



Coastlines

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

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YEAR II SEA GRANT AWARD

The New York State Sea Grant Program entered its second year November 1, 1972, with a substantial increase in funding. The federal grant of \$800,000 is a jump of one-third over the first year. With matching fund support from industry, State agencies such as the Dept. of Environmental Conservation and the Office of Parks and Recreation, private industry, and the consortium of the State University and Cornell, the Program will be able to consolidate its grasp on several problems of the marine environment which have been identified as top priority concerns of the people of New York State.

The decision by the National Sea Grant Office to fund the New York Program at this level is based on an annual "site visit" in September, when program administrators and principal investigators of the research teams explain and justify their proposals to a panel of experts. Total funding for the National Sea Grant Program is allotted by the Congress in annual legislation. This year, although the Senate had demonstrated its appreciation of Sea Grant's achievements with an authorization of \$30 million, the final compromise just before election was at the much lower \$21.2 figure voted by the House, reflecting compliance with the President's drive to keep spending down.

Major components in the program will be a multidisciplinary study of power-plant siting on Lake Ontario; socio-economic, organizational and legal factors in water resource management in New York State, fishery management and development, and advisory services.

Power Plants on Lake Ontario

The power-plant siting studies are an outgrowth of studies carried out during the first year of NYS Sea Grant on thermal pollution in Lake Ontario and on the beneficial uses of waste heat from power generation. The project capitalizes on the knowledge gained and by the addition of sociological, economic, and legal expertise has been expanded in scope to meet exciting new opportunities.

In the past session, the NYS Assembly enacted long-awaited legislation creating the Legislative Commission on Energy Policy for the State of New York and the New York State Board on Electric Generation and the Environment. Sea Grant has been invited to utilize this new legislation to make comparative studies of the siting process as it was and will be carried out. The research team will also study the thermal criteria of NY State in an attempt to introduce the necessary flexibility to permit beneficial use of waste heat from power plants. And, in what may become a series of demonstration projects, the team will be working closely with industries in encouraging them to utilize waste-heated waters. Researchers will also be aiding the public utilities and State agencies to make better use of the lands now held by power companies in the form of corridors, buffer zones, and exclusion areas (about ten percent of the 85-mile coastline between Rochester and Oswego).

The research area leader for the multidisciplinary project, which is expected to continue about three years, is Ronald Stewart, Atmospheric Sciences Research Center, SUNY, Albany. Associated with him will be L. Vaughn Blankenship, Political Science, SUNY, Buffalo; Eugene E. Chermack, Lake Ontario Environmental Lab, SUC, Oswego; Robert Crow, School of Management, SUNY, Buffalo; Ulrich Czapski, Dept. of Atmospheric Science, SUNY, Albany; Robert E. Ford, Sociology, SUNY, Buffalo; S.P. Mathur, Office of Recovery, Recycling, and Reuse, Dept. of Environmental Conservation; Donald McNaught, Biological Sciences, SUNY, Albany; Jon T. Scott, Dept. of Atmospheric Sciences, SUNY, Albany; and Stephan Wilson, Empire State College.

Water Resource Management for Lake Erie

The multidisciplinary study of the Socio-Economic, Organizational and Legal Factors in Water Resource Management in New York State also builds on research carried out during the previous year under Sea Grant auspices. (See page 6.) The research area, led by Robert Ford, Sociology, SUNY, Buffalo, is directly concerned with management of Lake Erie as a resource--recreation, transportation, and waste disposal. Ford and his associate Robert I. Reis, Faculty of Law and Jurispru-

dence, SUNY Buffalo, will provide a legal and administrative overview of coastal zone management of Lake Erie Basin, isolating specific problems and proposing a series of more efficient management schemes. Robert Crow, School of Management, SUNY Buffalo, will develop an econometric model for the Buffalo metropolitan area, to assess costs and benefits of management and mismanagement of Lake Erie resources. He will examine the importance of port-related activities to the area's economy, in particular the public policy options in utilizing port resources to foster economic growth.

Norman Starler, Economics, SUC Fredonia, and his Fredonia colleagues Warren and Ann Fisher, will study economic costs of deterioration in the quality of Lake Erie on income, employment, land values, and public revenues in Chautauqua and Erie Counties from 1950 to 1970.

Paul R. Dommermuth, Sociology, SUC Fredonia, will identify the formal and informal power structure of Erie and Chautauqua Counties. One of the questions he will investigate is how these community leaders establish ecological priorities, given competing interests and limited resources.

