Coastlines

NEW YORK STATE SEA GRANT INSTITUTE
STATE UNIVERSITY OF NEW YORK and CORNELL UNIVERSITY

Vol. 9 No. 5 September–October 1978

Troubled Waters: The New York Bight

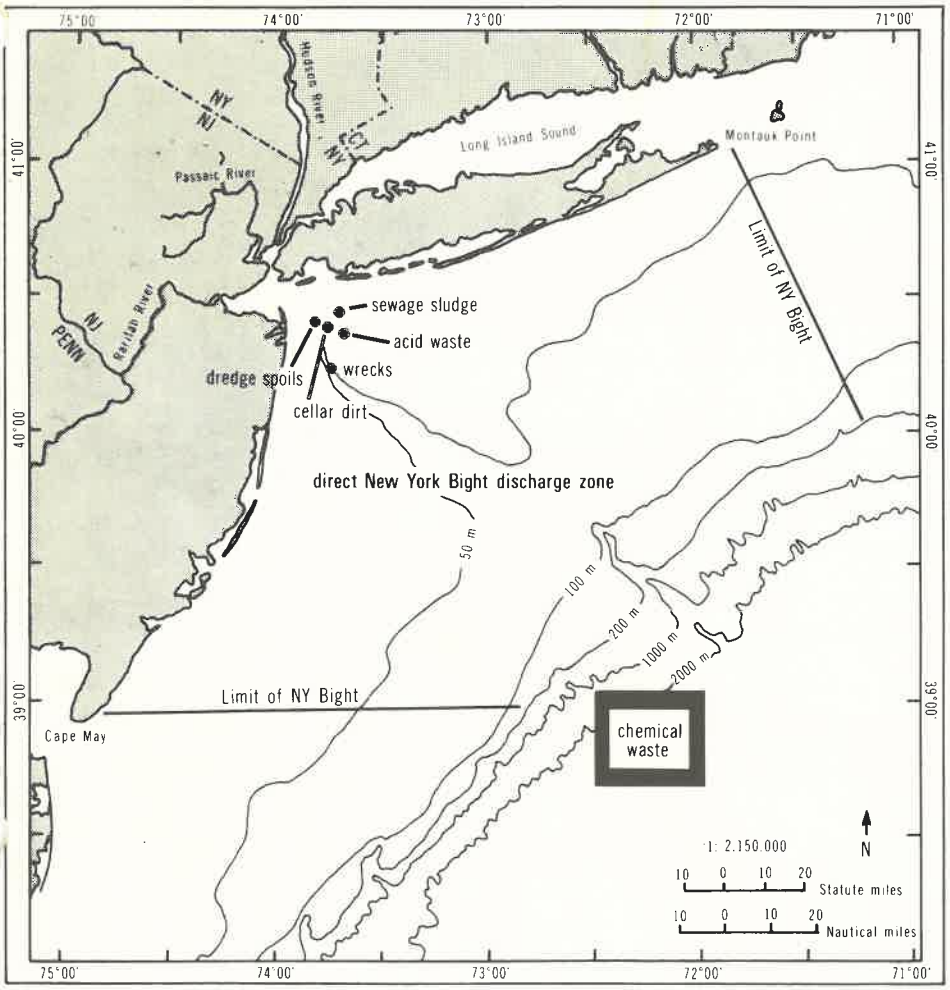
by Donna Edgar, Specialist, Stony Brook

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 finfishing 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).



Source: After Mueller et al 1976 b

Lambert Conformal Conic Projection

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

Personality Profile

Clam Business Clamming-Up?

by David Chase, Specialist, Riverhead

"It was just a summer job," said Bill Hart about working at the Shellfish Inc. hatchery in West Sayville, N.Y. That was eight years ago. Now he's full-time and in charge of the hatchery operation from February to November.

Shellfish Inc. had its beginning in 1936 when the company leased land from the town of Islip. In 1952, Joe Glancy, of the Bluepoints Company and General Foods, took over, and according to Bill "much of what I learned earlier was through reading old papers, notes, and daily diaries of Joe Glancy's from the 1930's." On Glancy's death in 1963, Bill's brother, Charles who is now president of the Long Island Shellfish Farmers Association gained ownership.

First Long Island Clam Hatchery

Eight years ago Shellfish Inc. had an oyster hatchery. "The hatchery always operated in the red. Everybody was just stabbing in the dark trying to determine the best methods for raising oysters," Bill said. Then Shellfish Inc. got out of oysters and six years ago became the first clam hatchery on Long Island.

