

Currents

• A Quarterly Newsletter of the Casco Bay Estuary Project •

Winter 1992

Meet the Staff of the Casco Bay Estuary Project

Lee Doggett, of Pownal, is a Maine native who comes to the project with a strong background in marine biology. A graduate of Colby College, where she majored in biology, she has been quality assurance manager of an environmental consulting firm that tests pesticides' effects on fish and wildlife. As principal investigator for the Bigelow Laboratory for Ocean Sciences in Boothbay, she wrote major sections of the U.S. Fish and Wildlife Service's "Ecological Characterization of Coastal Maine", conducted a coast-wide intertidal sampling program using volunteer labor, and was a co-principal investigator on the National Marine Fisheries Service-sponsored Casco Bay sampling program. Earlier in her career she spent a lot of time peering down a microscope at starfish, worms, insects and zooplankton (tiny animals that live in the water column), worked at sea on groundfish and zooplankton surveys, raised juvenile lobsters and spent weekends baby-sitting seals and other marine life at the aquarium at Boothbay Harbor.

Lee grew up in Windham and Westbrook, and summered in Naples on Sebago Lake. She is keenly aware of the changes that have taken place in the watershed of Casco Bay. She likes to sail on Casco Bay in a 32-foot wooden yawl with her parents, who live in Westbrook.

Tom Burns, of Portland, is the project's data manager. Formerly he was a senior environmental planner for the Greater Portland Council of Governments, where he honed his skills managing geographic information systems (see story on page 3). As data manager, Tom manages an enormous quantity of information, covering everything from oil spills to shellfish. Despite the technical nature of his job, much of his time is spent working with people in town halls, businesses and schools to find and share information. Tom graduated from the University of Maine in 1975 with a B.S. in political science, and went on to the University of Maine to get a Masters of Public Administration.

Supporting the staff is project assistant **E.J. Hampson** of Hallowell. She came to the project from a position as Committee Clerk for the Joint Standing Committee on Energy and Natural Resources of the Maine Legislature. Her strong interest in government affairs led her to serve as Legislative Information Assistant, and as a legal proofreader for the state Legislature. She studied government at the University of Maryland and holds a general paralegal certificate. Added to her gubernatorial skills is a love of wooden boats and a personal concern for the coastal environment fostered by a family background of fishermen and boat builders.

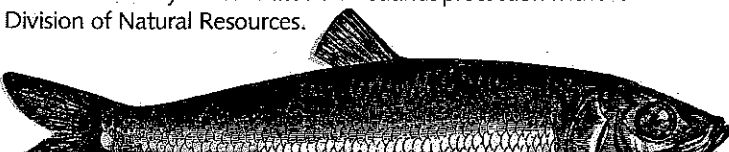
Bob Moore, of Freeport, is the Public Outreach Coordinator. He came to the project from a diverse background in science and communication -- he's produced documentary education and commercial videos -- and most recently concentrated on wetlands protection with the DEP's Division of Natural Resources.

Bob graduated from Kenyon College in his home state of Ohio with a B.A. in history, has a Master of Science in broadcast journalism from Boston University and a Master of Environmental Science from Yale. As Public Outreach Coordinator, Bob will be preparing newsletters and fact sheets, organizing programs for the Citizen's Advisory Committee throughout the Casco Bay watershed, and building coalitions to foster the project goals.

Assisting the Maine contingent are **Ann Rodney** and **Mark Smith** from U.S. EPA in Boston. Both bring their specific expertise to the project: Mark, Lee's co-coordinator, manages the day-to-day project management details and sees to it that the project is on time and on budget; Ann contributes an expertise in outreach and education gleaned from years of working with other National Estuary Programs in the Northeast.



Top row L to R; Burns, Moore, Smith. Bottom row R to L; Hampson, Rodney & Doggett.



Works in Progress

Sediment Sampling Study Results Due in March 1992

The Casco Bay Estuary Project has already started digging up information -- literally -- on Casco Bay sediment.

With help from the staff at the University of Maine's Darling Marine Center, the Department of Environmental Protection and EPA, the Darling Center's research vessel collected samples from 65 Casco Bay sites on August 8, 9, and 10.

The samples are now being analyzed by Texas A&M University researchers for organic carbon and nitrogen, sediment grain size, and 64 contaminants, including heavy metals (such as lead, mercury, and copper), polycyclic aromatic hydrocarbons (PAH's, by-products of petroleum distillates), polychlorinated biphenyls (PCB's, known carcinogens frequently used in power transformers), and pesticides.

The sediment study will also look at historical data from previous Casco Bay studies. The results, expected in March 1992, will offer scientists a picture of the location and concentration of toxic contamination in Casco Bay.

"We need to have a feel for where the hot spots are," says Lee Doggett, Casco Bay Estuary Project Coordinator. "Once we know that, the next step is to take core samples from the hot spots, which will enable us to determine whether the contamination is getting worse, less or staying the same. These are steps that need to be taken before any management decisions can be made," says Doggett.

Gaps in available scientific data became obvious at the outset of the project, and the Casco Bay Estuary Project has already begun work filling in where the data needs are greatest.

