



Viewing New York's Coast

Winter recreation on our Great Lakes

by Michael P. Voiland, Sea Grant Extension Specialist
Jean L. Kinnear, Sea Grant Extension Intern

You're recreating in mid-winter along the shores of New York's Great Lakes? You've got to be kidding! Can anybody really enjoy themselves outdoors in the cold, ice-choked environment? You bet they can, and they do! Perhaps you ought to try it.

Each year when most would believe that winter's icy grip has a strangle-hold on all outdoor activities along Lakes Erie and Ontario, a small but growing group still descends on the shoreline to have fun. You might try this unique opportunity, too. While small in number compared to "fair weather" fun-seekers, the present bunch makes the best of hard weather, and in certain cases hard water, while using and enjoying the Great Lakes coastal environment.

Although the activities are many and varied, they all include one common factor — cold, wintry weather! Along with the traditional ritual of ice-fishing, the somewhat lesser known phenomena such as ice boating, ice-diving and even ice watching occur, often to the disbelief of onlookers and those quite content to wait until early spring, when they can try frost-fishing, frost-biting and bird-watching.

Perhaps a brief look at these activities may identify some that you would like to try.

'Ice fishing

As one might expect, ice fishing is one of the most popular winter recreational activities in the Great Lakes region. Its popularity is made clear at the carnival-like ice fishing

derbies to be held this year at such hotbeds of "hard water" fishing as Alexandria Bay, Cape Vincent and Clayton. Ice fishing in the Thousand Islands will be climaxed by the International Ice Fishing Derby at Fishers Landing. (For a copy of "Thousand Islands Winter Calendar of Events," write to 1000 Islands, Box 428, Alexandria Bay, N.Y. 13607.)

Mid-winter angling goes on in all the iced-over, protected embayments along both lakes, including Sodus Bay, Braddock Bay and Little Sodus Bay. In addition, many fishermen bore through the ice cover of Lake Erie in quest of the three "p's"

of winter angling — perch, panfish and pike.

"Ice fishing seems to be improving and gaining more followers along Lake Ontario," says "Skip" Miller, former Sea Grant Recreation Advisory Committee member and superintendent of Hamlin Beach State Park. "The ice fishing for pike in Braddock Bay, for example, appears to be getting better and more popular each year."

If you're a convert to ice fishing, its techniques and its rigors, or if you'd like to learn more about it, perhaps giving it a try, a Sea Grant

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Citizens tour NYC waterways

by Michael Jovishoff, Sea Grant Extension Specialist

"Fill it in," uttered a long time resident as he stood on the banks of Coney Island Creek. "This is a crime," was State Assemblyman Ivan Lafayette's response to a newsman's question after a boat ride on Flushing Bay.

Both these gentlemen were expressing feelings common to the those who toured four New York City tributaries last fall.

As part of a study of 13 New York City tributaries by the City's 208 water quality improvement program, Sea Grant, in cooperation with the Departments of City Planning and Water Resources, developed a series of four walking and boat tours. The purpose of these tours was twofold: to introduce the study to public officials and con-

cerned citizens and to create an opportunity for public input into the tributary study. The tributaries selected were Lemon Creek in Staten Island, Coney Island Creek in Brooklyn, Flushing Bay and Flushing Creek in Queens, and the Bronx River and Pugsley's Creek in the Bronx.

The tours brought out a range of issues and problems common to all of New York City's waterways: maintaining a natural environment against the adverse effects of uncontrolled residential development, as in Lemon Creek; reversing the degradation of the waterway caused by industrial and residential discharges along the Bronx River and Coney Island Creek; preserving a

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Winter recreation

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booklet "Ice Fishing" offers useful information on gear, clothing and safety factors (see I WANT MORE).

Ice boating

Streaking across a barren, flat surface in a small craft, reaching speeds of more than 100 miles per hour is not a scene from "Star Wars", but it is ice boating (sometimes called ice sailing) on either Sodus or Irondequoit Bay. Some 50 members of iceboating clubs on these two Lake Ontario embayments enjoy the fast (boat speeds up to four times those of wind speed), cold (think of the wind-chill factor), rough (the ice is usually rugged, with holes and small ridges), yet exhilarating experience.

Stu Sill, member of the Sodus Bay Iceboat Club and a local marina operator, notes that iceboating is excellent, given a normal winter, in both areas. "Sodus and Irondequoit Bays get thick ice cover, but are not in the shadow of a lake-effect snowbelt. This usually leaves snow-free, hard ice surfaces for ice boaters," Sills points out.

