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NEW YORK AND HER COASTAL ENVIRONMENTS

The Importance of Developing Policies for the Future

Conclusions and Recommendations

of a

Forum

J.R. Schubel
Convener

marine sciences research center
state university of new york

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J.R. Schubel

J.R. Schubel, Dean

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Marine Policy Advisory Group

Organizational Meeting
29 October 1985

A Summary of Conclusions and Recommendations

J.R. Schubel

A Report in Coastal Ocean Science and Management Alternatives (COSMA) Program Series

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INTRODUCTION

An organization meeting of an ad hoc Marine Policy Advisory Group (MARPAG) was held on 29 October 1985 in Albany. The participants are listed below:

Dutch Aldrich, New York State Department of Agriculture

Dewitt Davies, Long Island Regional Planning Board

J.L. McHugh, Marine Sciences Research Center, SUNY, Stony Brook

Jon Obert, New York State Department of Agriculture and Markets

Dennis Rapp, New York State Department of Commerce

Rosemary Scanlon, Port Authority of New York and New Jersey

Ronald Scrudato, Research Center, SUNY, Oswego

J.R. Schubel, Marine Sciences Research Center, SUNY, Stony Brook

George Stafford, New York State Department of State

William Stasiuk, New York State Department of Health

Ivan Vamos, New York State Department of Parks and Recreation

William Wise, New York State Sea Grant Institute

BACKGROUND

The meeting, called by J.R. Schubel, Dean of the Marine Sciences Research Center (SUNY), had the following objectives:

(1) to determine whether, or not, an analysis of New York's marine policies would be useful; and if so,

(2) to formulate appropriate objectives and goals for an analysis of New York State's marine policies,

(3) to identify other people to add to the Advisory Council,

(4) to formulate a strategy to carry out the analysis, and

(5) to identify key agencies and people who would need to be represented on the working groups of experts who would carry out the analysis.

The ocean, the State's estuaries, the Great Lakes, and the Hudson have played crucial roles in New York's history. Surely New York would be a very different state without them; yet much of the commitment to this heritage has been eroded. The State is neglecting some of our greatest natural resources and we all are the losers for it. The results of years of neglect and abuse of our natural resources and heritage are apparent. Fortunately, New York is equipped with the knowledge and resources not only to protect, but to effectively utilize the wealth of our coastal environments. But it will not come without an effort.

The following facts illustrate the importance of marine and freshwater coastal environments in New York's past, present and future:

- Fisheries play an important role in New York's employment and economy. According to 1984 estimates from the New York State Department of Environmental Conservation, fish and shellfish landings totalled approximately 38.4 million pounds, with a dockside value of $39.6 million.
- The number of fisherman employed on Long Island alone was 9,414 in 1983, with 6,170 registered commercial fishing boats.
- Attracted by New York's vast shoreline, recreational fishermen land catches second in weight only to those of Florida. According to a 1984 survey by the National Marine Fisheries Service, about 700,000 recreational anglers fished in New York's marine waters that year. These individuals accounted for a total of more than 3,000,000 angler-person days each year.

- Recreational fishermen spend at least $250 million annually in pursuit of their sport and this figure excludes purchases of boats, motors and fuel.
- In Raritan Bay, a large oyster industry existed until 1961 when much of the bay was closed to shellfisheries because of bacterial contamination. Figures for 1970 show a negligible harvest; a conservative estimate of harvest gives 20 million pounds in 1904 which at today's prices might bring more than $60 million.
- In 1976, baymen dug 680 thousand bushels of hard clams from Great South Bay worth over $18 million. By 1984, the harvest had dropped to 222 thousand bushels, and the number of licences issued fell by 2,500 over the same 5 year period. Even at this lower level, clams crops had a dockside value of $9.3 million.
- New York has one of the nation's largest waterway systems, and a barge canal system extending for about 800 miles. The St. Lawrence Seaway, opened in 1959, turned New York's Great Lake ports into seaports.
- The Port of New York is one of the largest ports in the U.S. and one of the world's busiest. In terms of value of cargo handled, it is our nation's most important port. In 1983 it handled about 163.0 million metric tons of cargo. To keep the port open, periodic dredging is necessary. Identification of acceptable disposal sites for contaminated materials is becoming increasingly more difficult.
- More people visit New York's beaches each year than visit the beaches of any other state. On a summer holiday, the number of

sunbathers on the 3.4 mile stretch of Coney Island beach alone can be twice the entire population of the State of Alaska, Delaware or any of 6 other states.