The sediment study began in May 1991, with the Casco Bay Estuary Project's request for proposals.

After reviewing proposals, the Project's Technical Advisory Committee awarded the study contract to the Geochemical and Environmental Research Group at Texas A&M University, nationally known for its chemical analysis work. EPA provided 75 percent of the funds for the \$100,000 contract.

State of the Bay

The Casco Bay Estuary Project has been active in researching and gathering information for the State of the Bay report, due for release in Spring 1992. The report will compile all existing information into one readily accessible source. By identifying gaps in existing knowledge, the State of the Bay report will provide the basis for deciding future information needs.

The result will be a scientific and social overview of Casco Bay -- a picture, or a montage of pictures, reflecting the health and richness of the waters and landscape of the bay as we know it. Over the next three years, the Casco Bay Estuary Project will help bring that picture into clearer focus.

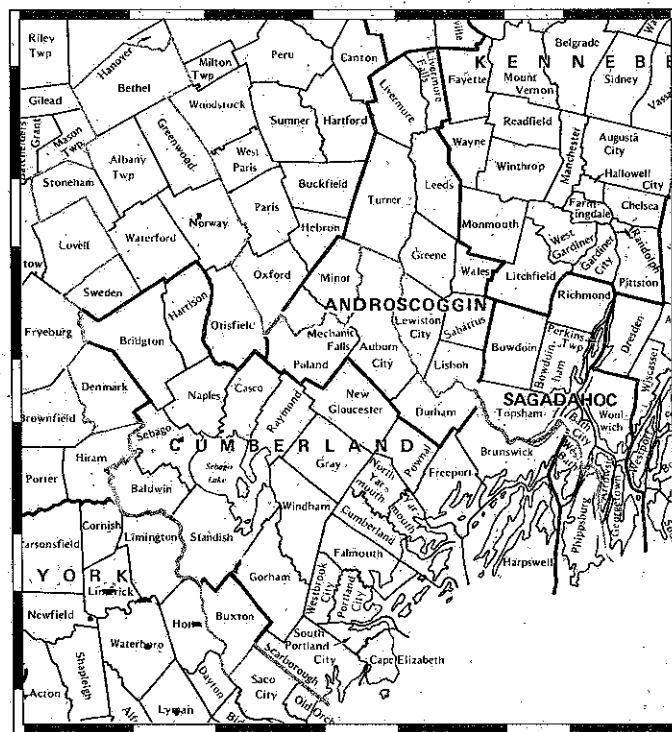
Preliminary Draft Due 1992

The State of the Bay report is a crucial first step toward the goal of the Casco Bay Estuary Project -- development of a comprehensive conservation and management plan (CCMP) for Casco Bay. A preliminary draft of the

management plan will summarize the estuary's problems, rate their severity, and offer ways to attack the problems through detailed action plans. An important step toward the preliminary CCMP will be to develop the Casco Bay Estuary Project's two-year work plan. This is scheduled for final approval by the Management Committee at the end of March 1992.

Keep in Touch!

The Casco Bay Estuary Project's involvement in local and regional projects is growing now that we have full staffing and are up and running. We will feature more projects in upcoming "Currents" -- so stay tuned. If you read about a project that might work in your town, give us a call or write us and we can fill you in on the details and put you in touch with the right people. Making connections is what we do best!



What is the Casco Bay Watershed?

Casco Bay receives fresh water from three major rivers systems: the Presumpscot, Royal, and Fore Rivers. The most densely populated portion of the Casco Bay watershed is the Portland metropolitan area along the Fore River. The Presumpscot and Fore Rivers and Back Cove have historically received higher contaminant loadings than other regions of the bay. The Royal River receives less direct pollution; its pollutants are from run-off and other non-industrial sources.

The geology of the coast helps determine the nature of the bay's floor -- for example, whether it's muddy or rocky. These characteristics are important because they are the habitat for the bottom dwelling animals. The Technical Advisory Committee has divided the bay into five geologic regions based on different bottom characteristics.

It also appears the Androscoggin and Kennebec Rivers, which empty into the ocean to the north around the corner from Cape Small, may influence Casco Bay. The Casco Bay Estuary Project has included the easternmost region of the bay seaward of Cape Small in order to include influence from the plume of the Androscoggin and Kennebec Rivers.

Project's GIS Puts Harpswell on the Map

Data Manager Tom Burns has been busy gathering and mapping data from all over the Casco Bay watershed on a computer. The geographic information system, or GIS, places geographic data such as rivers, roads and tax maps on to a computer, producing a base map of an area that can then be used as a tool in making land-use decisions.

Since Burns came on board, he has been working closely on a pilot GIS project in Harpswell.

Harpswell was chosen because of its long shoreline. In fact, Harpswell comprises 40 percent of the entire coastline of Casco Bay.

Starting with an outline on the computer screen of the town boundaries from a U.S.G.S 7.5-minute topographic map, town office manager Dawna Black and Burns went to work transferring parcel boundaries onto the map. They finished with a completely digitized town base map that shows lots, roads, and shoreline. The GIS system is then supplied with town records for each parcel, enabling a user to point to any lot on the map and instantly call up on the screen all the tax information -- size, land area, buildings, and their present valuation.

