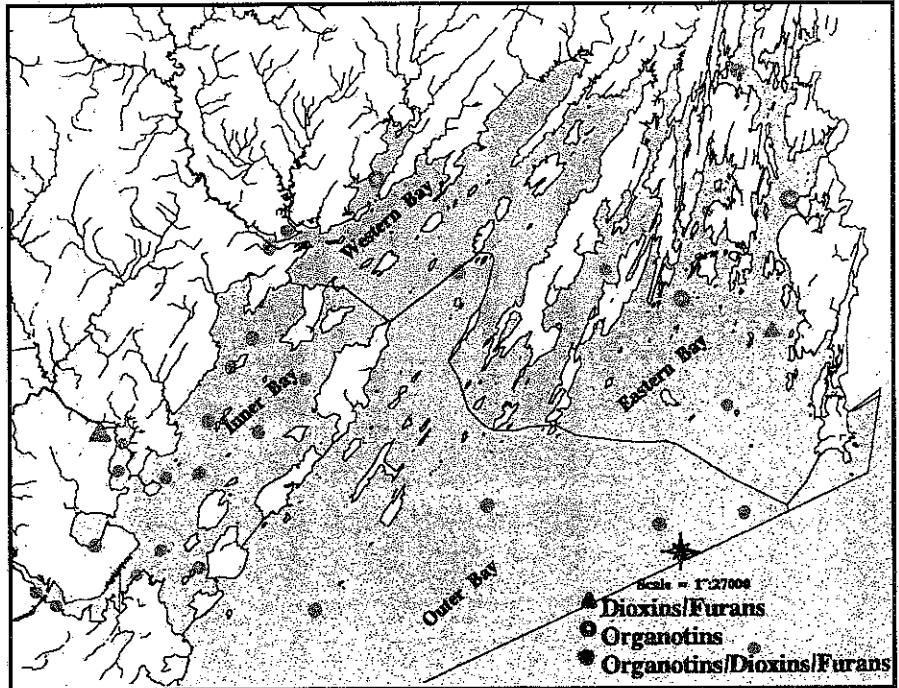
• Update on Project Studies •



Toxic Pollution in Casco Bay Being Studied

A study of selected contaminants in the sediment of Casco Bay, including dioxin, commenced in November, 1994. Field sampling at about 30 sites was conducted in November, and analysis will be completed by spring, 1995.

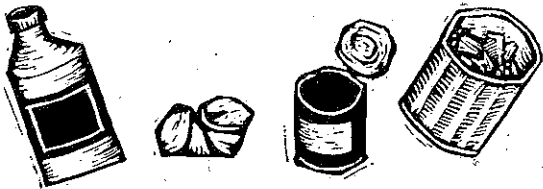
Texas A & M University was selected to study the distribution of dioxin and related chemicals, and butyltins in Casco Bay sediments. This project is a follow-up to a study undertaken by the Casco Bay Estuary Project in 1991 to assess levels of contamination of surficial sediments (trace metals, hydrocarbons, pesticides, and PCBs) at 65 sites throughout the Bay. The 1991 study, however, did not measure dioxins or butyltins. There is a limited amount of data for butyltin concentrations in sediment in Casco Bay and little data for dioxin in sediment.



Sampling sites for dioxin & related chemicals, November, 1994 Source: CBEP

Butyltins are an ingredient of anti-fouling paints, often referred to as tributyltin (TBT). The collection sites for butyltins were in areas in close proximity to marinas, shipyards, docking facilities, anchoring areas, and major shipping channels. A majority of the butyltin samples were collected from inner Casco Bay.

Dioxins are products of many processes that include chlorination steps. Paper mills, wood treatment facilities that use pentachlorophenol, steel mills, and incinerators are some of the potential sources of dioxin to the environment. Many of the dioxin samples will be collected from locations where their concentrations are suspected to be highest. Sampling for dioxin occurred all over Casco Bay, but mostly focused on the Presumpscot River, the Cape Small area, and inner Casco Bay.