"It wasn't until two years ago that we had any success. That's when we came up with different methods of growing clams, different types of holding tanks, centrifuges, and the use of well water with bay water. Last year—after growing algae—the

continued on page 3

Troubled Waters:

continued from page 1

substances such as DDT and PCB's are discharged into the air by incinerators, automobiles, chemical and power generating plants, transported and eventually deposited into the ocean by atmospheric fallout. Although insignificant with respect to our inshore coastal waters, atmospheric input becomes more important in the offshore oceanic waters.

In the New York area, barges transport dredge spoils, sewage sludges, industrial non-toxic chemicals and acids, and construction and demolition wastes to specifically designated sites for dumping. Over the past decade, the dumping of sewage and industrial sludges has been a major concern. A look at the solid waste treatment process used in densely populated areas explains why.

Sewage Treatment Facilities

In the New York - New Jersey metropolitan area and parts of Long Island, sewers collect waste water from homes, businesses and industries and deliver it to sewage treatment plants for the removal of various waste products. This remaining effluent is then discharged into streams or larger bodies of water, or reused depending on the treatment given at the plant. Treatment can be one of the following three:

primary - removes large objects and roughly 30 percent of the suspended solids and substances which demand oxygen for their decomposition.

secondary - removes about 90 percent of the suspended solids and oxygen-demanding substances.

tertiary - removes 98 percent of the suspended solids, nutrients, chlorine and colors.

In New York City and on Long Island, the newer sewage plants provide secondary treatment. Where possible, older primary plants are being updated to secondary levels. Translated into percentages, this means 85 percent of the New York metropolitan population is sewered. And the other 15 percent or 350 million gallons of raw sewage from the three-quarter million people living in Manhattan, Brooklyn and the Bronx is discharged daily into the Hudson River and its tributaries. This condition will continue until two sewage treatment facilities are completed.

In addition, New York's sewer system is a "combined system." During wet weather, the increased volumes of water from street and land runoff combine with the normal load of municipal materials creating an overload. To prevent this overload from damaging the treatment plants, diverters in the sewer system are used, causing discharge of all the waste water directly into nearby rivers. As little as two-hundredths an inch of rain can cause an estimated one billion gallons of untreated sewage and wastewater to be diverted.

The basic function of a sewage treatment plant is to speed up the natural process whereby water purifies itself. The process "treats" the sewage—it does not make the sewage go away or disappear. The two by-products—effluent and sludge—still contain excessive amounts of disease-causing germs, nutrients such as nitrates and phosphates, industrial chemicals, trace and heavy metals, all of which may cause environmental stress to our waters.

Sediment Build-up

The effluent which is discharged into the waters contains solid materials which eventually settle out and build-up in the harbors and channels. This sediment load also contains direct pollution discharges from upstream cities and runoff from livestock feedlots which are naturally transported in both rivers and in littoral beach drift. In order to maintain navigation, these solids must be dredged up and redeposited as dredge spoil at offshore dumpsites. These spoils—heavily loaded with potentially toxic heavy metals, chemicals and pathogens—are responsible for environmental degradation.

Other materials which are barge dumped in the Bight include non-toxic chemicals from industries and construction debris such as excavation dirt and masonry. Toxic chemicals are dumped 106 nautical miles at a deep water dump site.

New York Bight Publications

New York Sea Grant and MESA have published a series of technical monographs about the New York Bight. This New York Bight Atlas covers the physical and biological aspects of the Bight, the living resources and the effects of human activities on these resources, and MESA's responsibility toward the Bight. The monographs are written in a non-technical style specifically for community managers and decision makers. For information on the New York Bight, MESA, or the MESA New York Bight Atlas Monographs, contact Donna Edgar at the Stony Brook Sea Grant office. See I WANT MORE.

turn to page 8

Answers for a Lake Ontario Township

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 inceased 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 town built the ramp in 1977. The project was also part of the town's plan to upgrade the Roosevelt Beach area adjacent to the creek.

Dredging operations and rapid silting of the West Branch of 12 Mile Creek in Niagara County are the focus of a town of Wilson, SUNY and Sea Grant study.

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 siltation is a problem common to many creeks

continued on page 7

Clam Business Clamming Up?

continued from page 2

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

Bill feels the hatchery's success is also due to Louis Leibovitz, professor of Avian and Aquatic Medicine at the Veterinary College at Cornell University. Leibovitz, with Sea Grant support, has been visiting Long Island shellfish hatcheries over the last few years to help control water quality and disease problems. From the viewpoint of a pathologist, Leibovitz has found Long Island shellfish to be "disgustingly healthy."

