

Currents

• A Quarterly Newsletter of the Casco Bay Estuary Project •

Volume 3 No. 2

Spring 1994

WATERSHED MANAGEMENT: PROTECTING CASCO BAY BEHIND THE SCENE

Casco Bay's health is directly related to the quality of the water flowing into it. From as far northwest of Casco Bay as Bethel rivers, streams, brooks, and lakes in 41 towns are ultimately connected to the Bay. Promoting environmentally sound watershed management is an important way to protect Casco Bay.

What is a watershed? A watershed is the area of land which drains into a water body. A watershed's area is defined by the ridges of land which determine the direction of flowing water. Water within a watershed will eventually flow to the water body of concern.

Watersheds act like natural transportation systems which enable water to move over the earth's surface. Drainage ways consist of both natural features (rivers, streams) and man-made systems (storm sewers, roadside ditches, retention ponds). Any part of the landscape exposed to rainfall acts as a collecting surface. In areas largely undeveloped most of the collection surface consists of forestland and fields, such as in much of the upper part of the Casco Bay watershed. However, roof tops, roads, driveways, lawns, and parking lots are also important surfaces in developed parts of the watershed, particularly in the greater Portland area.



Water transported by the drainage network is sometimes retained in lakes, ponds, and wetlands before ultimately reaching the ocean. The Casco Bay watershed has some major retention areas, such as Sebago Lake, Little Sebago Lake, Highland Lake, and a myriad of other water bodies, particularly in the upper watershed. Water in the upper watershed can take years to reach Casco Bay; for example, water entering Sebago Lake can remain for five years before continuing downstream to Casco Bay via the Presumpscot River. Subwatersheds closer to Casco Bay impact the Bay more directly.

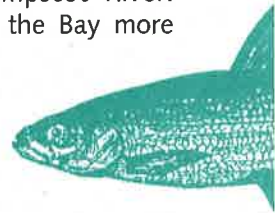
Why Do We Care About Watersheds?

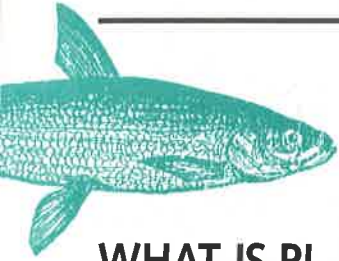
Clearing land, building new homes, paving roads, building new parking lots, and filling wetlands impacts natural drainage systems. One new parking lot or house may not seem to have much of an impact, but when multiplied throughout the watershed such development can adversely affect drainages, and water quality. Stormwater runoff can occur with more intensity, sometimes carrying pollutants into nearby water bodies and causing property damage.

Watershed planning means working with the watershed, not against it. Appropriate watershed management measures, known as "Best Management Practices" (BMP's), can help protect water quality, reduce soil erosion, avert property

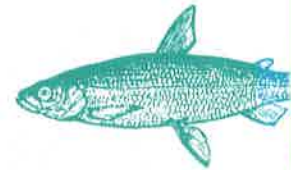
damage, reduce algae blooms in lakes and ponds, and conserve important water-retention (and wildlife) areas such as wetlands. The Project plans to include watershed management recommendations in the draft Casco Bay Management Plan due in April, 1995.

Retaining vegetated buffer strips along water bodies is an important watershed protection measure.





CURRENT ROYAL RIVER WATERSHED MANAGEMENT EFFORTS



WHAT IS PL-566 AND WHAT DOES IT HAVE TO DO WITH THE CASCO BAY ESTUARY PROJECT?

The Royal River watershed will receive special attention from the Soil Conservation Service (SCS) and the Cumberland County Soil and Water Conservation District (CCSWD) in July, when they begin developing a watershed management and implementation plan for the Royal River watershed and coastal towns from Yarmouth to Phippsburg.

In October 1993, SCS conducted a preliminary investigation of the Royal River watershed and coastal town watersheds (northeast of Yarmouth) and determined that this area is eligible for assistance under the Watershed Protection Act, Public Law 85-566 (PL 566). The objectives of this new action plan are to prevent damage from erosion, floodwater, and sediment; to further the conservation, development, use and disposal of water; and to further the conservation and proper use of land. The planning process will take one to two years and will result in the water quality protection measures. The implementation phase, which will follow the planning process, may continue for as long as ten years.