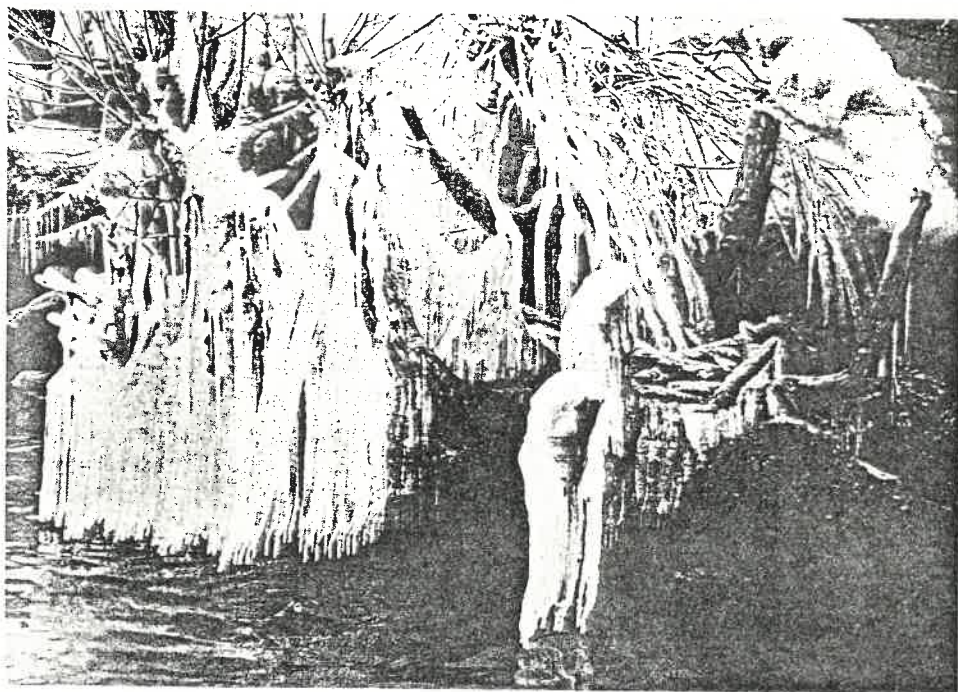
A long-time Lake Ontario ice coater, Dick Doherty, reports the conditions for ice boating are pretty good — so good, in fact, that Sodus was the site of the International Championship Ice Regatta a few years back.

Ice diving

"Ice diving is a growing activity along the Lake Erie Shore," relates Tony Linton, scuba diver and proprietor of a scuba-diving shop in Dunkirk. "The development of the dry suit and other refinements in equipment have made diving beneath the ice more popular than ever before." Linton mentions that places where flat ice has formed, with little action of moving ice piles, are the safe sites for ice diving along the Lake Erie shore. A word to the wise from Linton is, "take instructions, go with other experienced divers, and you might just learn to love winter ice diving."

Ice watching

This really isn't as boring as it sounds. Indeed, the forces of winter can produce some truly beautiful formations and patterns in glistening crystals, snow sculptures and ice mounds. When the sun is shining,



Winter recreation on Lake Ontario often includes "ice watching". Those who enjoy this unique winter activity often capture the beauty of ice sculptures through photography.

ice watchers with a camera in hand record some of these natural works of art in all their radiance.

A truly unique ice phenomenon to watch and photograph is the ice volcano. These snow and ice mounds "erupt" with the swelling of unseen, sub-surface waves. The spewing of spray, slush and ice builds these volcano-like cones to heights of 15 feet or more. The chance to view these short-lived physical features along New York Great Lakes in winter can be good cause to leave that warm home for a shoreline hike.

Yes, New York, there are indeed many leisure activities going on along the icy interface of Great Lake waters and "terra firma." We have focused on only a few winter activity uses (and we'll focus on early spring ones next issue), but you should realize that many other activities such as winter camping, hunting, skating and cross-country skiing occur near the lakes and perhaps can be enhanced by their presence. So, if the spirit moves you, and the flesh is willing (and warmly outfitted) why not give a Great Lake a try this winter?

Tours *continued from page 1*

wetland area in the face of landfilling, both legal and illegal, as seen in Pugsley's Creek; and reconciling the importance of a viable recreational facility, a marina and a park, with the needs of a major regional airport for expansion, as pointed out in Flushing Bay.

The enthusiastic response attested to the concern the affected communities have for these issues. A cross-section of the community's residents were present at each tour. Among the 25 participants at Flushing Bay were State Assemblyman Ivan Lafayette, in the forefront of the clean-up efforts; Virginia Dent,

director of the Northeast Queens Nature and Historic Preserve Commission; Pat Beckles, chairman of the Environmental Committee of Community Board 3; Len Kahn, district manager of Community Board 3, and Claire Stern of the federal Environmental Protection Administration. Mr. Beckles provided an illuminating narrative detailing the condition of the Bay.