Up to this point, what has been described is a faster, more efficient way of storing and accessing existing information. And, while it may take a lot more time, a person can accomplish the same feat in a town office that still uses card files, pencils, and paper maps.

The greatest asset to having a GIS system is the ease with which it makes ponderous quantities of information accessible. To a town like Harpswell working hard on revising its five-year comprehensive plan, it's already a valuable tool. The computer map can calculate the town's total wetlands area; if the 75-foot shoreland zoning setback is increased to 100 feet, the GIS system will not only re-draw that map, it will calculate the total land area that increase represents.

Having geographic data so readily available can mean enormous savings to the town, since huge sums are spent buying and revising color-coded maps during the comprehensive planning process.

Black points to an overlay on the map that plots the location of overboard discharge wastewater treatment systems in town. A galaxy of stars appears on the map, each representing a system. The presence of an overboard discharge by law requires shellfish beds in the vicinity to be closed. "By looking at the picture of how many overboard discharges there are, suddenly you can see the magnitude of the problem," says Black. "It's significant for Harpswell because we have 230 miles of coastline."

"The GIS system is more than a handy, efficient way of storing information," says Burns. "It's a way to make environmental data accessible when making land use and zoning decisions. As a result of the data compilation in Harpswell, we can recognize areas where action needs to be taken.

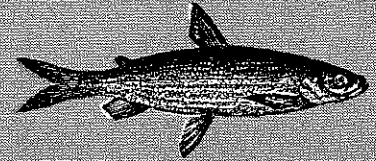
Burns executes a few computer commands and the shoreline of Harpswell appears awash in red. The color indicates where the Department of Marine Resources has closed shell fish beds. The computer tells us it represents 75 percent of the town's shellfish beds.

By itself, GIS won't solve Casco Bay's myriad problems; it's a tool that helps town officials make the hard choices in managing their town's environmental resources.

Towns interested in developing a GIS system should contact Chris Kroot at the Maine Department of Environmental Protection, or Tom Burns at the Casco Bay Estuary Project, at 289-4292.

In our next issue of "Currents" we'll look at the Casco Bay Estuary Project's other GIS projects: a non-point source pollution study in two sub-watersheds of the Stroudwater River in Gorham, and a detailed look at the Fore River watershed.

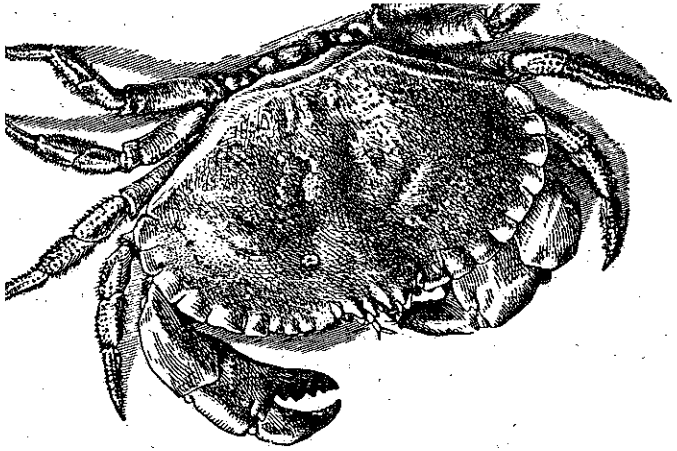
Do You Know?



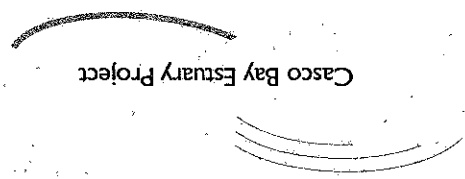
1. How many miles of shoreline are around Casco Bay?
2. How many acres of clam flats are in Casco Bay?
3. What percent of Casco Bay's clam flats are closed?
4. How many towns are in the Casco Bay watershed?
5. How far inland Casco Bay's watershed reaches?
6. What are the three major rivers emptying into Casco Bay?

Answers

1. 575;
2. 11,234;
3. 45%;
4. 40;
5. to Bethel, 60 miles inland;
6. The Royal, Presumpscot, and Fore Rivers



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3. If you or anyone you know would like to learn more about the project and receive this newsletter, please have them call (207) 879-6328 or send their name and address to:

Bob Moore
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Portland, ME 04103

C a l e n d a r

Preliminary Draft of Comprehensive Conservation and Management Plan (CCMP), due Fall 1992.

Year 2 workplan due Spring 1992.

Stay Tuned for Announcements of:

MiniGrants, February 1992

A Public Information workshop series this Spring featuring speakers and two-way dialogue. To be held evenings in locations throughout the Casco Bay watershed.

A meeting with presentations by the Texas A&M University staff showing the results of the Sediment Contaminant Study. Open to the public. Will be announced this Spring.

Volunteer water quality monitoring program to be announced this Spring.

