Coastlines

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

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A Special Year for Our Coast

ighthouse at Montauk Point, landmark of New York's Atlantic coast since 1776. Photo by New York Department of Commerce.

For thousands of Americans, the year 1980 began with a most unusual kick-off — a walk along the nation's beaches to celebrate the Year of the Coast.

In keeping with this event, this issue of "Coastlines" focuses on the need to balance the protection of our nation's 100,000 miles of beaches, bays, estuaries and wetlands with their development for recreation, housing, industry, and energy. And nowhere has this need been more evident than in large, industrial, coastal states like New York. As indicated in Don Squires' article on page 3, our fascination with — and abuse toward — the coast goes back to colonial days.

To stimulate heightened awareness of our coastal areas, the Coastal Zone Management Office in Washington, D.C. has worked with several states to develop a "Coastal Awareness" marine education program in ( )us schools. Although New York was not the first state to pilot this program, the New York Coastal Management Program is working with Sea Grant and the New York State Marine Education Association to develop a similar coastal awareness curriculum. The first coastal awareness programs were held April 18-20 on Governor's Island in New York City and on April 26th at the Rochester Institute of Technology during its "Year of the Coast" spring program. In addition to these activities and those described in the article by Ruth Folit on page 4, Sea Grant specialists in New York are contributing to the following Year of the Coast programs:

- **Gateway to the Sea,** a series of 8 free lectures by experts on subjects ranging from aquaculture to whales, at Gateway National Recreation Area in Brooklyn.

- **Coastal Environments: Teaching Techniques,** a course for elementary and junior high school teachers on practical activities and curriculum materials having to do with water, waves, tides and currents, ships in New York's harbor, coastal Indians, and the plants and animals of the sea, at Gateway National Recreation Area in Brooklyn.

1980 Salute to the Waterfront, second annual tribute to the redevelopment of the waterfront of metropolitan Buffalo. Activities planned for the two-week long celebration on June 28 to July 14 include all kinds of boating events, photography and art shows, fireworks and air show.

- **Year of the Coast Curriculum Development Workshop** at Canisius College in Buffalo on September 27.

- **Western New York Conservation Field Days** on Lake Erie to be held October 4.

- **1980 — Year of the Coast,** the 13th Annual Sea Grant Association Meeting to be hosted by the Great Lakes Sea Grant Network on October 6-8 in Michigan.

- **A Special Earth Day and Year of the Coast publication** to be used by school and youth groups on Long Island.

For more information on these and other Year of the Coast activities, contact the Sea Grant specialist nearest to you.

Lake Ontario Shoreline Protection Study Enters Phase II

by Brian E. Doyle,
Sea Grant Specialist in Brockport

During the period 1972 through 1976, the Lake Ontario Basin experienced abnormally high precipitation resulting in record or near record high lake levels. When accompanied by storms this often produced devastating flooding and shoreline erosion damage to the Ontario coastline.

"Lower the lake levels and our shoreline erosion problems will be solved" became the battle cry of the lakeshore residents. Theoretically, it is possible to control the level of Lake Ontario to a certain degree, by regulating the outflow of water through two dams located near Massena, New York, on the St. Lawrence River. But whether lowering the lake was the best solution versus the cost involved was not known.

Spurred by the costly losses to his constituents, then Senator James Buckley was instrumental in having Congress pass the Lake Ontario Shoreline Protection Act of 1976. The Act directed the Corps of Engineers to develop a plan for shoreline protection and beach erosion control along Lake Ontario and report its recommendation to Congress.

The report is to include three major components: 1) recommendations for shoreline protection methods, 2) proposals for equitable cost sharing alternatives, and 3) recommendations for regulating the level of Lake Ontario to assure maximum protection of the natural environment and to hold shoreline damage to a minimum.

As one might imagine with a study of this complexity, much time, scientific research and public input is needed. The Corps has been actively working on the project for about 18 months and is entering Phase II of a three-phase schedule. They anticipate another two-and-a-half to three years before a final report can be submitted to Congress.