In the Bronx, Ruth Anderberg of the Bronx River Restoration Project provided essential assistance needed to bring out a total of 52 people on a cold November morning. Present also were State Assemblyman G. Oliver Koppell, chairman of the

Please complete the readers' survey in this issue!

Commercial fishermen tax guide available

by John Scotti, Sea Grant Extension Specialist

If two-thirds or more of your gross income is from commercial fishing, you'll find the 1978 edition of "Tax Guide for Commercial Fishermen" valuable.

Fishermen using a tax year starting January 1 must file a return by March 1 (not April 1), or you can file an estimated return with any taxes due by January 16 and pay any balance due by April 17.

The 39-page tax guide is available from Riverhead, Stony Brook and Fredonia Sea Grant Extension Offices (use the I WANT MORE form on page 6) or from many Internal Revenue Service offices.

In any tax year, the single, most important consideration is tax management — being aware of your tax status and requirements so you can react to whatever tax situations occur. Last January, we talked about the Tax Reform Act of 1976, which contained several changes which could affect the tax status of commercial fishermen. More changes are explained below. (If you want a copy of last January's issue of COASTLINES with tax information, write the Ithaca Sea Grant Office.)

Self-employed crew members: A crew is considered self-employed

if their pay is totally dependent on the boat's catch of fish and the operating crew is less than 10. The vessel owner does not need to withhold federal and state taxes nor pay Social Security or federal unemployment taxes for crew members. However, if a reported payment is made to a crew member for duties which are not performed in catching fish, that person cannot be considered self-employed. That payment and share of the catch proceeds are subject to normal employee tax handling by the boat owner. This does not apply for vessels over 10 net tons, whose owners must pay federal unemployment taxes for self-employed crew members.

Employment taxes: Owners of fishing boats must report the amount of crew shares received by each crew member considered self-employed. "Statement for Certain Fishing Boat Crew Members" Form 1099F must be filed with the IRS on or before February 28, 1978. Copy B of that form is given to crew members (tax guide, page 10).

Self-employment tax: Self-employed fishermen, in addition to filing an income tax return, must pay self-employment tax if earnings

exceed \$400. The self-employment tax is part of the system providing Social Security coverage, an important source of retirement or disability income for many fishermen. Money you receive from Social Security is based on your average income which you are paying into the program (tax guide, page 15).

Individual Retirement Plans can reduce current taxes and provide for retirement income. If you are a self-employed fisherman, you can establish a retirement plan for yourself. Contributions up to \$1,750 (maximum) that you make to this plan can be used as an income tax deduction during the year you made the contribution (tax guide, page 14).

Income averaging can save you money! If your income goes up and down from year to year, you may be able to use the Income Averaging Program to reduce taxes. If your income for 1977 was much greater than that of the previous four years, you may want to figure your tax using the income averaging method and pay a smaller tax. Your averageable income must exceed \$3,000 (tax guide, page 36).

Casualty losses: Severe weather and ice conditions last winter caused the coastal areas of New York to be declared a disaster area by the President. Losses from damage to property not covered by insurance are deductible on your federal income tax. You can deduct such a disaster loss in the tax year preceeding the one in which the disaster occurred. If the preceeding year's tax return has already been filed, the filing of an amended return will serve as a claim for refund—tax form #1040X. This, in concept, would allow you to offset higher income which presumably you earned in a year in which no disaster occurred. However, if your income in 1977 is equal or higher than 1976, you probably would pay less overall tax by claiming the loss this year. The New York Sea Grant Insight booklet #8, "Tax information on Casualty Losses for Coastal Property Owners" further explains this (see I WANT MORE). Also, see tax guide, page 28.

If you have any questions about this information or other tax questions, call me at the Stony Brook Sea Grant office.

tours

Assembly's Environmental Committee; Vincent A. Marchiselli, Assemblyman from the Bronx; City Councilperson Aline Ryan; Clyfee Mahdu, chairman of Community Board 9; District Manager Muriel Lutwin; and board members Joan Prigge, Lionel Howard and John Minnic.

Community Board 9 and Sea Grant are currently involved in analyzing the recreational potential of their waterfront. Answering the citizens' questions were Harvey Schultz, director of the 208 efforts for the Department of City Planning; John Roswell, director of the 208 efforts for the Department of Water Resources; Martin Goldstein of the Department of City Planning; Fred Gross, director of the Tributary Study; and Rosalie Hoffman, director of Citizen Participation for the city's 208 program. The boat used was the 65 foot "Pisces," donated by the Food and Maritime High School and skippered by Captain William Van Loo.