Dirty History Completed



A recently completed a study titled *Historic Sources of Pollution in Portland Harbor* is now available to the public at area libraries or can be purchased from the Casco Bay Estuary Project. Funded by the Casco Bay Estuary Project and conducted by environmental historian Edward Hawes of Brunswick, the study provides the first comprehensive data on historic sources of pollution in Portland Harbor between 1840 and 1970.

Copies of the report are in town libraries in Portland, South Portland, Westbrook, Falmouth, Yarmouth, Freeport, Long Island, Cape Elizabeth, and Scarborough. In addition copies are at libraries of the University of Southern Maine, Westbrook College, Bowdoin College, Southern Maine Technical College, University of New England, and Maine Historical Society. Copies may be purchased from the Casco Bay Estuary Project. For more information call 207-828-1043.

In addition, a free ten-page fact sheet summarizing the study is available. Call the Project office at 828-1043 for copies.

Focus Groups and Public Forum Held in November

In November the Casco Bay Estuary Project held a public forum and a series of focus groups to solicit input on the initial reports and recommendations on the Project's five priority issues (toxic sediment contamination, onsite wastewater disposal, habitat loss, polluted stormwater runoff, and stewardship). Over 70 people attended both the forum and the focus groups.

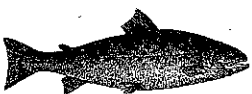
Focus group participants represented a cross section of interests including town government, marine businesses, developers, engineers, commercial landowners, homeowners, conservation organizations, farmers, foresters, fishermen, lobstermen, and clambers. A number of common themes emerged from the public forum, and in particular the focus groups:

- **Management Responsibility.**
Panelists repeatedly raised the question of who will be responsible for carrying out the Casco Bay Plan, and expressed a wide range of views on the use of existing agencies versus creating a new agency, and on the appropriate geographic focus of activities, i.e., local versus regional versus state approaches.
- **Establish Priorities for Action.**
The Project needs to articulate priority actions to the public.
- **Solutions Need to be Specific.**
Activities need to be carefully targeted to the problem and threats.
- **Availability of Funding and the Cost of Implementation.**
The actions in the Casco Bay Plan need to be realistic in light of the current economic and political climate.
- **Economic Impact on Area Residents and Property Owners Needs to be Considered.**
The Plan should consider the costs of proposed solutions against the projected benefits to assure that the proposals are realistic and do not create undue burden on certain groups.
- **Clear Definition of Problems and Threats.**
Virtually every group raised questions about whether the available information adequately demonstrates existing problems or threats to the Bay's resources.
- **Relationship Between Problems and Recommendations Needs Clarity.**
Panelists want to see a clear relationship between the problems or threats and the activities that are being proposed.
- **A Vision for Casco Bay is Needed**
Panelists want to see the Plan reflect a vision for the Bay.
- **Make Sure the Effectiveness of Existing Regulations is Understood.**
Concern was expressed about proposals for new regulatory activities, and about enforcement of existing regulations. Panelists from many diverse interests suggested that the existing regulatory environment is duplicative, overlapping, and confusing.
- **The Role of Education.**
Panelists repeatedly suggested that educational activities are very important to the long range management of Casco Bay.
- **The Importance of Information about Casco Bay.**
A number of panelists expressed concern about limited availability of high quality information on Casco Bay conditions. At the same time the Project got high marks from panelists for providing improved information about existing conditions. Panelists expressed hope that the Project will continue to collect information to allow judgements to be made about how the condition of the Bay is changing over time, and how various remedial or preventive activities are impacting the Bay.



The draft reports on the five priority issues are being revised by staff to reflect the range of comments we heard. During the winter and spring we will continue to solicit input to refine the draft recommendations.

We thank all participants for the time they generously and graciously gave us.





Working for Wildlife...and for You!