At Shellfish Inc. Leibovitz suggested modified filters and improved piping systems that are easy to clean. As a result, disease problems with bacteria and protozoans are gone.

About fuel consumption Bill said, "During April we used about 1,000 gallons of gas. By November, we use another 2,000 gallons. With solar heat or wind generators, we could culture clams year-round. This is about the only way I feel a hatchery can make a profit on its own merits."

"What are the future needs of the industry? Bill was asked. "We need a Great South Bay study to look into seeding clams, predation, pollution and types of bottom substrate. The towns need to work together in improving data collection and scientific analysis of the populations."

Bill also suggested someone should determine whether or not spawner clam transplants are effective. "Year after year some baymen's associations and towns put chowder clams in the Great South Bay hoping they will spawn and create a natural set in the bay. But chowder clams are detrimental to the overall population since they take up more space and may actually kill larvae as they pump water themselves." Asserting his views, Bill said, "Baymen should harvest the chowder clams and stop supporting such programs. If not, the Great South Bay eventually be all chowder clams!"

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. "Without our 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 reinstating our 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 hatchery profitable, the leased bottomland is necessary. 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.

MARINE EDUCATION

Jotting down notes in daily dairies, students from Central New York study maritime shrubs on the Island of Andros in the Bahamas. The students are from left to right: Jeff Page, Kurt Cooper, Scott Anderson, Mark Killoran and Donna Smith. Photograph by Jere Engleke.

NY Teenagers Study in Bahamas

By Barbara S. Spector,
Sea Grant Investigator, Syracuse

How do you combine marine education with on-site learning if your students are landlocked?

In Central New York, many students have never seen the sea. The most appealing alternative for these young people is the obvious. Take them to the sea. In the past, students have visited the Marine Biological Laboratory at Woods Hole, Mass. But in 1978, a drastic change in environment was sought to encourage students to examine facets of terrestrial life effected by the sea and life in the sea itself. The Caribbean was chosen.

Encouraged by a Sea Grant marine education workshop in Victor, N.Y. in October, 1977, a field study in marine and terrestrial subtropical ecology was offered through the Syracuse City School District. For a week in May, 23 students, 15-19 years of age from eight Central New York school districts studied as a team on the unspoiled Island of Andros in the Bahamas. The students came from a wide range of academic backgrounds and abilities.

The course was designed to introduce temperate zone teenagers to subtropical ecosystems and to enable them to apply biological, physical science and social science concepts to a foreign environment. The underlying theme was the adaptation of organisms to the environment and the evolution of these environments from living and non-living factors. Osborne Nye, Jr. from Syracuse University accompanied the group as field consultant in geology. Since students were required to meet certified diving standards of the National Association of Skin Diving School, Jere Hallenbeck of the National Aquatics School provided students with professional certified diving instruction prior to the field study. He also assumed responsibility for diving safety during the study and was assisted by Raymond Engleke.

In the Caribbean, students used scuba diving, snorkeling, underwater notebooks and cameras to explore marine environments including the barrier reef, patch reefs, grass beds, sand flats, hard ground and "blue holes." They also studied the intertidal zone of sandy beaches and rocky shores, and the terrestrial environments including mangrove swamp, maritime shrubs, savannah, orchid coppice, palm groves and pine forest. Human ecology was investigated with time devoted to an experimental farm, a native village, and the main town on the island. Each student maintained a diary of personal experiences, daily activities, and scientific observations.

The influence of this subtropical experience on students was seen in their re-examination of personal values and attitudes. Conversations among students showed a new respect for life and the ecosystem in which they live. Their actions demonstrated a new consciousness of the need for fresh, unpolluted water and their responsibility in preserving it. Their diaries spoke enthusiastically of the joys of jumping into fresh water in the "blue holes" after many days experiencing salt water. They also obtained insight into the variety and appeal of a marine career.

The impact of on-site marine education comes from the experience of entering into an entirely new environment, leaving behind the everyday world of familiar people and places. Entering this startling and different environment enabled the students to recapture a child-like sense of wonder about the world around them. Curiosity was aroused and heightened. Questions were spontaneous and constant. Information was devoured in a vociferous manner not often seen in the classroom.

* * * * *

Editor's note: This article describes Barbara S. Spector's efforts to bring marine education to Central New York high school students. Curriculum implementation specialist and biology teacher in the Syracuse City School District, Spector welcomes inquiries from other marine educators. Her address is: 101 Hatherly Road, Syracuse, N.Y. 13224.