A highway drain emptying into Coney Island Creek in Brooklyn was one of the "featured attractions" on a New York City waterway tour conducted last fall by a water quality improvement program.

Marine education possibilities are unlimited

by Brian E. Doyle, Sea Grant Extension Specialist

As evidenced by a recent enthusiastically received workshop in Victor, Sea Grant marine education efforts in upstate New York are off to a flying start. Adopting a philosophy that marine education encompasses not only oceans, but all of the earth's water resources, including lakes, rivers, streams and ponds, this workshop enabled upstate marine educators to meet formally for the first time. The event was sponsored by the New York State Marine Education Association, which was founded in 1975 to serve the needs of marine education at all scholastic levels, and the New York Sea Grant Program.

The day's featured speaker, Dr. Verne Rockcastle, Cornell University, demonstrated to a group of 126 elementary and high school teachers, administrators, curriculum specialists, 4-H agents and others that some of the fundamental properties of the aquatic environment can be learned without access to sea water. This was accomplished by having the group perform a few simple, but valuable, learning exercises which are available to students and teachers in any inland school. Dr. Rockcastle explained that, "these (exercises) may serve as a cognitive base for extended investigations with both water and organisms later." This is not to imply that upstate New York is without outdoor aquatic classrooms. The region is replete with "laboratories" for field investigations, including shorelines along two Great Lakes, the Niagara and St. Lawrence Rivers, the Finger Lakes and countless streams, farm ponds and marsh areas. Dr. Rockcastle went on to examine how to best maximize one's own resources in formulating imaginative and exciting curriculum ideas.

Since the workshop was part of a national effort coordinated by the University of Delaware Sea Grant Program, the participants were given the opportunity to comment on a draft Marine Education Policy Statement being prepared by Harold Goodwin of Delaware. The upstate, freshwater flavor of the audience came through most clearly in this session. Most people felt that a na-

tional statement is needed, but expressed concern that the term "marine", however broadly defined, may mislead some.

Other sessions that day included a presentation on the needs for marine education, a panel discussion by educators from schools with existing marine education programs, and insights on how to get funds for starting or continuing programs. Certainly the most popular attraction of the workshop was the curriculum display area which contained a potpourri of marine education materials ranging from aquaria to sea chanteys. Workshop attendees were able to participate in a variety of "hands on" activities including water quality testing, the Japanese art of fish printing and setting up aquaria.

While in its infancy, marine education in upstate New York has an opportunity to evolve into a broad, multidisciplinary program. Too often in the past, marine education has been equated with marine science/biology and has been kept within a narrow framework. The challenge that lies ahead is to break from this classical mold and develop new curricula which will allow for the integration of marine education into the social sciences and humanities. This task may not be as difficult as first seems, for a wealth of materials and information already exists.

The possibilities appear unlimited. Water resources are vital to our very existence. To assure wise management of these resources in the future, what better place to start than educating our youth of today.

A question of money?

by Liz Pennisi, Sea Grant Extension Intern

Do you have a brilliant idea for a marine education program — but no money to support it? Is your administrator enthusiastic about marine education, but concerned that no more new programs can be squeezed into his or her already strained budget? In this time of tight monies, it is no surprise that even staunch proponents of marine education are skeptical.

At two recent marine education workshops, school administrators and teachers from upstate and downstate New York exchanged ideas on how to overcome this problem. Some suggested ways of fitting marine education into existing budgets — as part of other programs or through re-appropriated end-of-the-year funds. Others knew of outside sources. Mini-grants available from the New York State Education Department, funds available through the Office of Education and the National Sea Grant Office and grants available from the National Science Foundation were discussed.

It was noted that few grant sources are specifically earmarked for marine education, but many have potential for a marine education orientation. For instance, use of career education monies to develop programs on marine-related occupations was mentioned. With marine education being as all-encompassing and exciting as it is, everyone at these workshops agreed that marine education has potential relevance to almost every subject area. With a little imagination and thought, marine education programs can be incorporated into almost any educational endeavor.

That marine education has so much potential in so many areas was probably the most important realization to stem from these funding discussions. Almost as significant, however, was the recognition on the part of many that a marine education program may not necessarily represent a big expenditure. The water from your faucet, a local stream, lake or marsh, even a fish store are just a few of those very inexpensive, but extremely valuable, resources that can help make marine education a reality for even the most strained budgets.

