Troubled Waters: The New York Bight

by Donna Edgar, Specialist, Stony Brook

Editor's note: This article is the first in a series on the New York Bight, the 15,000 square miles of water bound by Long Island on the north, New Jersey on the west and the continental shelf about 80 to 120 miles offshore. The series will focus on pollution in the Bight: its sources, effects and alternatives.

Human impact on the environment is directly related to the type and intensity of activities carried out. The New York Bight, for example, serves some 20 million people as a source of recreation, transportation, commercial shellfishing and finishing as well as a depository for raw sewage, sludges, acid and toxic chemicals and construction debris.

In regard to solid waste disposal, the attitude of simply "flushing our troubles away" or "out of sight out of mind," is slowly catching up with us. Many beaches have been closed due to sewage-like debris. Some shellfish beds have been closed to harvesting. And certain fish species are so heavily contaminated with pesticides and toxic chemicals that they are used as trophies for the wall rather than food for the table.

Recently, it has become clear that our waters cannot absorb an infinite amount of human wastes; nor can they constantly give an unending supply of natural resources. This realization caused NOAA, the U.S. Commerce Department's National Oceanic and Atmospheric Administration to establish the Marine Ecosystems Analysis Program (MESA).

Pollution Sources in the New York Bight

Since July 1973, MESA scientists along with their colleagues in other agencies have been investigating the complex physical, chemical and biological processes of the New York Bight, and how human activities affect these processes.

The four major sources of contaminants studied by MESA include atmospheric fallout, barged dumps, that is, the discharges dumped from barges directly into the Bight proper, wastewater and runoff from the Hudson, Raritan and Passaic Rivers and the New York metropolitan areas. The inputs from Long Island and New Jersey are minimal—generally less than 6% of the total Bight input.

Dusts, soots, trace metals such as lead, zinc and cadmium and organic continued on page 2

Special Feature on Marine Education

Turn to page 4
Cramp Business Clamming-Up?  
continued from page 2

By Brian E. Doyle, Specialist, Brockport

Navigating the channel of the West Branch of 12 Mile Creek in Niagara County is a difficult experience. Even well-informed local boaters cannot keep track of the continuously shifting underwater bars. And sometimes an active gravel barrier forms across the mouth of the creek, virtually blocking access to and from Lake Ontario.

The town of Wilson where the West Branch is located has supported drag-line dredging operations at the mouth of the creek for the last 15 years. Although only partially successful, these operations are generally effective for periods of less than two months.

In recent years, the development of the Lake Ontario salmonid fishery has increased boating activity along the Niagara County coastline. Because of limited boating facilities, the town of Wilson decided the West Branch of 12 Mile Creek was a logical spot for a boat launch ramp and facilities. Using Community Development Block Grant Funds, the ramp was built in 1997. The project was also part of the town's plan to upgrade the Roosevelt Beach area adjacent to the creek.

About the time the boat launch was completed, Whit Barnum, Wilson Town Supervisor, and Don Stewart, Community Development Project Director, contacted the Sea Grant Extension Program for suggestions on stabilizing the creek mouth and preventing or retarding the continuous sediment deposition in the channel. Because this question had no easy answers and because it is a problem common to many creeks.

hatchery was so successful we started selling some of our own seed. This year we have orders for more than a million dollars' worth.

Bill feels the hatchery's success is also due to Louis Lebovitz, professor of aquatic biology at the Veterinary College at Cornell University. With Sea Grant support, he has been collecting and mapping information on land shellfish hatcheries over the last few years to help control water quality and disease problems. From the viewpoint of a pathologist, Lebovitz has found that shellfish can be "disgustingly healthy."

At Shellfish Inc. Lebovitz suggested modified filters and improved piping systems that are easier to clean. As a result, disease problems with bacteria and virus are being eliminated.

About fuel consumption Bill said, "During April we used about 1,000 gallons of diesel fuel, which is about another 2,000 gallons. With solar heat or wind generators, we could cut our fuel consumption by about the same amount."