Andrew Collver, Sociology, SUNY Stony Brook, will study the related question of opinion leaders and their influence on coastal zone management. His study will provide information on how public opinion can be marshalled to influence local government in behalf of preserving our coastal waters. David Hanselman, SUC Forestry and Environmental Sciences, will deal with a specific way to influence public opinion on environmental questions: the use of tv spot announcements. He will attempt to measure their effectiveness in changing behavior and will design an appropriate tv spot for use by the Sea Grant Program.

Fishery Management and Development

Background work on the history of marine fisheries of New York has been published by J.L. McHugh, Marine Sciences Research Center, SUNY Stony Brook, the research leader for this area. (Marine fisheries of New York State. U.S. Dept. of Commerce, Nat. Mar. Fish. Serv., Fishery Bulletin: Vol. 70, No. 3, 1972, p. 585-610.) Using this paper as a base, Dr. McHugh will develop detailed understanding of historic trends in the fisheries of the State and their causes. During this year he will identify species and stocks of fish and shellfish amenable to management, examine existing mechanisms for interstate cooperation, examine marine fishery policies and programs of the State, examine interactions between commercial and sport fishermen and between domestic and foreign fisheries, and explore the potential for marketing increased seafood production.

On the Great Lakes, T.L. Brown, Natural Resources, Cornell, will investigate the impact of Coho salmon introduction into Lake Ontario by the Dept. of Environmental Conservation on fishermen and communities.

Robert Sweeney, Great Lakes Lab., SUC Buffalo, will evaluate the potential for a fish protein concentrate industry based on Lake Erie trash fish. With associates E. Schrier, Chemistry,

SUNY Binghamton, and M. Tunis, Roswell Park Memorial Institute, Buffalo, he will attempt to develop techniques to remove high mercury levels from the fish tissues, and assess the capability of the New York fleet to support an fpc industry.

Other Funded Research

A demonstration project in wetlands redevelopment will be carried out by Orville Terry, MSRC, SUNY, Stony Brook, in cooperation with the Dept. of Public Works, Suffolk County, and the Nassau County Museum. Keith Kavenagh, Institute for Colonial Studies, SUNY Stony Brook, will study historical aspects of wetlands management on Long Island.

Doyle Eiler, Agricultural Economics, Cornell, will survey marina businesses and users in New York, to determine where more marinas are needed, and to suggest criteria for public involvement in development of marinas. He will be assisted by T.L. Brown, also of Cornell.

Donald R. Coates, Geology, Binghamton, will continue with his associate Marie Morisawa their work on coastal erosion, stabilization, and utilization described in **Coastlines**, Vol. 2, No. 3. A coastal inventory of the Peconics and Gardiner's Bay shorelines of Long Island will be directed by Syed Ali, MSRC, SUNY, Stony Brook. This project continues earlier work by the Marine Sciences Research Center on coastal erosion and beach classification for the Nassau-Suffolk Regional Planning Board. Another geologist, Daniel Brennan, SUC Cortland, will continue mapping of sediments and water quality in the Peconics and Gardiner's Bay area. His work is designed to aid planners on dredging for sand and gravel, and aquaculturists and baymen.

Iver Duedall, MSRC, will continue the project of P.K. Weyl, now on sabbatical, on the development of a management model for western Long Island Sound. Leonard Dworsky, Water Resources and Marine Sciences Center, Cornell, is dealing with interinstitutional management problems on the Great Lakes. A graduate seminar at Cornell under his direction has simulated the problems of a joint Great Lakes Basin management agency for the U.S. and Canada, and he will build on their findings.

John Judd, Coordinator for Great Lakes Research, NYSSGP, SUC Oswego, will continue his work on beneficial uses for the aquatic weed *Cladophora* as a mosquito larvicide. Robert LaLonde, Chemistry, SUC Forestry, Syracuse, is associate investigator. Also working on *Cladophora* is Bengt Leopold, Empire State Paper Research Institute, SUC Forestry, continuing to investigate whether paper can be economically made from this weed.

Orville Terry, MSRC, will devote some of his time to a pilot project in lobster culture. He will build on his survey of aquaculture activities in North America carried out this year. On page 4 is a lengthier description of another project in aquaculture, recycling wastes from shellfish processing.

SEA GRANT LEGISLATIVE INTERNSHIPS

Beginning with the spring semester 1973, Sea Grant will support four students to work on projects of interest to the Sea Grant Program and the NYS Legislature. A list of subject areas from which students may choose, and all other relevant details, are available in the Graduate Dean's office on campus. Financial aid is in the form of graduate assistantships for the spring semester with full stipend for summer months. A modest amount of support funds is also available. The report is due at the end of September.