If you are interested in obtaining more information about funding for marine education, contact me in the Brockport office.

advances in New York State

A modern-day pioneer

by Brian Doyle, Sea Grant Extension Specialist

Upstate New York marine educators consider Barbara Spector a pioneer. She strongly believes that only by humanizing the educational environment can a teacher affect significant change in student attitudes. A curriculum implementation specialist in the Syracuse City School District, she also teaches advanced marine biology courses and takes her students on field trips to Woods Hole Oceanographic Institute in Massachusetts.

A student in one of her classes interested in marine biology first sparked Dr. Spector's interest in

marine education. "Without a doubt," she exclaims, "marine education is a suitable subject to teach in upstate New York. That youngsters in this region are not exposed to the ocean or salt marshes is all the more reason why it's vital they learn about it in schools. Because they are inland, sea life topics must be brought to their attention."

She noted that since marine education now encompasses all water resources including lakes, streams and ponds, it has become the single, most holistic approach that one could possibly take to education.



Dr. Barbara Spector

When she learned Woods Hole was interested in utilizing their buildings off-season, she arranged to take her students there for lab experience. The students took the responsibility of raising funds from raffles, baby-sitting and candy sales. Another major funding source was the Community Foundation of Syracuse and Onondaga Counties. No school district monies were involved. Students had very positive comments about their experiences at Woods Hole.

Discussing Sea Grant's role in marine education, she said that Sea Grant seems most suited to stimulating an awareness among school systems that marine education can bring a holistic approach to education. Specialists could show educators what techniques are available and provide leadership and expertise in staff development.

"Educators are saying the only way to break away from the present compartmentalized education process is to make it more life relevant. By demonstrating that marine education can be infused with the humanities, the social sciences and the hard sciences, Sea Grant has an ideal opportunity to bring the individual learner back to the environment as a whole human being," she added.

Commenting that there is a need for in-service marine education for Upstate New York teachers, Dr. Spector emphasized that "it is not a case where we need to teach people facts about water; it is a case of re-orienting teachers away from compartmentalized education into a view that education is, in reality, all tied together, and each discipline is intimately dependent on the other."



The major 4-H activity involving Sea Grant takes place in New York City. The specialist there has stimulated a Marine Educator's Association, which is seen as a prime means of expanding the knowledge of youth and helping them identify career opportunities in the marine field.

UPDATE

Donna Edgar has joined Sea Grant as an extension specialist to develop an educational program to provide communities, industries and political leaders with an understanding of the New York Bight ecosystem and the impact alterations have on that system.

Donna has a bachelor's degree from Southhampton College and a master's degree from Adelphi University in biology/marine science. She has been an environmentalist with the Town of Islip Department of Environmental Control and an adjunct faculty member in Natural Science at Southhampton College.

New Policy

The New York Sea Grant Extension Program has initiated a new policy which will affect our out-of-state *Coastlines* readers. Out-of-state residents who wish to receive our newsletter will be charged \$2 for a two-year subscription. The \$2 should be sent with the subscription update form which is on page eight of this issue. (Make checks payable to Cornell University.)

This decision was made because *Coastlines* is aimed at those who are intimately involved with New York State's coastal regions and resources, particularly those whose livelihood and well-being depend on these resources. The newsletter is a timely source of practical information on coastal issues and problems in New York, and it focuses on articles and information of use in solving coastal-related problems. It is a regular source of contact with our audiences intended to enhance and support other Extension Program educational and information efforts.

The New York State Sea Grant Program is made possible through a grant from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. COASTLINES is published bi-monthly by the Sea Grant Extension Program. Free subscriptions are available upon written request to COASTLINES Editor Ms. Gay Hawk, Media Specialist, Sea Grant Extension Program, Fernow Hall, Cornell University, Ithaca, NY 14853.

Jim Daniels is our new extension associate in the Cornell Department of Food Science. He will be serving as a resource person and as a liaison between research specialists, field extension staff and the seafood industry in the area of seafood products.

Jim has a bachelor's degree in marine science from Juniata College in Pennsylvania and a master's degree in seafood technology from North Carolina State University. He has training in food analysis, food research and development, aquaculture and fishery science.

The New York Sea Grant Intern Program will be continued in 1978. Four positions will be advertised in January to begin in June. These internships will be in commercial fishing gear technology, marine communications, recreational facilities and seafood marketing/business management.

According to Mike Duttweiler, assistant program leader, "The purposes of the internships are to help

create a pool of persons with marine extension experience and to provide appropriate work experience for persons wishing to enter marine extension."