Lobsters, clams, bald eagles, terns, seals, Atlantic salmon, flounder, and you. We're all interrelated, and we are all part of the essence of Casco Bay's heritage. As barometers of the Bay's health, fish and wildlife measure the quality of our environment and help define the character of our own lives as well.

The Gulf of Maine Project, established by U.S. Fish and Wildlife Service in 1991, is dedicated to protecting living resources in coastal areas throughout the Gulf of Maine. According to Project leader Stewart Fefer, "The Gulf of Maine Project seeks opportunities to work in partnership with others to protect fish and wildlife habitat. The Casco Bay Estuary Project offers us the opportunity to focus our biological and technical expertise in Casco Bay. In return, we are providing Casco Bay Estuary Project and watershed residents with important information to protect fish and wildlife habitat."

Looking at the impact of land development on fish and wildlife habitat in the lower Casco Bay watershed



Currently, the Gulf of Maine Project is conducting two complex and exciting studies in coordination with the Casco Bay Estuary Project. The "Casco Bay Critical Habitats and Development Study" asks the question, "What would happen to fish and wildlife habitat if the 14 towns in the lower watershed developed land to the extent permitted by current zoning?" To answer that question, according to Gulf of Maine Project's Senior Biologist Dr. Arnold Banner, "We have predicted the pattern of future land use and how fish and wildlife will respond."

Satellite imagery is being used to identify and map current land use. Concurrently, the Gulf of Maine Project is identifying significant wildlife areas for colonial waterbirds, seabirds, wading birds, anadromous fish, freshwater fish, seals, and endangered species (bald eagles, roseate terns, piping plovers, and least terns).

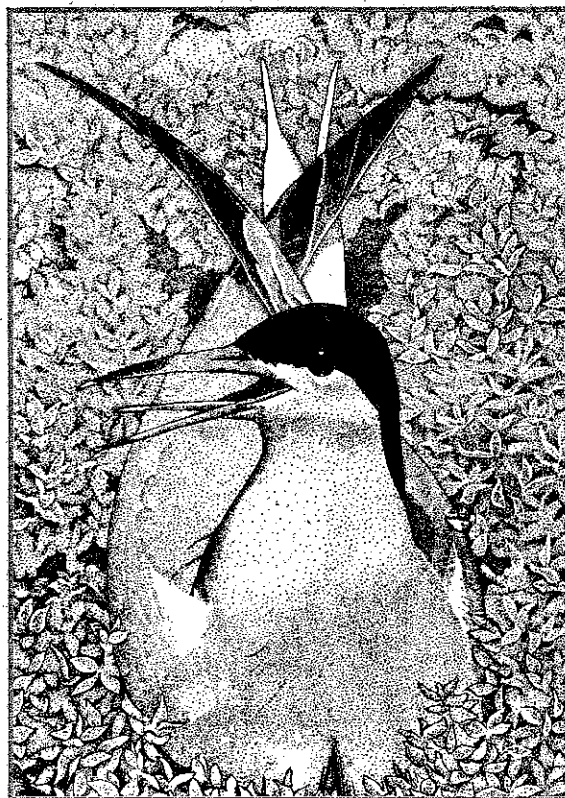
Next, critical habitats that could be threatened by current allowable development will be identified. "Once we gather and analyze the information, we will propose specific recommendations for the Casco Bay Plan, to guide fish and wildlife habitat protection efforts in the watershed," stated Banner.