- Power plants located on New York's coastal marine waters withdraw more than 8 million gallons of water from the environment every minute. This water and the small organisms it contains is passed through pumps and condensers and finally returned to the environment at temperatures elevated by 10 to 20° F.
- Long Island has only about 0.6% of the Nation's total shoreline, but more than 10% of that part of the total designated by the U.S. Army Corps of Engineers as having "critical erosion problems".
- 100% of all sewage sludge barged to the ocean by the entire U.S. is dumped in the New York Bight Apex. The amount of sewage sludge dumped into the ocean by New York probably will increase, but the dumping area will be moved nearly 100 miles farther seaward.

From all these human activities, the coastal ocean has been used and abused in a multitude of ways.

AN OPPORTUNITY

Probably never in the recent history of the State of New York has there been a greater opportunity than we now have to reshape the roles that the ocean and the Great Lakes could play in New York's future. To seize that opportunity will require imagination, courage, vision and leadership. It also will require an identification of the full range of potential combinations of different uses and a critical assessment of what each would mean to the State--to her environment, to the health of her people and to the health of her economy. Emerging technologies, pressing and persistent waste management problems, increasing demands

for renewable resources--finfish, shellfish and seaweed, increasing demands for non-renewable resources, particularly hard minerals (sand and gravel), increasing demands for recreational activities in the aquatic zone, increasing competition for space along the aquatic edge, concomitant disturbance of shoreline habitats and ecosystems and changes in the federal involvement in port activities...all of these factors and others converge to compel the State to take a new, innovative and longer term look at the role the ocean and the Great Lakes can play in New York's future.

Through proper long-term planning, the opportunities afforded by New York's coastal waters and their living and non-living resources are impressive. Responsible ocean resource development can and should play a prominent role in the State's economic development. If the issue of their management over the longer term is left unattended, at the very least an enormous opportunity shall be lost. In the extreme, the consequences of benign neglect are far more serious.

There never has been a comprehensive analysis of the present and potential uses of New York's coastal waters. Changes in the State's needs and opportunities require that the role of the ocean and the Great Lakes in New York's future be carefully evaluated to ensure that present short- to intermediate-term policies and management practices do not foreclose more desirable long-term options.

It was the unanimous conclusion of the Marine Policy Advisory Group (MARPAG) that there was a clear and pressing need

(1) to take a comprehensive look at present and potential uses of New York's coastal environments,

(2) to take a prospective look at what New York's coastal zone could contribute to the State in the future,

(3) to review present policies to determine whether, or not, they are consistent with New York's long-term goals and objectives for the best mixture of use patterns of her coastal environments--marine and freshwater, and

(4) to formulate modifications to existing policies to ensure that they contribute maximally to the economy and well-being of New York citizens.

MARPAG proposes to undertake to design and guide a comprehensive analysis of major issues affecting New York's coastal environments--marine and freshwater--and to formulate policy guidelines consistent with the major needs and opportunities of the next decade.

The proposed study will take full advantage of all existing and on-going studies and activities related to present and prospective uses of New York's coastal waters. The study will be designed carefully to complement these efforts and to eliminate undesirable redundancy. It will differ from efforts past, present and planned in two important aspects: first, it will take a longer view; and second, it will focus on balancing competing uses to develop policies to ensure that the most desirable mix of uses can be achieved and sustained over the longer term--at least several decades. The proposed study will concentrate on development of flexible strategies which will serve New York well as needs and opportunities change.

The proposed study will be conducted with the assistance of the State University of New York's Marine Sciences Research Center and its

Coastal Ocean Science and Management Alternatives (COSMA) Program. The entire analysis shall consist of several phases. Phase I will consist of a "global" analysis of past, present and prospective uses of New York's coastal environments. Phase I will be conducted by the MARPAG with the assistance of carefully selected experts from academia, government and industry. The results of Phase I will provide a background for more detailed studies of specific issues. The model to be used in carrying out Phase II studies is adapted from that of the National Academy of Science's National Research Council. Detailed analyses of issues would be carried out by Working Groups of experts. Formation of the Working Groups would be the responsibility of MARPAG which also would be responsible for issue selection and definition, and for general oversight and guidance.