Putting fish on the table, in many cases, uses less energy than putting meat there for dinner. A recent study shows it takes more energy to produce an egg than it does to produce fish such as herring, ocean perch, tuna, cod, halibut and flounder — one of New York's prime species.

Actually, except for shrimp and lobster, less energy is used to produce most fish than is used for not only eggs, but also for broilers, pork, milk, beef and lamb.

An added feature is that fish provide more nutrition as well as less cholesterol, saturated fats and calories than most farm animals and their by-products.

In calculating how much energy is used to produce these foods, researchers at Tufts University considered energy used for catching, processing, trade, transportation and home preparation.

I WANT MORE

Additional information which should help you solve coastal related problems is available from New York Sea Grant. Check the publications which interest you and send to your nearest Sea Grant Extension Program Office.

Single copies of the following publications are free.

- _____ Tax Guide for Commercial Fishermen, IRS, 39 pages.
- _____ Insight #8 "Tax Information on Casualty Losses for Coastal Property owners."
- _____ Ice Fishing, a publication from the University of Wisconsin.
- _____ Proceedings from the First Can-Am St. Lawrence River Forum.
- _____ Views on Sea Grant Advisory Service Work, Wilkins, June 1977, 24 pages, NYSG-AS-77-04.

There is a charge for the following publications. Make checks payable to Cornell University.

- _____ New York Bight Atlas Monograph #28: Air Quality, Volker A. Mohnen, August 1977, 43 pages, \$4.00.
- _____ Environmental Impact on Property Values Along New York's Lake Erie Coastline, W. Fisher, N. Starler and A. Fisher, Sea Grant Reprint Series, 11 pages, 25 cents.
- _____ Effects of Climatic Change on Fisheries, J. H. McHugh, Sea Grant Reprint Series, 8 pages, 25 cents.
- _____ A Rationale For Evaluating Thermally Induced Biological Effects Due to Once-Through Cooling Systems, Carter, et. al., MSRC #7, September 1977, 65 pages, \$4.00.
- _____ Shoreline Survey: Great Peconic, Little Peconic, Gardiners, and Napeague Bays, Eisel, MSRC #5, May 1977, 38 pages, \$4.00.

New York's Coast: Hudson River—a valuable resource

The Hudson is a very special river. It rises out of the Adirondack Mountains as a trout stream, broadening and flowing with the tides to end in the Atlantic Ocean. The Hudson is a river, estuary, source of water, ship channel, fishery and spawning ground. Its shores are lined with rail lines and upward from its banks are stands of hickories, mountain laurel, sassafras, maple, birch, black walnut, white oak, sycamore, cedar and birch.

Over 50 species of fish swim in the waters of the Hudson River including shad and anchovies. Eagles, Osprey and Great Blue Heron can be seen below the Troy Dam. Physical and biological characteristics provide spawning and nursery conditions that are both complex and compelling — nutrients and fish life moving seasonally with the interface between fresh and salt water, all part of a natural rhythm in which food supply keeps pace with each successive spawning run — providing New York's coastal waters with an abundance of life.

The Hudson coastal area is one of the most outstanding scenic attractions of the United States. Its scenery ranges from the rocky columns of the Palisades at the lower end to the picturesque views of the Catskills along its upper reaches; from the pastoral scene of mountainside farms to the industrial shores of Haverstraw and Newburgh Bays. Between them lie the virtually untouched Hudson Highlands, where for 15 miles the mountains rise straight from the water's edge. The outstanding scenic resources of the Hudson Valley have inspired artists, such as the Hudson River School of Painters, to preserve these treasures.

The Hudson River Valley and its adjoining upland have figured prominently in American history. The Indian population of the area in 1600 has been estimated at 65,000. The Hudson Indians were able to exist within the Hudson Basin ecosystem without support from adjacent areas by combining maize, beans and squash agriculture with hunting, fishing and collecting wild plants. The higher density of the Indian population of Long Island and at the mouth of the Hudson can be explained by the abundant supply of marine resources, especially shellfish. The Indian settlement system focused on villages that were relocated as soil declined in fertility, the supply of firewood became scarce, game became scarce or as the accumulation of trash and vermin became intolerable.

In 1609 Henry Hudson named the river "The Great River of the Mountains." Dutch fur traders were in the area between 1612 and 1623, and Dutch settlement began in 1624. The names of George

Washington and Benedict Arnold are associated with important events along the river, and the battles at Saratoga and Tappan Zee bear testimony to its significance.