The Royal River watershed is 256 square miles in area, and includes 13 towns and part of one city (Auburn). The Royal River is important habitat for fish as well as waterbirds, muskrats, beavers, and otters. Anadromous fish such as alewife, smelt, shad, and possibly salmon travel from Casco Bay up to the Royal River to spawn. Important recreational fish in the watershed include several species of trout, perch, pickerel, and bass.

Soil erosion is a significant problem in the watershed. The area contains soils which, for the most, are highly erodible or have the potential to be highly erodible. Three major sources of erosion are urban development, timber harvesting, and road ditch erosion. Gravel and clay mining and agriculture are also sources of sediments and/or pollutants.

The planning process will include an inventory of nonpoint sources of pollution throughout the Royal River watershed and coastal town watersheds, and recommendations for management measures that will correct these problems. The Casco Bay Estuary Project will play an important role through ensuring that municipalities are actively involved in developing this plan.

CHANDLER BROOK PROJECT

In July the Cumberland County Soil and Water Conservation District (CCSWCD) will begin the Chandler Brook Watershed Project. This brook is a sub-watershed of the Royal River watershed, covering over one-third of the Royal River watershed's land area. The Chandler Brook watershed spans parts of the towns of North Yarmouth, Pownal, New Gloucester, Freeport, Brunswick, Auburn, and Durham. This project is funded by the U.S. Environmental Protection Agency under Section 319 of the Clean Water Act; Section 319 provides funds for the State's nonpoint source pollution program and demonstration projects. The project will run for two years and will involve a number of different components including:

- *Designing and constructing Best Management Practices (BMP's) demonstration projects on ten sites within the watershed. The goal is to reduce nonpoint source pollution in the watershed on agricultural, timber harvesting, and construction sites. Funding will be provided to the landowners on a cost-share basis.*
- *Working with municipal road crews to include BMPs in their future maintenance activities and provide technical assistance as needed. The goal is to help eliminate roadside erosion which contributes sediment to Chandler Brook and its tributaries.*
- *Developing a public outreach program to raise public awareness about non-point source pollution. Activities will include organizing a steering committee, obtaining computer-based maps of the watershed, organizing technology transfer workshops, developing small farm fact sheets, and organizing "Chandler Brook Week".*

If you have questions or would like to serve on either of these project's steering committee, please contact the CCSWCD at 839-7839.

CASCO BAY ESTUARY PROJECT UPDATE

1994 is proving to be another busy year for the Casco Bay Estuary Project. Our previous newsletter described several of the 1993-94 work plan's technical studies now underway, such as the Casco Bay circulation study and the Maquoit Bay study. On-going efforts include continued funding of Friends of Casco Bay's volunteer water quality monitoring program at over 60 stations around the Bay, and outreach efforts to educate the public and municipalities about issues and pollution threats facing Casco Bay.

In March, the Management Committee approved the Project's 1994-95 work plan. Activities are tied to the Project's five priority issues, and include developing five reports ("characterization reports") to better characterize each issue:

Impacts from development will be characterized by mapping six habitat themes (salt marshes, freshwater wetlands, tidal flats, islands, subtidal waters, edge zones, lakes, and rivers and streams) within the lower Casco Bay watershed. Threats to these habitats will be characterized in two ways: 1) current zoning controls in and adjacent to these habitats will be mapped to show highest risk areas; and 2) the biggest threats to these habitat themes will be identified by reviewing past activities in and adjacent to the habitats to determine what types of development have had the most significant impact on the habitats.

Impacts from stormwater runoff will be characterized by summarizing national and state data on stormwater impacts on water quality, and by conducting an inventory of nonpoint sources in one or more subwatersheds. The impacts will be further characterized by conducting either a small but intensive study of stormwater impacts, or a demonstration project to show that proper stormwater planning is no more expensive than poor planning.