Discovering Water Resources

by Sally Willson, 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 Penn State and Denison College in Ohio, has experience as an outdoor environmental educator at Penn State's Stone Valley Recreation Center and academic training in parks, recreation, environmental studies and biology.

"Marine education doesn't have to be traditional biology or physical sciences," Greene emphasizes, "but rather it encompasses government 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 has an abundance of sports clubs, county extension agents, government officials, librarians, nature centers, aquariums and museums," he says. "An imagination and the willingness to use the phone or knock on doors is all it takes," he adds.

Getting youth groups aware of these resources is Greene's next step. 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'Dierno, Specialist, New York City

"Look, I caught a fish" exclaimed Mary Schwager, a senior citizen who caught the first fish of the New York City urban fishing season, "and I've never fished before."

Comments like these were echoed at six city lakes and ponds recently stocked with 68,000 bullhead catfish by the State Department of Environmental Conservation (DEC).

The original plans for an urban fishing program for New York City date back to the Kennedy Administration, but are only now becoming a reality. This year's pilot program resulted from a cooperative effort between DEC, New York City Department of Parks and Recreation, and New York Sea Grant. Over 5,000 New Yorkers ranging from toddlers to Senior Citizens participated.

Central Park — where thousands of city children are getting their first thrill of fishing this summer — provides the setting for Sea Grant Aide Arthur Leavitt's bullhead cleaning.

According to DEC Commissioner Peter Berle, "Nine out of 10 anglers start fishing during childhood. If we can bring fishing to more young people, we'll succeed in introducing them to a lifetime recreational activity." Upstate, one person in five takes part in freshwater angling, but in metropolitan New York where there are 220 straightline coastal miles plus many freshwater ponds and lakes, only about one in 20 goes fishing.

The current urban program is designed to promote fishing activity through a series of clinics and workshops rather than just provide fishing opportunities. Written educational materials for adults and children were offered by the Sea Grant office. Arthur Levitt, Sea Grant summer aide, provided a series of mini-fishing lessons at Parks Department sites throughout the five boroughs.

Kids got to make Japanese fish prints, play casting games, learn basic fishing techniques, identify common pond species, taste catfish, and most important 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 program.

Sea Grant and Bob Lange of DEC 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," plus tips and techniques for better fishing.

To promote the nutritional value of fish, southern fried catfish were 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 utilization workshops during which nutrition workers actually got to shop for seafood, clean and prepare it. Cooking of 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 Willson, 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; Sheepshead 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

How to Find Marine Information in Public and School Libraries, Insight 6.

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

For more information

Write to Sea Grant Specialists Linda O'Dierno at our New York City office or David Greene at our East Aurora office.

Answers for a Lake Ontario Township *continued from page 3*

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 silting 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.

The New York Sea Grant Extension Program is made possible through funding from the National Oceanic and Atmospheric Administration, the State of New York, and the New York State Sea Grant Institute. COASTLINES is published bi-monthly by the Sea Grant Extension Program. Free subscriptions for New York residents are available upon written request to COASTLINES Editor Ms. Sally Willson, Media Specialist, Sea Grant Extension Program, Fernow Hall, Cornell University, Ithaca, NY, 14853. Two-year out-of-state subscriptions are available upon request for two dollars.

I WANT MORE

Additional information is available from New York Sea Grant. Please check the publications which interest you and send to your nearest Sea Grant Extension Office.

Single copies of the following publications are free.

_____ Long Island Boat Fisherman—Short Report, E. Glenn Carls, 1978, 3 pp.

_____ The Port of Buffalo: Development of Coastal Resources: Short Report, Brundage and Paaswell, 1978, 3 pp.

For the following publications, make checks payable to Cornell University.

_____ Enhancing Wave Protection with Floating Tire Breakwaters, Bruce De Young, 1978, 32 pp., $1.50.

For the following publications, make checks payable to Research Foundation of SUNY.

_____ Mass Transport in the Free-Surface Boundary Layers, P. Liu, 1978, 13 pp., $1.50.

_____ Long Island Boat Fisherman, E. Glenn Carls, 1978, 34 pp., $1.50.

_____ Nutrient Distributions and Transport in Long Island Sound, M. J. Bowman, 1978, 18 pp., $.75.

_____ Microstructural Investigation of Plasma-Sprayed Aluminum Coatings, Safai and Herman, 1978, 13 pp., $1.25.

_____ MESA New York Bight Atlas Monograph #19: Recreation, E. Glenn Carls, 1978, 32 pp., $4.00.

_____ MESA New York Bight Atlas Monograph #16: Fisheries, McHugh and Ginter, 1978, 129 pp., $4.00.

_____ A Preliminary Assessment of Potential Development at the Port of Buffalo, Brundage and Paaswell, 1978, 118 pp., $1.00.