As far as the future is concerned, Bill said "We're either in 'limbo' or purgatory."

Shellfish Inc.'s lease of town-owned bottomland expired in 1977 and their five-year option is running out. To make matters worse, the town of Islip has decided not to renew leases with private companies for "With all the commercial boats working the clam beds, there would be no money to support our hatchery research. The hatchery will eventually be profitable, but not by 1982 when the option expires. We're even willing to supply the town with seed clams in return for renewing the lease."

"With proper management, both private and independent baymen can sell all the clams that are grown," Bill added.

Whether or not Shellfish Inc. makes it depends on its lease. To make the land profitable, the hatchery is necessary. What started out for Bill Hart as a summer job is now a challenging full-time preoccupation.
Discovering Water Resources
by Sally Willman, Media Specialist

“When considering water resources, youth educators sometimes overlook their own individual talents and the fact that water resources are everywhere,” says David Greene, Sea Grant’s new marine education specialist for upstate New York, Greene, a graduate of State University College in Ossining, has experience as an outdoor environmental educator at Penn State’s Stone Valley Recreation Center and has taught in parks, recreation, environmental studies and biology.

“Marine education doesn’t have to be traditional biology or physical sciences,” Greene emphasizes, “but rather it involves environmental policies, recreation, history, geology, local community needs or any topic related to water.” He explains that once a topic has been identified, it only takes a little brainstorming to locate the people or organizations that can help.

Since joining Sea Grant in May, Greene has concentrated on identifying local marine education resources. “Upper state New York is an abundance of special environment extension agents, government officials, librarians, nature centers, aquaculture industries,” he says. “Any imagination and the willingness to use the phone or knock on doors is all it takes.”

Getting youth groups aware of marine education is easy, he says. He plans to work closely with 4-H, YMCA, Scouts, clubs and schools, especially teachers interested in water resources.

5,000 New Yorkers Caught Angling

by Linda O’Donn, Specialist, New York City

“Look, I caught a fish!” exclaimed Mary Schwegar, a senior citizen who caught a fish of the New York City urban fishing season, “and I’ve never fished before.”

Suburban ponds and lakes were echoed at six city lakes and ponds recently stocked with 68,000 bullhead catfish importance of all catch fish. Special classes were held for handicapped young adults and children in rehabilitation programs. Over 1,000 kids participated in Sea Grant’s educational programs.

provided a series of leader training workshops for groups interested in fishing. The workshops stressed “how to use fishing equipment you might find in the back of the closet,” or if none was found, “how to construct your own,” and tips and techniques for better fishing.

To promote the nutritional value of fish, southern fried catfish was prepared and served to anglers—to give them a taste of what lies ahead.

The official kick-off for the summer fishing season was provided by Governor Carey. He not only dumped the last bucketful of fish into Central Park Lake, but also became the best known fish stocker in the state. Fishing equipment for the 200 kids and senior citizens on opening day was provided by the Citizen’s Committee for Urban Fishing headed by Steve Sloan, a well known angler.

Taking advantage of the public interest generated by the program, Sea Grant launched a series of seafood preparation workshops during which nutrition workers actually got to shop for seafood, clean and prepare it. Cooking a luncheon of baked clams, steamed mussels, fried squid and stuffed Flounder was the highlight of this program.

Based on evaluation by this year’s participants, the next year’s program will be improved and modified. After 1979 when the federal Dingall-Johnson funding expires, the program will run on its own merits. It is hoped a private sponsor will step in.
MORE FOR EDUCATORS

by Liz Pennisi, Intern, Brockport and Sally Wilson, Media Specialist

In New York and across the nation, educators are thinking about marine education.

According to former national Sea Grant associate director Harold Goodwin and James G. Schaadt, co-authors of the national policy statement entitled, The Need for Marine and Aquatic Education - To Inform Americans about the World of Water,

"The world of water can no longer be taken for granted. The changing times have brought us to the threshold of a national reawakening to the essential role of both the salt and freshwaters of the earth."