Last summer the Corps sponsored a series of public involvement workshops so that interested persons might have an opportunity to identify what they felt were the critical problems along the Lake Ontario shoreline. Nearly 300 persons, representing shoreline owners, industry, recreation interests, environmental groups, elected officials and others, attended these workshops and developed a list of shoreline concerns. This list will be the basis for future components of the study.

Since those workshops, the Corps has accumulated some new and quite interesting research data. Among this data is a detailed inventory of the Lake Ontario coastline, which includes much of the Sea Grant sponsored research on shoreline erosion recession rates, bluff composition, and an analysis of inlets and harbors. In addition, they have evaluated present erosion protection techniques, drawing some preliminary conclusions as to their location, suitability and effectiveness.

In order to share this information with those having an interest in Ontario's coastal areas, a second series of public workshops has been scheduled for the week of June 23-27 in Watertown, Mexico, Rochester and Wilson. As with the previous workshops Great Lakes Tomorrow, an international, non-profit organization, concerned with the future of the Great Lakes and with facilitating citizen involvement, will organize and run these workshops. *continued on page*

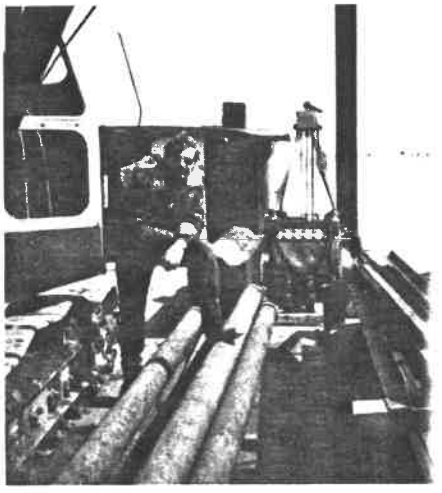
The Challenge of a Marine Contracting Career

Brian Doyle, Sea Grant Specialist in Brockport

Having lived along the shores of the Niagara River all his life, it seemed only natural that Andy Lichtenthal would be attracted to a marine career. Specifically, Andy is a marine contractor working in an area which includes Lakes Erie and Ontario, and naturally, the Niagara River.

Feeling there "was much room for improvement in the quality of services performed, materials being used and prices charged," Andy started his own business, the A.J. Brothers Marine Construction Company, about four years ago. "It's a very specialized field which requires a love for the water and a disdain for western New York weather."

The type of marine construction services which Andy performs run the gamut from pile driving to dredging to salvage diving. Among the equipment which can be found at his Grand Island operations base are: two tugs, a crane barge, a fixed-lead pile driver, a variety of portable welders and torches, pneumatic air



Marine contractor Andy Lichtenthal

gear. "You never know what you'r going to come up against on th water, so specialized and prope equipment is a necessity," comment Andy.

Although winter is traditiona slow period for marine contractor Andy manages to keep busy by doin some diving work, repairing and ser

Lure of the Coast

by Donald Squires, Director in Albany

Ever wondered why we go to the beach? Because we evolved from some distant ancestral marine life form? Or because we want the openness, the aesthetic experiences of sun, wind, and water?

It was not always so, for the coast was a hostile environment affected by storms, lacking roads, settlements, and amenities. As Lawrence Wright tells us in his charming book "Clean and Decent", we have not always been house-trained and there have been periods when aversion to bathing was the norm. As late as the 1700s, undergraduates of Cambridge could be publicly flogged for bathing. But bathing for medicinal purposes was something else. Spas developed around hot springs and were popular medicinal cures in the 1700s. Seawater bathing began and was made popular by the pronouncements of other medicinal practitioners who believed that cold waters could be as therapeutic as warm: Sir John Floyer's "History of Cold Water Bathing" extolled the virtues of seawater; and, a Dr. Wittie suggested in 1660 that the sea cured gout, dried up superfluous humours and killed all manner of worms."