The student works under joint supervision of the Assembly Scientific Staff and the student's professor. The subject of his report must be part of his degree program also. Participating universities are the campuses of the Sea Grant system, SUNY and Cornell, which have graduate programs.

Proposals should be sent to Dr. Seville Chapman, Director, NYS Assembly Scientific Staff, Assembly Chambers, Capitol Bldg., Albany, N.Y. 12224, by January 3. Work by the selected students will begin about January 15.

The Assembly Scientific Staff was established in February 1971 by Speaker Perry B. Duryea, Jr., to bring scientific expertise and perspective to the legislative process. The Staff at present numbers five, including the Director, Dr. Seville Chapman, and Principal Scientist Dr. Glenn Stevenson. Through the Standing Committees of the Legislature and their chairmen in such fields as conservation, health, housing, and transportation, a priority system is established. The key problems are to synthesize technical information of legislative interest and translate this synthesis into everyday language so that the members of the Assembly can make enlightened decisions.

Sea Grant is contributing to the new internship program, whose other stipends are supported through the National Science Foundation, by providing funds in support of research on marine topics. The first such Sea Grant report was a study of oil spill contingency plans for Long Island Sound. It was prepared by Seth Low, M.S. candidate in the Marine Environmental Studies Program at SUNY Stony Brook, for the newly formed legislative committee on the Sound, the Bi-State Committee on Coastal Marine Resources.

SEA GRANT FILM READY

A twenty-minute sound and color film explaining what Sea Grant is and how it will benefit the people of New York State is now available for adult presentation through the Advisory Service offices at Stony Brook, Brockport, and Cornell, and the Program office at Albany. For school presentation write Film Library, Roberts Hall, Cornell Univ., Ithaca, N.Y. 14850.

GREENPORT CONFERENCE

A Conference on Culture of Marine Invertebrates held at Greenport, L.I., October 5-7 was attended by over 150 scientists from the United States and Canada. The purpose of the conference, sponsored by the Middle Atlantic Natural Science Council, the Institute of Marine Science of Adelphi University, the Marine Science Center of Long Island University, Suffolk County Community College, and the Marine Sciences Research Center at SUNY Stony Brook, was to provide an opportunity for exchange of information among specialists.

Discussion ranged from closed-system culture methods, marine bacteria, and feeding with beef-heart extract, to culturing individual cash crops such as lobsters, scallops, and clams, and other species of ecological interest such as bryozoa and copepods.

Dr. Harold L. Goodwin, Deputy Director, National Sea Grant Program, the dinner speaker, spoke on the bright future for farming the sea, but cautioned that mariculture is not here yet. He emphasized that much work needs to be done first, specifically that there is a real need for pilot projects. The Shelter Island Oyster Company at Greenport is cooperating with Suffolk County CC and the MSRC in pilot projects at this time.

Dr. Walter L. Smith, Professor of Marine Science at Suffolk County CC and program chairman for the conference, has arranged for publication of the proceedings by the Plenum Publishing Co., 227 W. 17th St., N.Y. 10011.

CLAMMERS BOOSTED BY SEA GRANT

Sea Grant attempted to protect the interests of New York's commercial shellfish fishermen during the "red tide" scare in late September. At the height of public interest and concern with shellfish poisoning, numerous radio stations and news papers used a Sea Grant news release indicating that New York shellfish were unaffected by the paralytic shellfish poisoning that had closed beds on most of New England's coastal areas.

The news release encouraged consumers to feel confident in the safety monitoring systems of the NYS Dept. of Environmental Conservation and county and State health departments. It informed consumers of the reasons for the shellfish poisoning problem and encouraged them to continue to buy New York shellfish. Emphasizing that clams add over \$9 million to New York's economy, the news release used the high interest in shellfish to re-emphasize to leaders in the State the important economic role of these sea products.

The ability to respond quickly to emergency needs at local and state levels should be a hallmark of Sea Grant efforts, says Dr. Bruce Wilkins, Advisory Service program leader.

RECYCLING SHELLFISH WASTES

The clam "belly" is a waste product of the surf-clam processing industry on Long Island. It has high nutritive value and good flavor, but is presently discarded because of its sand content and undesirable color. Dr. Robert Shallenberger, a food scientist at the NYS Agricultural Experiment Station in Geneva and Professor of Biochemistry at Cornell, is investigating economically feasible techniques for purifying an extract from the "belly" to remove its undesirable dark color and reclaim a profitable and nutritive food for use as a clam cocktail or for fortifying fruit and vegetable juices. The research is being supported by the NYS Sea Grant Program.