Recognizing this need, Coastlines features marine education in its September-October issue and provides the following list of New York Sea Grant films, slide series and publications.

So whether you're a Sunday morning fisherman, an aspiring mariculturist, coastal contractor, seafood processor or a marine educator, you have a role to play in this reawakening — to help inform other Americans about our "world of water."

Films

New York City's Waterfront Legacy. Color, 16 mm., 28 minutes. Until recently, New York City often turned its back on its 578-mile waterfront. This new Sea Grant film provides a brief history of that waterfront, its problems and future potential. Subjects illustrated are: the bicentennial's Operation Sail; Fulton fish market; Roosevelt Island; the Arthur Kill; F.D.R. and the West Side Highway; Sheephead Bay; pollution and recreation. Rental for the general public is $12.50; and $6.25 for Cooperative Extension.

The Switched on Kitchen. Color, 16 mm., 28 minutes. "Seafood offers a tremendous opportunity to cook good food and get compliments," says Graham Kerr, television's "Galloping Gourmet." Kerr offers tips on seafood selection, handling, preparation and cooking in a delightful film for viewers of all ages. Rental for the general public is $12.50, and $6.25 for Cooperative Extension.

Our Ever-Changing Shoreline. Color, 16 mm., 15 minutes. This film focuses on the problems of erosion and deposition on New York's Atlantic and Great Lake shores. It explains the natural coastal cycle of destruction and rebuilding and how misunderstandings of this process has led to both financial and aesthetic pain in the past. Protective devices such as seawalls, groins and gabion revetments are discussed as is the role of New York Sea Grant. Rental for the general public is $8.00 and $5.00 for Cooperative Extension.

New York Faces the Sea. Color, 16 mm., 12.5 minutes. This Sea Grant film shows some of New York's major coastal problems and how Sea Grant is helping to solve them. Careless use of marine and Great Lakes resources is shown along with the problems of commercial fishing, recreational uses, power plant development, shipping and manipulation of wetlands. Rental for the general public is $8.00, and $5.00 for Cooperative Extension.

How To Borrow Sea Grant Films. The above films may be borrowed from the Film Library, Judd Falls Road, Cornell University, Ithaca, N.Y. 14853. Please specify two viewing dates—first choice and alternate dates. DO NOT INCLUDE MONEY WITH YOUR ORDER. You will be billed for rental use, and any overdue charges if film is not returned on time.

Slide Series

Preparing Those Forgotten Fish. 40 color slides and script. The consumer is introduced to specialized yet simple techniques for preparing carp, sucker, fresh water drum, pickerel and northern pike for the dinner table. Techniques described include "scoring," "flaking" and "grinding." This slide series is designed to complement the Sea Grant fact sheet, "Preparing Those Forgotten Fish" as a teaching aide in fish preparation and cookery educational programs. Free rental.

Why Eat Fish. 18 color slides and outline. This slide program is designed for use by home economists, nutritionists and other educators as a basic introductory teaching aide in fish preparation and cookery. Free Rental.

Seafood Handling and Preparation. 34 color slides and script. Basic step-by-step instructions on how to clean, scale, fillet, steak and field-dress fish are provided in this Sea Grant slide series. Free rental.

How to Borrow Sea Grant Slide Series. The above slide series may be borrowed free from New York Sea Grant Advisory Service, Fernow Hall, Cornell University, Ithaca, N.Y. 14850. Please specify two viewing dates—first choice and alternate.

Publications

Beginning Hints for Funding Marine Education Programs, Liz Pennisi, 1978, 4 pp., 15 cents


Marine-Related Occupations: A Primer for High School Students, Insight 7.

For more information

Write to Sea Grant Specialists Linda O'Dierro at our New York City office or David Greene at our East Aurora office.
Along the Ontario coastline, a small research project was initiated. The project was funded by the Wilson Town Board, the State University of New York at Buffalo and the New York Sea Grant Institute. Kim Fortune, candidate for a Master's degree in the Geology Department at SUNY/Buffalo, conducted the project.