Locating important marine wildlife habitats so they can be protected

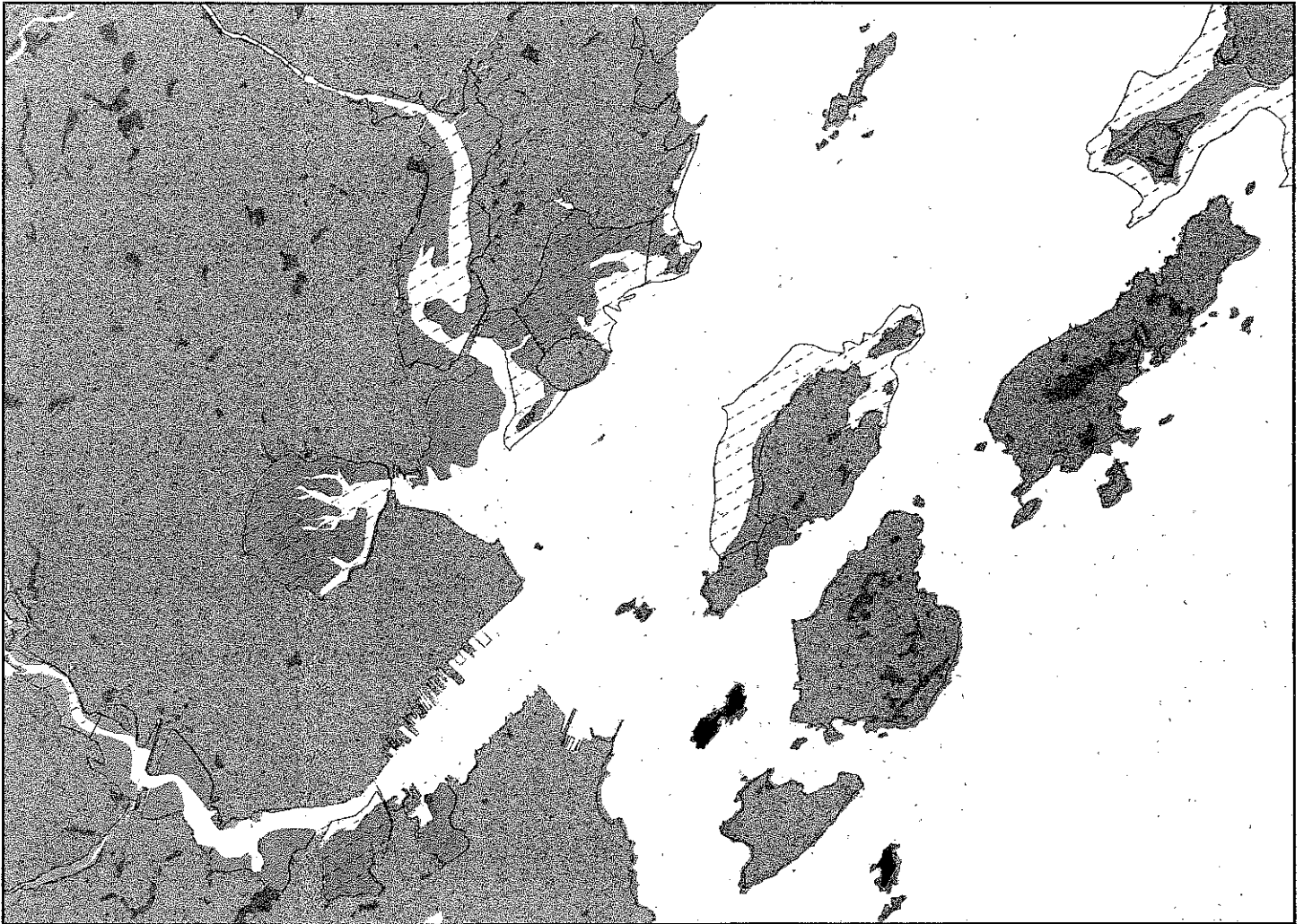
The Casco Bay/Sheepscoot Bay Habitat Modeling Study also promises to provide useful information for land use decision-makers. The Gulf of Maine Project and the National Oceanographic and Atmospheric Administration are developing models to identify critical habitat for eight estuarine and nearshore species. Selected for their ecological and/or commercial value, the species include American lobster, softshell clam, alewife, tomcod, mummichog, winter flounder, sand lance, and Atlantic salmon.