_____ Virus Transfer from Surf to Wind, Baylor et al, 1978, 6 pp., $1.50.

_____ Iron-Algae Interactions as a Factor in Lake Erie Water Quality, Storch, 1978, 25 pp., $1.00.

_____ Preliminary Report on the Application of Floating-Tire-Breakwater Design Data, Harms and Bender, 1978, 55 pp., $1.00.

Sea Grant Highlights Coastal Issues

New Respect for Old Tires — earning, 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 as 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.

Bea Schermerhorn of Hammond, N.Y., also a member of Sea Grant's St. Lawrence Advisory Committee presents the marina owner's view toward FTBs.

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

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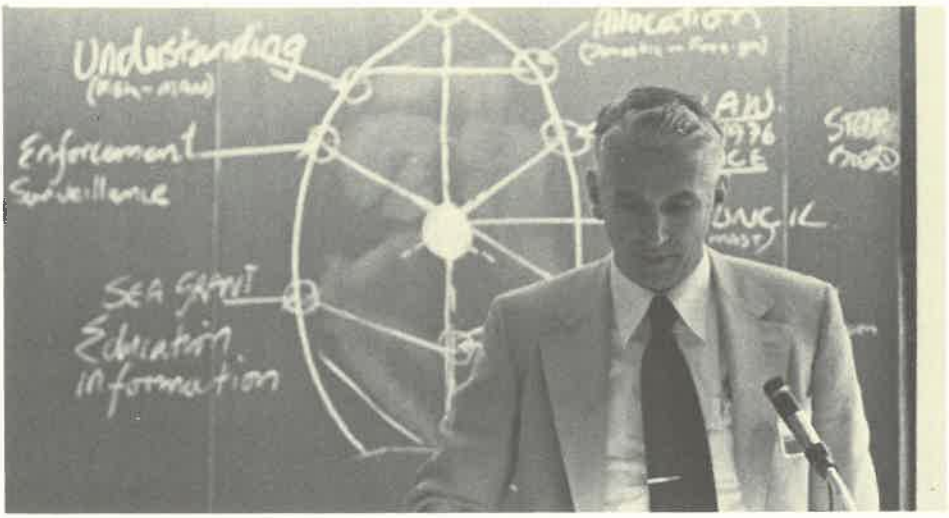

William Pell, III, of the National Marine Fisheries Service, explains the effect of the 200-mile limit on New York fisheries. Pell was one of 17 panelists to address the Sea Grant Fisheries Forum in July.

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UPDATE

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"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 Voiland at the Sea Grant Brockport office, or Art Knorr at 409 Empire Building, Salina St., Syracuse, N.Y. 13202 (315-472-5431).

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The **U.S. Army Corps of Engineers** has made available to Coastline subscribers the following Lake Erie publications without charge: The Annotated Bibliography for Lake Erie, Vol. I, "Biology," Vol. II, "Chemistry," Vol. III, "Engineering," Vol. IV, "Physical," Vol. V, "Socio-economic." Write your request to: Librarian, U.S. Army Corps of Engineers, 1776 Niagara St., Buffalo, N.Y. 14207.

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.

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NY Fisheries — A Good Investment

continued from page A

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 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.

GETTING DUMPED ON?

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 page1) 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

Primary Use	*Location (Latitude, Longitude)*
Municipal sewage sludge	40°22′30″N to 40°25′00″N, 73°41′30″W to 73°45′00″W
Acid wastes	40°16′00″N to 40°20′00″N, 73°36′00″W to 73°40′00″W
Industrial wastes	38°40′00″N to 39°00′00″N, 72°00′00″W to 72°30′00″W
Cellar dirt	40°23′00″N, 73°49′00″W, 0.6 nautical mile radius
Wrecks	40°10′00″N, 73°42′00″W, 0.5 nautical mile radius
Industrial wastes	19°10′00″N to 19°20′00″N, 66°35′00″W to 66°50′00″W
Mud Dump	40°23′48″N, 73°51′28″W; 40°21′48″N, 73°50′00″W; 40°21′48″N, 73°51′28″W; 40°23′48″N, 73°50′00″W.

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.

SEA GRANT

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