The clam belly, which is actually the entire digestive tract, may have other valuable uses. Dr. Shallenberger will examine the enzymes of this digestive system. One enzyme must be a I-3 gluconase, able to break down the I-3 alpha or beta biochemical linkage of the polysaccharide glucan in marine algae digested by the surf clam. Ordinary enzymes possessed by land animals do not usually break down I-3 linkage. An immediate use for the I-3 gluconase, therefore, would be to apply it to algae directly, for example to kelp or the single-celled microscopic algae *Clorella*, to break it down into digestible monosaccharides for animal feed or even human consumption.

Other similar enzymes may be present in the digestive tract of the surf clam, enzymes able to break down the almost unmanageable wastes of the food-processing industry (for example potato peels), and the lignins in paper-processing.

Additional applications of food science technology to the oyster and clam industry are in the field of culture of oyster and hard clams. The larvae of these bivalves are being fed microscopic algae, their natural food, which is expensive to grow. The seaweed *Codium* is brought up with the dredges for oysters and is just thrown away as a nuisance. Using existing chemical technology it may be possible to break *Codium* down into small particulate or dissolved form which can be fed to the larvae. If the high calcium requirements of the bivalves cannot be met using *Codium*, possibly oyster shells may be used to remedy a deficiency.

MEETING FOR MARINA OWNERS

Increased profits for marina operators and improved services for boaters are the twin areas of a Sea Grant Advisory Service meeting, Tuesday, December 12, from 1:30 to 4:30 pm in Watertown. Marina and other boat business operators from eastern Lake Ontario and the St. Lawrence River will hear speakers representing industry, government, and educational groups.

Co-sponsored by Cooperative Extension Associations in St. Lawrence, Jefferson, and Oswego Counties, the meeting will take place in the Extension conference center, Stateway shopping plaza just off the Arsenal Street exit of Route 81.

Speakers will discuss sources of trained workers, how to increase profits, and new regulations for boaters. A major feature of the meeting will be an opportunity for marina operators to point out how Sea Grant research and teaching can best aid them.

Regulatory agency representatives will be present from the U.S. Coast Guard, Office of Parks and Recreation, and Dept. of Environmental Conservation.

All persons who would like to advance the boating interests in the eastern Great Lakes region are cordially invited. Similar meetings are planned in mid-winter for other locations upstate and on Long Island.

INDEX TO SEA GRANT PUBLICATIONS

The first Sea Grant Publications Index, in three volumes covering 1968-71, is now in print. Copies are being distributed from the Program Office to Sea Grantees of the current year. Others may request copies from: *National Sea Grant Depository, Univ. of Rhode Island, Pell Marine Science Library, Narragansett, R.I. 02882*. All publications which have originated through Sea Grant funding, including newsletters, are indexed by subject (KWIC), author, and institution. The publications and newsletters are published separately, and should be requested specifically. It is also possible for individual institutions to obtain separate publications and newsletter indexes of the entries for their institutions only.

JOBS OPEN WITH ADVISORY SERVICE

Two positions are open in the rapidly developing Sea Grant Advisory Service: a regional marine planner at Brockport, and a youth educator in New York City. The marine planner will work with regional planning groups and community leaders in the Great Lakes region. He will also prepare educational material for use in radio, tv, and newspapers. A masters degree in planning or extensive experience in marine sciences is preferred.

The youth educator should have a B.S. in biology, nature education, or marine biology, and two years experience in youth education, the public school system, Cooperative Extension, an antipoverty neighborhood program or other youth-related organization. He will also prepare educational materials for mass media, will work on educational programs for youth, especially those from disadvantaged backgrounds.

Interested persons should contact: Sandra S. Clarkson, personnel specialist, 212 Roberts Hall, Cornell Univ., Ithaca, N.Y. 14850.

NEW SEA GRANT CABINET MEMBER

Dr. Orville W. Terry, Research Associate at the Marine Sciences Research Center, has assumed the duties of Coordinator for Marine Research, replacing Dr. J.L. McHugh, who will be research area leader for the new fishery management and development research projects. Dr. Terry will consult with prospective Sea Grant researchers, maintain contact with individual investigators in the current program, and assist in overall program development. He will continue his research in aquaculture and wetlands. (Tel. 246-3366)

THE COASTAL ZONE

Recovering the Waterfront

On October 18-19 William Tyson, Executive Secretary of the St. Lawrence-Eastern Ontario Commission and member of the Sea Grant Great Lakes Advisory Council, held meetings at Canton and Watertown entitled "Recovering the Waterfront." The review of the Natural Resources Study of the NYS College of Forestry and Environmental Science in cooperation with the NYS Office of Planning Services for the St. Lawrence-Eastern Ontario Commission covered the following topics: registration, soils, and planning for the region; shoreline hydrology, natural vegetation, and fisheries resources of the region; ecology, wildlife, and people; environmental engineering considerations; and natural resource considerations in planning for the region. Presentations were by members of the faculty of the College of Forestry and Environmental Science.