Many questions posed by the town were answered by the joint research project. For example, Fortune found that the present dredging operations have little effect on channel depth because of the speed with which it fills after dredging. Depending on weather conditions, the creek mouth refills in a matter of weeks to only a few months.

According to Fortune's report, the major source of sediment for the gravel barrier and the offshore bars is the glacial till bluff to the west of the creek—and not the creek or offshore relict deposits. While cobble-size particles from the bluff find their way to the channel, the finer material is carried offshore into the lake. But after the gravel barrier builds up, blocking the creek from the lake, some finer material from the creek is then deposited inside the channel.

Now that the siltation process of the West Branch of 12 Mile Creek is documented, providing alternatives for stabilizing the inlet becomes somewhat easier. Because of the Town of Wilson's commitment to enhancing coastal resources, increased boating and recreational opportunities in the creek area are one step closer to reality.
Sea Grant Highlights Coastal Issues

New Respect for Old Tires — Learning, the ABCs of FTBs

by Leslie Ware, Intern, Fredonia

Residents of coastal New York State have a commodity many desire — low cost wave protection provided by old tires!

This message was clearly given to those who attended a Floating Tire Breakwater Conference/Tour sponsored by New York Sea Grant in June.

While inlanders may be unfamiliar with floating tire breakwaters (FTBs), coastal dwellers from Chicago, Illinois to New Orleans, Louisiana and San Francisco Bay to New Hampshire have found the mat-like structures made of bound, used tires effective in diminishing waves. FTBs have been used in marine coastal areas, inland lakes and rivers as well as in the Great Lakes.

Although the concept of a floating breakwater dates back to 1842 — they were also used by Allied Armies in World War II — widespread interest in this method of wave control has been stimulated recently by increased recreational boating. Marinas, yacht clubs, and harbors which cater to such boating have been attracted by the relatively low cost of FTB components and their effectiveness in some coastal locations.

Speakers at the conference and tour, hosted by Sea Grant Specialist Bruce DeYoung, included researchers exploring FTB engineering and members of the New York Department of Environmental Conservation and the U.S. Army Corps of Engineers.

Field staff members from New England and Great Lakes Sea Grant programs also made presentations, as did coastal business and community leaders involved in FTB use.

To get far-reaching answers to frequently-asked questions about FTBs, the 51 conference participants came from as far away as Florida and Minnesota.

They learned that FTBs aren't a cure for all wave damage to coastal facilities. Instead, the structure’s size and mooring requirements must be specially designed for each coastal area.

Participants also learned that onshore tire revetments can often be used to slow coastal erosion. Along coastal Lake Huron in Michigan, a tire revetment was successful in protecting municipal facilities from erosive destruction.

On the second day of the program, participants traveled to Lake Erie's Dunkirk Harbor, site of a 1,000-foot-long FTB, the largest in existence. Dunkirk's floating breakwater was built to protect boats moored in the harbor as a temporary measure until completion of a more permanent structure.

From Dunkirk's former harbormaster, participants learned of the need for continuing FTB maintenance. Sections of the Dunkirk breakwater were submerged by last winter's ice and have yet to be repaired.

Participants left with a good deal of knowledge about an increasingly widespread means of coastal protection — and a new respect for old tires!

For more about FTBs, a new publication entitled, “Enhancing Wave Protection With Floating Tire Breakwaters,” is available. It provides information on designing, building and maintaining an effective FTB including easy-to-use engineering graphs and charts, See I WANT MORE.

N.Y. Fisheries
A Good Investment

by Sally Willson, Media Specialist

New York fisheries are at a “take-off” stage of growth, but only a few New York banks are involved.

This situation was described again and again by participants at the New York Fisheries Forum in Stony Brook, N.Y. in July.