Impacts from individual wastewater systems will be characterized by analyzing existing data to determine the number and types of septic system failures that occur. Also, because shellfish bed closure is the most significant current impact of individual wastewater systems, the reasons that shellfish beds are closed will be described. This will allow recommendations to be developed that address all reasons for shellfish bed closures.

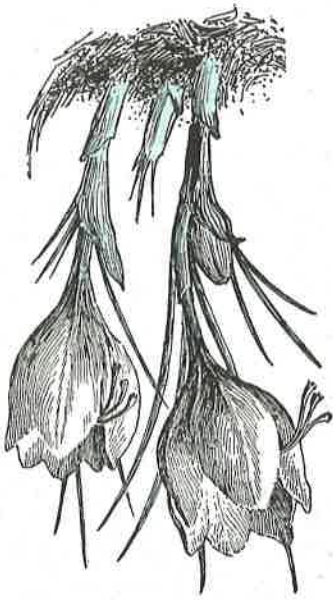
Impacts from contaminated sediments have been characterized by sediment studies conducted in 1991. This year all the data will be put into a single database so that it will continue to be available in the future. In addition, sediment sampling will be conducted in Casco Bay in 1994 for dioxin and tributyltin.

Drafts of the characterization report for each priority issue will be available to the public by fall 1994. These reports will provide important background information as we develop the draft Casco Bay Conservation Management Plan, due in April 1995.

Five Ways You Can Help Protect Casco Bay

Fertilizers and Pesticides at Home

- 1 **Tailor lawn treatments to the special needs of your soil and vegetation. Test your soil, use low maintenance grasses, and apply the right fertilizer sparingly when the soil is moist and there is little likelihood of immediate heavy rain.**
- 2 **Limit the use of pesticides in your garden and lawn by substituting natural products and techniques.**
- 3 **Only use what you need to use; "a little more" does not mean "a little better". Check labels for the proper times and application rates.**
- 4 **Avoid getting pesticides and fertilizers on sidewalks or driveways; they can wash into storm drains or nearby water bodies.**
- 5 **Slow-release fertilizers are the best choice to supply the nutrient a lawn needs without allowing excess nitrogen to leach into the ground or surface waters.**



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Casco Bay Estuary Project

C a l e n d a r

June 7 - Citizen Advisory Committee Meeting
 7:00 - 9:00 PM, Yarmouth Community House, Yarmouth
 Public is invited to attend the Casco Bay Estuary Project's
 Citizen Advisory Committee meetings to help develop Casco
 Bay Management Plan, and raise public awareness about
 Casco Bay. Call 828-1043 for information.

June 9 - "Following the Flow of the Bay"
 7:00-8:00 PM, Machine Tool Auditorium, Southern Maine
 Technical College, South Portland
 University of Maine scientists have developed a computer
 program to track Casco Bay's complex water circulation.
 Researchers will explain how the Bay moves, and how this data
 will help to better manage Casco Bay. Free, open to the public.

June 25 - "Shoreline Buffer Planting Workshop"
 1-4 -PM, West Cumberland United Methodist Church,
 50 Blackstrap Rd. Cumberland
 Dept. of Forestry specialist will present information on erosion
 control planting materials and techniques. Sponsored by For-
 est Lake Association. Free, open to the public. For more
 information call Bob Tellefson, 657-4618

July 12- "Septic system Maintenance Workshop"
 7-9 PM, West Cumberland United Methodist Church,
 50 Blackstrap Rd. Cumberland.

Experts will discuss septic system design, operation, mainte-
 nance requirements. Sponsored by Forest Lake Association.
 Free, open to the public. For more information
 call Brian Burwell, 829-3646.

July 16 -"Lake Lot Workshop: The Problems and the Cure"
 9:00 AM - 12:30 PM, Sabbathday Lake, New Gloucester
 Workshop for lakefront property owners and conservation
 commissions covers erosion, run-off, fertilizers, vegetation
 and buffers, driveways, camp roads and retention ponds.
 Contact Leonard Brooks, New Gloucester Water Resources
 Committee, at 926-4597 (Monday-Friday, 8:30-4:30).
 Free, open to the public.

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.

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