"Information on the distribution and abundance of marine species in the Gulf of Maine is relatively limited. Therefore, modeling will be used to fill some of the gaps and provide detailed information for Casco Bay," explained Dr. Banner. "Our habitat modeling work is basically a three-step process. We have already selected the priority species, and we have identified several physical and chemical factors -- temperature, salinity, depth and sediment type -- that might reliably predict species' distribution and abundance. Now, we are mapping characteristics of those factors in Casco Bay so we can determine the distribution and abundance of priority species."



Existing biological data from Sheepscoot Bay is more complete than data from Casco Bay. Therefore, habitat models are being developed and refined for Sheepscoot Bay by comparing modeling results with actual species distribution. Once habitat modeling is completed for Sheepscoot Bay, the same models will *continued on page 6*



Casco Bay Wading Birds



-  Wading bird breeding colony
-  Observed wildlife concentration areas (seabirds, waterfowl & wading birds)
-  Wading bird foraging habitat (tidal flats, saltmarshes, freshwater wetlands, rocky shore)

-  Mainland
-  Deep Water

This map illustrates data the U.S. Fish & Wildlife Service's Gulf of Maine Project is using in conducting its analysis for the Casco Bay Plan.

be applied to predict the location of critical fish and wildlife habitats in Casco Bay. Next, Gulf of Maine Project will map critical marine habitats, highlight threats and recommend protection strategies for the Casco Bay Plan.

The Gulf of Maine Project staff is diligently working behind-the-scenes to provide technical and biological expertise that the Casco Bay Estuary Project and resource decision-makers

can use to implement on-the-ground protection efforts. With the support of watershed residents, the future of Casco Bay looks a little brighter for wildlife...and for us.

Lois Winter, Outreach Specialist
Gulf of Maine Project, U.S. Fish and Wildlife Service
4R Fundy Road
Falmouth, Maine 04105
Phone: 207-781-8364





BAY CONNECTIONS

Aucocisco- A celebration of Maine's Casco Bay Region

The second annual "Aucocisco" is planned for March 10-19 in Portland and other locations around Casco Bay. Sponsored by Portland Downtown District and centered in Portland's historic downtown, Aucocisco explores the relationship between the waters of Casco Bay and the life that is nurtured in the surrounding region. Aucocisco features events highlighting the Casco Bay region's ecology, marine resources, history, and the arts.

As part of Aucocisco the Casco Bay Estuary Project will host "Bay Day" on March 11 at DiMillo's Restaurant on the Portland waterfront. Area conservation organizations will have exhibits and educational materials, and speakers will talk about Casco Bay conservation and pollution issues. It's even rumored that Mr. and Mrs. Fish may make an appearance. A schedule of events will be available by Portland Downtown District in late February. For more information call them at 772-6828.

By the way, the word "Aucocisco" (AW KO SIS KO) is what the Abenaki people, who inhabited this area prior to the Europeans, called Casco Bay. It means "great mud flat".



Sea Partners Work to Reduce Trash on Shoreline



Helping people learn ways to protect the marine environment is the goal of the new Sea Partners program offered to interested schools, community groups and industry by the Coast Guard.

"This is a great way to get environmental protection education to people of all ages and backgrounds," says LT Wischman. Previously known as Sea-Keepers, the Sea Partners program provides speakers to groups on such topics as:

- Effects of oil, hazardous chemicals, waste, and debris on the marine environment;
- Ways groups and individuals can take action to protect the marine environment;
- How marine environmental protection laws and regulations apply to various marine users.

The message of the Sea Partners program is ideal for educating interested people in how to protect Casco Bay from pollution. The presentations are free and are tailored for schools, recreational boaters, private groups, environmental organizations, and businesses in the maritime industry. Groups interested in scheduling a presentation should contact LT Steve Wischman of the Coast Guard Marine Safety Office at 207-780-3251 on weekdays between 7:30 AM - 4:00 PM.



"Water, Water Everywhere"

Judy Marsh continues to offer her popular in-school program "Water, Water Everywhere" to schools in the Casco Bay watershed. The program teaches children about the concept of watersheds by following water from the mountains to the ocean, and the importance of protecting water quality.