The one-day conference on “An Ocean of Opportunity” was attended by about 70 members of the fishing and banking industry including Chemical Bank, Chase Manhattan, Long Island Trust, Bank of Suffolk County, Hempstead Bank, Bank of New York and Merrill Lynch. It was continued on page B

William Pell, III, of the National Marine Fisheries Service, explains the effect of the 200-mile limit on New York fisheries. Pell was one of 17 panelists to address the Sea Grant Fisheries Forum in July.
"Your Marina and the Natural Environment: Controlling Your Damages" is the subject of a joint Empire State Marine Trades Association-Sea Grant Conference on November 9-10 in Syracuse. Topics to be covered include the problems of ice, aquatic plants, wave and weathering damages to waterfront facilities.

The two-day program will also serve as the first statewide conference for the two-year-old Empire State Marine Trades Association (ESMTA). Established in early 1976 with the endorsement of regional marine trades associations in Rochester and Syracuse, ESMTA has been joined by the Buffalo and Albany regional groups. In addition, unaffiliated, individual marina operators have joined since a recent revision in ESMTA by-laws.

Optimistic about ESMTA’s first statewide conference with Sea Grant, Art Knorr, executive director reports, "We now have over 200 members in our group. And with the new membership policy, we're growing at a rate of about three new members a week."

For more information, contact Tom Mack or Mike Volland at the Sea Grant Brockport office, or Art Knorr at 409 Empire Building, Salina St., Syracuse, N.Y. 13202 (315-472-5431).


Sea Grant Law Fellows of the State University Law School at Buffalo are presently working on articles to be published in a late 1978 issue of the Buffalo Law Review. The subjects include tort liability arising from the maintenance of submerged artificial obstructions to navigation in the Great Lakes to U.S. limits; intergovernmental relations in port development in the Great Lakes; the role of the International Joint Commission in coastal zone management in the Great Lakes; cooperative federalism and coastal zone management; agency control of navigation on the Great Lakes; regulation of dredging and similar operations in the Great Lakes; conflict resolution and the Great Lakes Basin Commission; and history of nuisance law in Ohio, with particular reference to coastal areas.

NY Fisheries — A Good Investment

sponsored by New York Sea Grant and the Long Island Association of Commerce and Industry.

According to conference participants, New York banks need to change their attitudes toward commercial fishermen.

"Bankers need to learn that commercial fishing vessels have value. To a fisherman, the vessel is an asset—not the home or car which bankers have traditionally used for collateral," explained Richard Miller, executive secretary of the Long Island Fishermen's Association.

George Ross, financial advisor for the National Marine Fisheries Service (NMFS) also backed the soundness of investing in fisheries. He pointed out that 60-foot vessel can generate $200,000 gross a year, and an exceptional vessel like the Star of Bedford has grossed $100,000 on a four-day trip.

NMFS conducts the federal government's Fishing Vessel Loan Program and Capital Construction Fund, under which 20 fishing vessels—valued at $200,000 each—will be constructed in the next three years. Under these programs, NMFS has never encountered default by a fishing concern. Instead Ross emphasized NMFS's satisfaction with customers. "Fishermen tend to be very loyal," he said.

Further indication that New York's fisheries are a good investment is the recent financing of three new packing facilities—one privately and two by the Small Business Administration—valued at about one million dollars.

The audience also heard from Francis Keating, vice president of marketing for the Long Island Trust Company, the first bank to foster commercial fishing loans. Keating questioned his banking colleague's neglect of local fishermen. "Until last year, no major New York banking institution was involved in the fishing industry," he said. "Not only can this indictment be laid on the banking institution, but also on insurance companies." Keating spoke positively about Long Island Trust's experience with fishermen. "I saw the needs of fishermen as an opportunity. With very little investment on our part, our efforts were well spent."