The coming of railroads opened the shore to visitors other than the wealthy, but not until the British aristocracy set the norms. (The British took to the water almost a century before other Europeans.) "The Letters of a Gentleman from Scarborough" (1734) anonymously records "the gentlemen go out a little way to the sea in boats and jump in directly. There are two little houses on the shore to retire to for dressing in." Later, the British were to exhibit great concern for such behavioral laxity and would, for almost 100 years, segregate the sexes on the beaches and invent the great and complicated "bathing machines" to permit unobserved submersion. With popular development came British seaside resorts such as Brighton, Lowestoff, and Scarborough, and with resorts came souvenirs. (As early as the late 1700s, one could purchase ceramic cups, cruets, and other trinkets — "a trifle from Brighton" — most made in Germany.)

Colonial America was so sparsely populated and its coastal regions so poorly roaded, that travel to the beaches was rare. Some villages near the larger population centers did provide boarding house accommodations for "the health and entertainment of pleasure seekers". Newport, Rhode Island; Cape May and Long Branch, New Jersey were among our first seaside resorts. Happily, Americans were unencumbered by the British segregated bathing traditions and by the mid-1800s family outings to the beach became possible. Increased affluence, shortened work weeks and such innovations as paid vacations made the seaside holiday a reality. Resorts with huge hotels sprang up accompanied by such refinements as piers, boardwalks, amusement parks and athletic grounds.

Boardwalks are a peculiarly American tradition. Some continental beaches had wooden boards laid over the sand, such as the famous "planches" at Deauville. But structures such as the boardwalks at Atlantic City, Coney Island and Jones Beach, with their wicker rolling chairs and pushers, are truly a domestic product. Amusement parks are another American innovation that came with boardwalks. Coney Island is New York's most famous. In the 1850s Coney Island was described as "solitary and with a wild charm"; by the 1880s it was a sprawling resort controlled by underworld character John Y. McKane and famous for its prize fights, gambling, and brothels. Cleaned up by the city, Coney Island's famous Steeplechase Park opened in 1897, followed by Luna City, Dreamland and others.

After World War II, as austerity declined, seaside recreation boomed again. The bikini, popularized by Bridgette Bardot's "Et Dieu Crea la Femme", kindled the "St. Tropez scene" and a back-to-nature set of values. Resorts were passé; the romance of coastal fishing villages was in. Charter airline flights, initiated in the 1950s, brought urbanization to the seashore and made distant beaches more glamorous than those nearby. Seaside recreation was now possible somewhere, all year round. Fiberglass and plastic core foam development made possible mass-production of surf boards and a new culture of sunworshippers was born. The 1960s saw the beaches populated by the young with their own language, idols, and obsessions. Meanwhile, the resorts, now largely abandoned, became the final residences of older folk and the site of the big conventions.

Why do we go to the beach? The reasons are almost as numerous as our population. We've been doing it for as long as we could get there, doing it in our own way, doing it "in fashion", and doing it differently every year.

Long Island's Jones Beach. Photo by New York Department of Commerce.

1980: the Yea

Street-wise Kids Take on the Water

by Ruth Folit,
Term Specialist in New York City

Quietly, without any overall plan, marine education is surfacing in New York City classrooms and environmental centers.

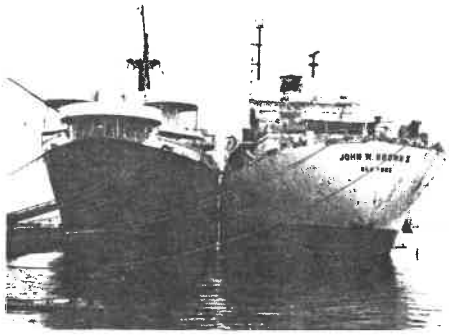
Although New York is a city of islands surrounded by five rivers and the salty Atlantic, New Yorkers take the waterfront for granted, unaware of how much it affects their daily lives. Moreover, few realize that 1980 was designated the Year of the Coast, by President Carter in his 1979 message to Congress on the environment.