ISSUES TO BE ADDRESSED

It was the consensus of the Group that the study should be focussed on a small number of important issues; themes which would unify important interests and concerns.

- Economic analysis of present and future uses--individually and in different combinations--of New York's coastal environments.
- Comprehensive waste disposal management and the aquatic environment in the face of society's changing needs and opportunities and emerging technologies.
- New York's coastal environments in the face of a rising sea.
- Port and Harbor Development.
- Non-renewable resources, particularly hard mineral (sand and gravel) management in the Lower Bay of New York Harbor and on the continental shelf.
- Renewable resources--fisheries and aquaculture.

WASTE MANAGEMENT AND THE AQUATIC ENVIRONMENT

An assessment needs to be made to establish the proper role the ocean and the Great Lakes can and should play in a comprehensive State-wide waste management program. From early days to the present the aquatic environment has been a major receiver of New York's wastes: dredged materials, sewage sludge, municipal waste discharges, cellar dirt, construction debris, and some industrial wastes.

New York has a major and growing problem of what to do with her waste products. The problems are particularly acute in the metropolitan NYC area and on Long Island. Sewers leading into the New York Bight spew out nearly 2.5 billion gallons of wastewater each day. Each year approximately 8 million cubic yards of material dredged from the Port of New York and New Jersey are dumped into the New York Bight. Each day New York City produces over 20,000 tons of solid refuse. The State continues to dispose of a major fraction of her wastes in the ocean, a practice which is unlikely to change. The resulting impacts on the coastal environment range from nearly imperceptible to almost debilitating. The problems are more severe than in other regions of the State because population densities are higher, the volumes of wastes greater, and land less available. The range of alternative solutions is consequently more restricted.

Emerging technologies, changing public attitudes, threats to human health and the environment associated with present waste management practices in the air, in the aquatic environment and on land, the importance of ensuring multiple uses of the State's marine and freshwater environments, all combine to indicate a compelling need for a comprehensive analysis of the range of roles the ocean and the Great

Lakes could play in a comprehensive State-wide waste management program. The public health, environmental, and economic costs and benefits associated with each of these roles needs to be assessed in the context of other alternatives. We must ensure that recurrent short-term problems and practices are consistent with long-term objectives and goals, and that they do not foreclose other options which would enhance the uses of the ocean and the Great Lakes in the future. There is an opportunity side to a large fraction of New York's waste products which has been ignored. We no longer can afford to do that.

NEW YORK'S COASTAL ENVIRONMENTS IN THE FACE OF A RISING SEA

Many predict that as a result of the greenhouse effect, sea level will rise by as much as 30 inches within the next century and perhaps by a few feet within two centuries. Even a comparatively small rise in sea level would significantly affect society's uses of New York's coastal environments. For the millions of people living within 10 miles of New York's marine coastline, retreat is impractical.

There are alternatives to retreat. These alternatives should be considered now along with the uncertainty associated with the predictions of the magnitude of probable sea level rise. New York's non-hazardous solid waste products amount to more than 7.0 million tons per year. Technologies exist, or are developing, to stabilize these materials into blocks suitable for construction of dikes and other protective devices against a rise in sea level. It is an option worth considering.

PORT AND HARBOR DEVELOPMENT

The Port of New York and New Jersey is one the world's greatest ports. The value of the cargo handled by the Port is greater than that of any other port in the nation. Since Adrian Block and Giovanni da Verrazano first sailed into New York Harbor, it has played a prominent role in development of the colonies, the State, the region and indeed the nation and the world. The Port of New York and New Jersey, the Ports of Albany, Buffalo, Oswego, Ogdensburg and Rochester all figure prominently in the economic future of New York State, but there are troubling signs on the horizon. New York's ports require periodic maintenance dredging to keep channels and berthing areas at approved

depths. Port expansion and enhancement would require new work dredging. Dredging is expensive and the material dredged must be disposed of. The unraveling of the social contract between the federal government and the ports for funding of dredging activities poses problems for most U.S. ports. The problem is particularly serious for the Port of New York and New Jersey. The cost of doing business with the Port of New York and New Jersey already is high; additional increases through user fees will further disadvantage the Port relative to its competitors.

Most of the cost of dredging is tied up in disposal--in getting rid of the material. Increasing energy costs and the increasing difficulty of identifying and securing acceptable disposal sites close to the dredging projects cloud the future of New York's major ports. But MARPAG believes there are alternatives; alternatives which not only are environmentally safe but which are preferable to today's accepted practices; alternatives which are economically attractive; and alternatives which can relieve some of the State's other waste disposal problems and which can increase the value of the multiple-use character of the State's waters for future generations.