While conference participants spoke highly of the fishing industry, they also recognized major problems such as the lack of docking facilities, modern onshore and sea-based processing plants and marketing apparatus. William Pell, of the Mid-Atlantic Fisheries Management Council, described how American-caught squid first go to the Fulton Fish Market in New York City, then to Boston by truck where they are finally processed and frozen two days later. "On Spanish ships, squid are processed and frozen in four or five hours," he said. In spite of these problems, conference participants were optimistic. "The potential is here in New York," claimed Pell. He pointed to New York's central location which provides access to southern fleets in the summer and New England's in the winter. The increasing demand for fish products by American and foreign consumers was cited by Sea Grant's Jim Daniels. And the New York Port Authority's interest in developing docking facilities for commercial fisheries was viewed favorably.
Many complaints can be heard among fishermen, boaters and divers concerning barges dumping materials into the waters of the New York Bight.

Ocean dumping is still very much alive and legal in our New York waters. It is legal as long as the dumper has acquired the proper permit from the Environmental Protection Agency (EPA) and dumps the material in its proper location.

There are currently five dumping sites within the New York Bight apex (see map on page 1) where the disposal of toxic and non-toxic wastes are permitted. These include a sewage sludge site, the acid waste site, the dredged material site (mud dump), the wreck site (or derelict vessel) and the cellar dirt site (rubble and debris). There is also another chemical dump site which is located 106 nautical miles from the New York Harbor entrance on the edge of the continental shelf.

The United States Coast Guard is responsible for monitoring the disposal of toxic and non-toxic material. The exact location of the dump sites are as follows:

**EPA APPROVED INTERIM DUMPING SITES**

<table>
<thead>
<tr>
<th>Primary Use</th>
<th>Location (Latitude, Longitude)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal sewage</td>
<td>40°22'30&quot;N to 40°25'00&quot;N, 73°41'30&quot;W to 73°45'00&quot;W</td>
</tr>
<tr>
<td>Acid wastes</td>
<td>40°16'00&quot;N to 40°20'00&quot;N, 73°36'00&quot;W to 73°40'00&quot;W</td>
</tr>
<tr>
<td>Industrial wastes</td>
<td>38°40'00&quot;N to 39°00'00&quot;N, 72°00'00&quot;W to 73°30'00&quot;W</td>
</tr>
<tr>
<td>Cellar dirt</td>
<td>40°23'00&quot;N, 73°49'00&quot;W, 0.6 nautical mile radius</td>
</tr>
<tr>
<td>Wrecks</td>
<td>40°10'00&quot;N, 73°42'00&quot;W, 0.5 nautical mile radius</td>
</tr>
<tr>
<td>Industrial wastes</td>
<td>19°10'00&quot;N to 19°20'00&quot;N, 66°35'00&quot;W to 66°50'00&quot;W</td>
</tr>
<tr>
<td>Mud Dump</td>
<td>40°25'48&quot;N, 73°51'28&quot;W, 28&quot;W; 40°21'48&quot;N, 73°50'00&quot;W; 40°21'48&quot;N, 73°51'28&quot;W; 40°22'48&quot;N, 73°50'00&quot;W</td>
</tr>
</tbody>
</table>

Materials dumped in locations other than their designated dumping areas or "short dumps" as they are called are illegal.

What can you do about it? Report it! First, obtain the exact location of the suspected short dump via Loran, visual bearings when possible, or any other method you have for pinpointing your location. RECORD THE VESSEL'S IDENTIFICATION NUMBERS AND IF POSSIBLE, TAKE A PICTURE OF THE "DUMPER" IN ACTION. IMMEDIATELY SUMMON THE UNITED STATES COAST GUARD VIA PROPER RADIO PROCEDURES.

Keep a record of your complaint. A follow-up phone call to Peter Anderson, Ocean Dumping Division, the Environmental Protection Agency at (201) 321-6689 won't hurt. This office is responsible for issuing notices of violation under the EPA enforcement regulation.

Don't get down in the dumps... Do something about it!

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COASTLINES, published bi-monthly, is available free of charge to New York residents on written request to the editor.