1980 will be a year to focus attention on both the value of the coast and the danger in its continuing degradation. It also provides an opportunity to influence the education for every city schoolchild.

New Dimensions in Learning

Although New York City has 5 miles of coastline, the typical city kid world is concrete and asphalt. Introducing these children to the surrounding marine environment put them in touch with a new dimension. When curiosity motivates learning as is the case with children and ocean topics, the chances for successful teaching increase. Through working with individual teachers and school programs, Sea Grant has contributed to successful marine education in the city.

- A small core of New York City teachers has infused their classroom with marine subjects and is developing maritime education centers. B



r of the Coast

using simple experiments, nearby field trips, arts-and-crafts projects, and live-specimen tanks, they encourage active participation and reinforce leaning by doing. At a time when many teaching methods seem to fail, a learning approach integrated with marine education appears to succeed. This approach provides a vehicle to teach fundamental skills, and offers children a chance to learn about their island birthplace.

• The **Marine Mobile Program** brings the ocean into fourth, fifth and sixth grade classrooms! Sponsored by the New York City Board of Education and Sea Grant from New York, this program has involved over 10,000 children in a two-week-long series of exciting and information packed lessons over a two-and-a-h(ear period. One day the kids do fish-printing, an ancient Japanese art of recording fish characteristics by inking the fish and pressing it with paper. Another day, the kids do simple, dramatic experiments. Using water, food coloring, and straight pins, they learn about surface tension density, and other physical properties of water. According to teachers who must wait at least a year to have the Marine Mobile visit their classes, the program needs to be expanded.

• The **Fireboathouse Environmental Center** offers a different kind of maritime education. A joint effort of the Asphalt Green Neighborhood Committee and the Board of Education, it is located on the East River. Thousands of children up and down Manhattan's East Side learn about the ships that sail daily in the New York harbor and the creatures that live in our waters. Workshops are held to train teachers on how to incorporate marine topics into their curricula. After-school and summer courses are also offered. In one, teenagers construct a rowboat!

• Aboard the retired World War II Liberty ship, another highly imaginative urban marine education program floats: the **John W. Brown Schoolship.** Located on the Hudson River, as part of the Park West Vocational High School, it has given students an opportunity to learn engine repair, stewardship, radio and electronic repair, and seamanship — all useful skills leading to jobs in marine industry.

Although New Yorkers sometimes feel removed from their waterfront, they should find the Year of the Coast an ideal time to become aware of their marine environment and our need for marine education.

City boat owners discuss marine facilities with Sea Grant Specialist Stephen Lopez (third from left).

Marinas: Need for Expanded Facilities

by Stephen Lopez, Sea Grant Specialist in New York City

Editor's Note: This article is the third in a series of three on New York City's waterfront, an area which covers roughly 580 urban coastline miles.

The outlook for new recreational boating facilities in urban areas is mixed. On New York City's waterfront, for example, there are serious problems of disrepair with some existing facilities. Also, questions of safety, appropriate tax collection for public services provided, and water quality maintenance are raised by the city's liveaboards.

New York Sea Grant researchers Charles Heatwole and Neils West are currently studying boaters' perceptions of the New York harbor. They have found that boaters' highest preferences are for improved water quality including clean up floating debris and chemical pollutants as well as improved safety and better channel markings.

However, studies indicate that as a result of the public's growing awareness of the potential value of urban waterfronts, there is a strong demand for inner city boating slips. For instance, recent study by the Port Authority of New York and New Jersey of the lower Hudson River in New York City, indicates an "unmet demand" for 12,500 new slips.

Plans for New Boating Facilities

The New York City Department of Ports and Terminals is interested in capitalizing on this demand for recreational boating facilities. At the present time, the agency is considering including new slips as part of several plans for "mixed use" developments in the Upper New York Bay and East River.