The Hudson River figured predominately in the history of the Industrial Revolution with Robert Fulton's steam navigation on the river in 1807 and with the subsequent opening of three canals — the Erie, the Delaware and Hudson, and the Champlain — establishing an important transportation network.

Still an important link in the transportation network, the Hudson is navigable for ocean going vessels to Troy, and existing navigation projects provide a system for shallow-draft vessels extending from the Port of New York to the Great Lakes, to Lake Champlain and eventually to the St. Lawrence River. In 1973, the Port of Albany handled approximately 1.1 million tons of general cargo and the Port of New York, during the same time, handled more than ten times that amount. For the Albany region this trade generated ten million dollars, with each cargo ton worth more than twenty dollars contributing to the area economy.

The Hudson River coastal area is a reflection of a national dilemma: how to satisfy the demands of a high level consumer society without ruining the land, air and water around us.

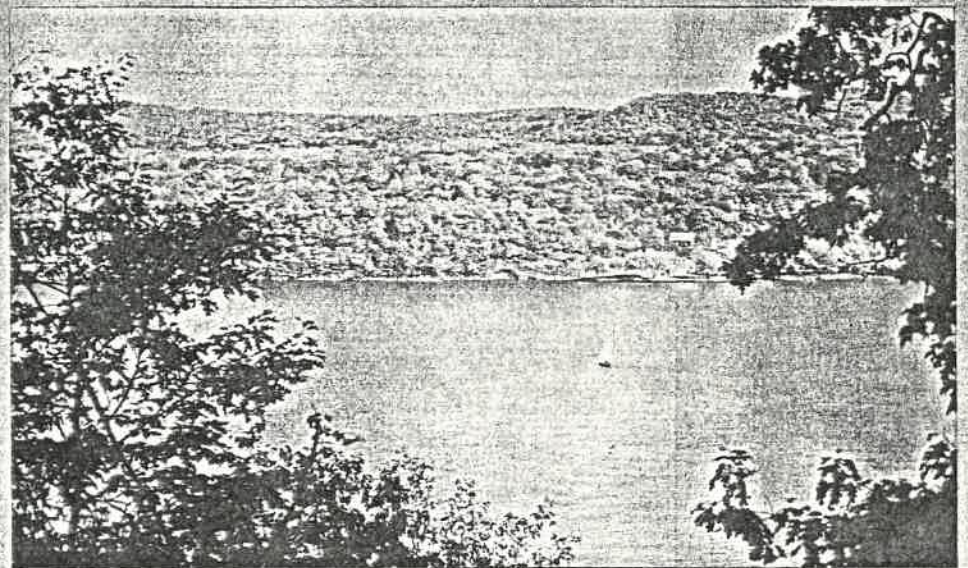
The New York State Coastal Management Program must find a means to balance the economic needs of the State with the protection of the fragile coastal environment. In the Hudson River coastal area the program must address the problems of nuclear energy expansion which will draw large amounts of water from the River; water pollution, including toxic



For additional information, contact Robert Hansen, Program Manager, or Dot Fellows, Public Participation Specialist, at the New York Coastal Management Program, Department of State, 162 Washington Ave., Albany, New York, 12231, 474-5793.

substance contamination such as PCB concentration; the loss of wetlands; and potential oil spill calamities.

The Hudson is one of our national treasures, a great scenic wonder and the heart of an ecosystem and transportation system supporting nearly one tenth of the nation's population — a resource in need of public concern and proper management.



The Hudson River coastal area is one of the most outstanding scenic attractions of the United States.

This foldout page is prepared and paid for by the New York State Coastal Management Program.

Energy Resources

There are a number of coastal issues and problems that have been of public and governmental concern in New York State. Although state programs have been developed to deal with them, there must be public and government concern directed to these areas. The Coastal Management Program provides an excellent opportunity to deal with the coastal problems and to develop methods of managing land and water uses to protect, develop and restore our diminishing coastal resources.

The siting of energy facilities, the development of long term, environmentally safe energy sources and the location of energy support facilities are of extreme importance to an industrial and populous state like New York. The development of energy facilities could create substantial environmental and social impacts. The anticipated increased dependency on coal may result in an increase in storage and transshipment (transport) facilities in coastal areas. Development of the natural gas potential in Lake Erie could result in new construction, expansion, of processing plants and additional transportation facilities, in addition to increased natural gas supplies. New York State is located between the offshore Georges Bank and Baltimore Canyon. This location creates a possibility for the construction and operation of both onshore and offshore energy facilities required by Outer Continental Shelf (OCS) exploratory and production activities.