"My program makes children aware that the snow they ski on could be the water they swim in," says Judy Marsh, a former elementary school teacher and advocate of protecting Casco Bay. "It makes them aware of making decisions to protect water quality, and the importance of that in their lives." The program involves lots of physical activities, a slide show, and even singing. While designed for younger children (kindergarten through fifth grade), it is adaptable to grades 6-9. The program can last three hours to a whole day. Teachers interested in inviting Judy to do her free program can call her at 582-2579.

Teaching Children about Waste Management Issues

Maine Audubon Society is offering a workshop for teachers and other educators on ways to teach grades K-12 about waste management issues. Pathways to a Sustainable Future: A curriculum for Maine Schools Exploring Solid Waste Management Issues is a terrific new curriculum developed by the Chewonki Foundation with funding from the Maine Waste Management Agency. It is designed to raise awareness of students and educators about waste management issues, motivate them to take action, and help them to make a real difference in the earth's future. The workshop will be at the Waynefleete School in Portland on April 5 & 12, 3:30 - 5:00. The fee is \$5, and teachers can earn 0.5 CEU. For information call 781-2300.



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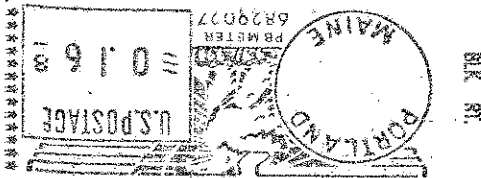
Mr. Tom

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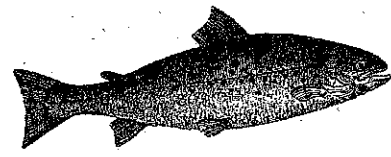
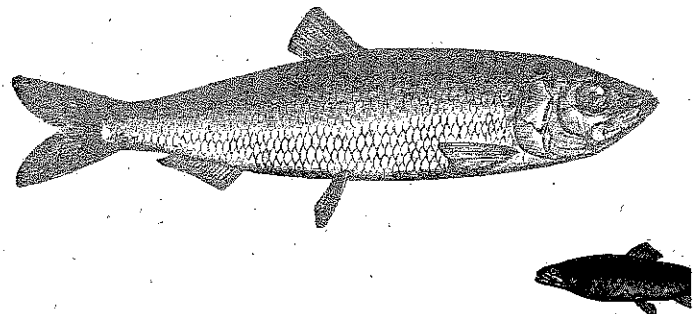
04103

Portland, ME

312 Canco Road



Casco Bay Estuary Project



The public is invited to attend Citizen Advisory Committee (CAC) meetings to help develop the Casco Bay Plan. The Plan needs to work not only for the resources of Casco Bay and its' watershed, but for the people, too. We need your input!

Citizen Advisory Committee
Chairpersons: Victoria Powers, Portland
Jean Dyer, Chebeague Island
Peter Rice, Yarmouth
Kevin Gildart, Bath Iron Works

Next Meeting:
March 7, 1995 - Casco Bay Ferry Terminal Conference Room,
Commercial Street, Portland

All meetings are held in the evenings between 7:00 - 9:00. To get on the agenda mailing list or for more information call the Project at 828-1043.

Currents is produced quarterly by the Casco Bay Estuary Project and is funded by the U.S. Environmental Agency (E.P.A.) and the State of Maine.

<i>Project Director:</i>	Patricia Harrington
<i>EPA Coordinator:</i>	Mark Smith
<i>Project Scientist:</i>	Lee Doggett
<i>Local Government Coordinator:</i>	Sherry Hanson
<i>Public Outreach:</i>	Anne Payson
<i>Data Manager:</i>	Tom Burns
<i>Administrative Assistant:</i>	Paula Ashton

Casco Bay Estuary Project
312 Canco Road, Portland, ME 04103
207-828-1043 Fax:207-828-4001