In downtown Manhattan, the state Urban Development Corporation's Battery Park City project, administered by the Battery Park City Authority, includes plans for marina development in Knickerbocker Cove.

Meanwhile, the National Park Service is developing a 525 slip marina off Flatbush Avenue in Dead Horse Bay, called the Barren Island Marina, and plans additional marina facilities at other Gateway sites.

Why is there so much interest in the public sector over marina construction? Income from leases on publicly owned land, aesthetics and public access are important considerations.

According to Gateway officials, the Barren Island marina will enhance public accessibility to water-based recreation.

The Ports and Terminals and Urban Development Corporation projects in New York City are comparable to the revitalization of Boston's waterfront. There, the aesthetic value of the waterfront is clearly of great importance. The marina gives a sense of romance to the otherwise commercial and industrial atmosphere on the waterfront. The boats dramatize the water and provide interesting passive recreation for the whole community.

Despite past problems, urban marinas have a great appeal for recreational development in the future. Hopefully, some of the lessons of the past will not be lost on this new generation of facilities.

RESEARCH

Virus — from the Not-So-Blue Sea

by Hedy Deuschle, Rensselaer Polytechnic Institute in Albany

That raw sewage infiltrates ou coastal waters is certainly no sur prise. But the fact that viruses fron the sewage are transferred fron air bubbles in the sea to the wind an the atmosphere is a surprise.

During the summer of 1976, Ed ward and Martha Baylor, and Dunca Blanchard from the State Univer sity of New York at Stony Brook an Albany, respectively, demonstrate virus transfer from water to win during experiments conducted a Kismet Beach in Long Island, Nev York. Kismet Beach is a high energ beach, that is, a beach with heav surf and wind.

During their experiments, th Baylors and Blanchard discovere that viruses in the seawater tend t adhere to and be absorbed by risin air bubbles in surf or whitecaps When the bubbles reach the surface they burst and eject a tiny jet w in turn, breaks up into an aerosol c seawater sending viruses into the ai Once in the air, the wind can carr the virus-laden aerosol a considerabl distance, depending upon speed the wind and the longevity of th viruses.

In addition to transfer from surf t wind, the researchers unexpectedl discovered that viruses reach a highe concentration in the aerosol than i the seawater from which they ar ejected. The higher concentration i caused by the viruses' absorption b air bubbles and ejection into the ai

According to Edward Baylor, th impact of this research on publi health is two-sided. On the one-han the dumping of raw sewage lade with viruses into the ocean ma create an airborne health problem "But if you're wondering why every one on Long Island is not sick, it because there is also evidence thi phenomenon is beneficial," Baylo said. "It can give people tiny sures to all those viruses, leadi to natural immunty."

UPDATE

Publications Available —

Two publications may be of use for New York City and other urban residents: **A Citizen's Action Manual: A Guide to Recycling Vacant Property in Your Neighborhood** and **Coastal Zone Management Executive Summary: Draft New York City Plan.** The former provides suggestions for organizing neighborhood groups, developing action plans, forming land trusts and recreational site design and maintenance. A 1979 publication by the Heritage Conservation and Recreation Service and the Trust for Public Land, it is available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The latter publication describes issues, policies and techniques in the organization, development and management of New York City's coastline. It is available from: Department of City Planning, 51 Chambers Street, Room 515, New York, NY 10007 as publication NYCDCP79-29, November 1979.

Doyle Goes to New Hampshire Sea Grant —

Brian Doyle, regional specialist based in Brockport, has assumed the position of Director of Marine Extension and Public Education for the University of New Hampshire Marine Program. Responsibilities include program leadership for their marine advisory staff and educational responsibilities in coastal resources management.