There are serious, non-technical problems facing the Port which also must be attended to promptly if serious economic perturbations are to be avoided. The issues of concern include changing land use patterns, international economic trends, national transportation infrastructure and policy, union policies and practices, and technological innovation.

THE OCEAN AND HARD MINERALS MANAGEMENT

The metropolitan New York City area has exhausted within an economical distance of the area all readily available terrestrial supplies of sand and gravel for fill and construction aggregate. If any major new construction--such as a new sports complex--is to take place, new resources will have to be identified and exploited. The Lower Bay of New York Harbor has been the world's largest open-pit sand mine. The Continental Shelf off New York and New Jersey also contains vast amounts of sand and gravel which, if judiciously and selectively mined, could be used for centuries without harm to living marine resources or to other uses of the coastal ocean.

Between 1950 and 1975 the Lower Bay was mined for over 116.0 million cubic yards of sand. However, restrictions because of environmental concerns have since stopped all mining. These environmental concerns have been evaluated through scientific studies funded by the New York State Office of General Services and the New York State Sea Grant Institute, but no management plan for responsible exploitation of this valuable resource has been adopted.[1] It should be. The management plan should identify and incorporate other complementary uses of the environment. This plan should include not only the Lower Bay, but the inner continental shelf as well. Submarine mining for sand and gravel can be designed to stimulate fisheries, and to alleviate shore erosion. It also can be combined with a variety of waste disposal strategies to enhance the environment and decrease risk to human health.

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[1] The New York State Office of General Services (OGS) is in the process of formulating a limited development program for sand and gravel mining in the Lower Bay of New York Harbor. MARPAG will involve OGS in its discussions of broader ocean and hard mineral management policies for all State underwater lands.

FISHERY MANAGEMENT

The history of New York fisheries is abysmal. At its peak in 1904 about 268.6 million pounds of marine and anadromous fishes and shellfishes were landed in New York. An additional 5.0 million pounds were landed from the Great Lakes. Together these were worth about $19.7 million when adjusted by the consumer price index. By 1933 the marine harvest had dropped to about 39.9 million pounds and the Great Lakes harvest to one million pounds. Harvests then rose irregularly to a secondary maximum of about 226.4 million in 1962, worth about $11.9 million adjusted by the consumer price index; then fell to a low of less than 40 million pounds by 1970. Harvest has remained below that level, at an average of about 36.0 million pounds ever since. The adjusted price has stayed up fairly well, however, reaching a maximum of $19.1 million in 1976 but dropping to 12.8 million in 1984.

In addition, the recreational harvest has grown, so that in 1984 about 29 million pounds of marine fishes were taken in New York waters. Some shellfishes were also taken but these were not estimated. Thus, the total recreational catch was almost as great as the commercial catch. There is an additional unknown catch from the Great Lakes and other fresh waters.

Thus, it can safely be said that the total catch, commercial and recreational, from New York waters in 1984 was at least 66.0 million pounds, and probably more. At the level of commercial value this catch would be worth at least $25.0 million standard dollars, or about $75.0 million 1984 dollars.

The value used in computing the value of this catch is the price paid to fishermen at dockside. Retail prices are roughly three times landed value. Thus, in 1978 the total catch by commercial and recreational fishermen in New York was worth about $225 million dollars, and this does not take into account the satisfaction and healthful recreation gained by recreational fishermen.

If these fisheries could be rehabilitated, they might produce anywhere from twice to seven times the weight now harvested. The value of this catch can not be estimated exactly, but it is conservatively estimated at at least $500 million retail.

Beyond reestablishment of traditional fisheries to historic levels, substantial opportunities exist to expand New York's commercial fishing and aquaculture industries through diversification. The New York industry has therefore produced mainly fresh seafood products for immediate and local consumption. The development in New York of state-of-the-art seafood processing capability able to meet the growing national demand for a wide variety of pre-packaged, processed seafoods is a critical step in the future growth of the industry. When this new productive capability is linked to the impressive marketing and distribution channels that tie New York to the region, the nation, and the world, the potential for significant expansion of what is increasingly termed New York's "aquatic products" industries is great.


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DUE DATE