A variety of energy facilities have traditionally been sited in coastal areas, primarily for access to cooling water and/or waterborne transport. It is more likely that the developers of future energy facilities will seek similar locations. In many instances, the facilities will clearly require access to coastal waters such as a petroleum tanker dock or a liquified natural gas (LNG) facility.

In New York State, there are vastly different facility siting and permit procedures in effect. Electric power plants and transmission lines are subject to extensive review under Article VII and VIII of the

New York State Public Service Law. Under these proceedings, public need and environmental compatibility of a proposed facility must be demonstrated.

For the other energy facilities, petroleum or natural gas, there are no similar detailed review requirements at the state level. Decisions relating to public need and location are often left to the developer and the local government. Unfortunately, as coastal resources become scarcer, this approach could give rise to greater conflicts, particularly between economic development and conservation interests. Not only will the chosen site for a facility be questioned, but also the need for the facility in the first place.

The Coastal Management Program must attempt to resolve the conflicts that will arise as a result of competing demands for New York State's limited coastal resources. Thus, the CM program must be able to sort out those energy related activities which are coastal dependent and ensure that optimum sites are selected for these facilities.

Some of the energy facilities that may require sites within the State's coastal areas are discussed below.

Electric energy facilities

The siting of electric power plants and transmission lines in New York State has always provoked local opposition — resistance has grown substantially over the last ten or so years. As many as 20 new electric power generation units are proposed at various locations in the State's coastal areas.

Thermal pollution of coastal waters has been a principal concern surrounding most power plant proposals. When these waters are used for cooling purposes, their temperature levels are increased and may have an adverse impact on aquatic ecosystems.

Radioactive emissions from nuclear fueled facilities is another problem. There is concern of a possible (however slight it may be) "meltdown" of the reactor's core as well as potential danger from radioactive waste storage. If improperly stored, these wastes may seep into the nearby surface waters or aquifers and present a public safety hazard for long periods of time.

The intrusive visual appearance of these power generation facilities and air pollution emissions from fossil fueled units are often cited as concerns.

Petroleum related facilities

Refining, offloading and storage activities are petroleum facilities that are often situated within coastal areas. The availability of water transportation, a very economic means of transporting products in bulk, is a primary reason for siting these facilities near the coastline. The coast's proximity to offshore drilling operations is also a factor cited for these onshore facilities.

A major concern surrounding most petroleum related facilities is their adverse impact upon the quality of the coastal waters. Oil spills and water pollution emis-

sions, resulting from the handling and processing of the petroleum, are the primary means by which the quality of the waters is impaired.

Air pollution is another concern that is raised, particularly in the more urbanized sections of the State's coastal areas where the quality of air requires improvement. Impact upon the aesthetic quality of the coast, and the potential fire and explosion hazard are other cited concerns. From a positive point of view, these facilities are major economic uses which create jobs, pay substantial sums of local property taxes and attract other types of industrial uses.

Natural gas facilities

Gas production wells, pipelines and liquified natural gas (LNG) terminals are uses that are or could be situated in New York's coastal areas.

An issue currently brewing in the Lake Erie area is the drilling for natural gas in the lakebed. The ban on such operations was lifted recently by New York State for its portion of the lake. The environmental impacts of such activity are a principal concern.

Liquified natural gas facilities also present particular concerns. One of these is the potential explosion hazard associated with this type of use. The sole LNG facility in New York State is situated on Staten Island and has been inactive since an explosion incident a few years ago.

Policy directions for energy facilities

Based upon the previous discussion, the Coastal Management Program should undertake and/or support several efforts with respect to the siting and planning for energy facilities within New York's coastal areas which include:

- The Article VIII procedures relative to electric power generation units should be continued (Article VIII authority expires in 1978). At the same time, however, plant proposals that directly affect coastal areas should be required to clearly indicate an inland alternation site and demonstrate the benefits of the coastal location over the inland one.

- Long term planning processes should be established for both gas and petroleum facilities. The Coastal Management Program can recommend suitable siting criteria and planning guidelines. The State Energy Office is currently investigating such possibilities. The Public Service Commission and the Department of State will work collectively on these two areas.

- Improved and/or new siting approval procedures should be established for gas and petroleum facilities. Public need and safety and environmental compatibility should be demonstrated for a proposed facility with respect to siting within coastal areas.

Note to readers

The reports mentioned in the Coastal Aesthetics article in the last issue of COASTLINES are two in a series of reports prepared as part of an on-going study of the visual quality of New York's Coastal Zone conducted by the School of Landscape Architecture, SUNY College of Environmental Science and Forestry in Syracuse.

For a list of additional study products, contact David Harper, Project Director at the College, or the Sea Grant Institute in Albany.

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