Brian came to New York in 1976 as a specialist in coastal processes and coastal resources management. His educational programs have been well received along the western shore of Lake Ontario and statewide. We will miss Brian and his expertise but look forward to working with him in a panion Sea Grant program.

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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:

_____ **Getting the Most from Wood,** Marine Trades Flyer #14, 1979, 4 pp.
_____ **Shoreline Erosion Protection for Marinas,** Marine Trade Flyer #13, 4 pp.

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

_____ **Troubled Waters: The New York Bight,** D. Edgar, 1980, 4 pp., 15 cents.
_____ **Wild Plants of the Wet Lands: A Field Guide,** A. S. Minardi, 1976, 50 pp., $2.00.

For the following publications, make checks payable to The Stony Brook Foundation:

_____ **Surficial Sediment and Seagrasses of Eastern Great South Bay,** N.Y., Marine Sciences Research Center. G. T. Greene, et. al., 1978, 30 pp., $4.00.

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

_____ **Lipids of Fish Fillets: Changes Following Cooking by Different Methods,** Sea Grant Reprint Series, J. Mai, et al., 1978, 6 pp., $1.00.
_____ **Effects of Chlordane and Heptachlor on the Marine Dinoflagellate,** *Exuviella baltica,* Lohmann, Sea Grant Reprint Series, B. Magnani et al., 1978, 8 pp., $1.00.
_____ **Waves Over Soft Muds: A Two Layer Fluid Model,** Sea Grant Reprint Series, R. A. Dalrymple and Phillip L. F. Liu, 1978, 11 pp., $1.25.

Lake Ontario, *continued from page 2*

More importantly, at the workshops, Great Lakes Tomorrow will be asking participants to identify what types of alternative shoreline protection measures, including lake level regulation, ought to be researched in more detail by the Corps of Engineers. Additionally, participants will be encouraged to consider and assess potential impacts of the alternative measures. Based upon this input, the Corps will determine the specific direction which the next phase of the Lake Ontario Shoreline Protection will take.

The workshops represent an opportunity for you to provide timely input to a study which may have great impact on the future of Lake Ontario coastal resources. They will be open to any interested person and are scheduled for:

June 23, 1980 — Watertown
7:00 - 10:00 p.m.
Jefferson Community College

June 24, 1980 — Mexico
7:00 - 10:00 p.m.
BOCES Building

June 25, 1980 — Rochester
7:00 - 10:00 p.m.
Greece Athena H.S.

June 26, 1980 — Rochester Airport
10:00 a.m. - 3:00 p.m.
Sheraton Inn - Airport

June 27, 1980 — Wilson
7:00 - 10:00 p.m.
Wilson Jr. H.S. Auditorium

For further information contact Bob Buerger at our Oswego office.

The Challenge, *continued from page 2*

vicing equipment, planning the year's schedule and playing salesman. With the coming of spring, marinas usually receive the first priority. "Substantial ice damage and fluctuating water levels tend to bend pilings and wipe out wooden dock sections," according to Andy. "We try to get them back into servicable operation as quickly as possible because boaters depend upon these facilities."

When not involved in his business Andy can probably be found tendin to the responsibilities of his recentl acquired position of vice-president o the Western New York Marine tractors Association (WNYM This fledgling organization, forme little more than a year ago, ha opened up new avenues for Andy an other members. "Besides expandin my knowledge of such things as th Small Business Administration pr grams, government contract proce dures and the Coastal Managemer Program, I've learned about diffe ent construction techniques and ma terials. This type of information in valuable to a small business such a mine these days."

Andy credits Sea Grant with stim ulating and encouraging marine cor tractors to attempt to form the ass ciation. "Although we've still got ways to go, the association is steadil maturing thanks to the assistanc provided by Sea Grant. We look fo ward to continued cooperation and close working relationship with th Sea Grant program," he says.

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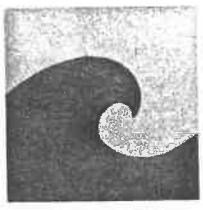

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