Regional Planning in the Coastal Zone

A meeting of the Sea Grant Program Director, NYS, with regional planning board directors and representatives from several counties including all the regional and local interests in the coastal zone of New York State was held October 18 in Syracuse. The purpose of the meeting was to discuss ways in which the New York State Sea Grant Program can work with regional planning boards in charting future development of New York's coastal region.

Participants were F.J.A. Aufschlager, Black River-St. Lawrence River; Lee F. Koppelman, Nassau-Suffolk, A.P. Fried, Rockland County; J.R. Luensman, Southern Tier West, P.Q. Eschweiler, Westchester; Leo J. Nowak, Erie-Niagara; Stuart O. Denslow, Genesee-Finger Lakes; Robert Morris, Central New York, and Edward Robin, N.Y. City Planning Commission.

Coastal Zone Management Act

The Coastal Zone Management Act has been passed by the Congress. Copies of the Act are available from the Sea Grant Office in Albany.

FISHERMEN REACT

*by Roger Allbee, Regional Marine Specialist
Sea Grant Advisory Service*

In the last issue of **Coastlines**, in the article entitled "Meeting on Bay Scallops," it was stated that high scallop prices might attract more people into harvesting with overfishing of the resource as a result. Even though the logic behind "common property" resources tells us that overfishing could possibly take place, the statement is an oversimplification as there are many factors interacting, both natural and man-made, that can affect such resources.

From the scientific community, fishermen need information on the maximum sustainable yield for a particular resource, or the point of no return. Herein lies a challenge to the biologists, for in the absence of this information it will be difficult to formulate a management program to assist the fishermen.

FARM BUREAU MEMBERSHIP FOR BAYMEN

by Roger Allbee, Regional Marine Specialist

Like the land farmer who harvests a crop grown under nature's guiding influence, baymen are farmers of the sea. Though their crop is covered by water, and unowned by any one shellfisherman until harvested, it is still considered a farm product.

The Farm Bureau is now actively recruiting these farmers of the sea into the organization whose privileges were heretofore reserved to land farmers. According to Mr. Ralph Hemingway, Regional Organization Director of the NYS Farm Bureau, this will give the baymen the opportunity to have their interests represented by a strong lobbying organization. In addition to lobbying power, the Farm Bureau can assist in obtaining federal grants, do marketing analysis for members, and assist in promoting commodities. Such assistance should help to vocalize the interests of these shellfishermen.

for further information write:

*New York Farm Bureau, Box 186, New Lebanon, N. Y. 12125
tel: (518) 795-2771*

RECENT MSRC TECHNICAL REPORTS

- No. 16. **Hydrographic Study of the Shelf and Slope Waters of New York Bight.** Malcolm J. Bowman and Peter K. Weyl. August 1972. 46 p.
- No. 17. **Movement and Quality of Long Island Sound Waters, 1971.** C.D. Hardy. November 1972. 68 p.

(Technical Reports are available from the Marine Sciences Research Center, SUNY, Stony Brook, N.Y. 11790, at no cost to NYS agencies and SUNY campus libraries and depts. A \$1.50 per copy handling charge is required from all others except those on an exchange basis.)

WATER QUALITY LAW AND ENFORCEMENT

The following summary of a Year I Sea Grant research project, "An Analysis of Water Pollution Enforcement in the Western New York Region," was written for Coastlines by Robert A. Ford, Sociology Dept., SUNY Buffalo.

Water of adequate quality is an increasingly scarce commodity in contemporary industrial society. Water pollution no longer merely offends aesthetically, but threatens collapse to the entire ecosystem upon which urban man is delicately balanced. To a considerable extent water quality is no longer a purely "technological problem." Modern science has been relatively successful in mastering the chemistry and engineering of pollution control.

Unhappily our record of employment of this technology has not been quite as promising. Difficulties have been encountered in motivating individuals, corporations, and municipalities to take full advantages of existing capabilities. Nowhere have such motivational difficulties been more evident or perplexing than in legislating and enforcing water quality standards.

There have been several recent and excellent analyses of the problems and processes critical to an understanding of the genesis of water quality legislation. However, to know the law, to comprehend the intricacies of the legislative process, is to grasp but a portion of the legal picture. As extensive social science research into many diverse settings of law and enforcement has well documented, the dynamics of the daily administration of a law--the daily enforcement process--often carries statutes in directions never contemplated by those initially framing such legislation. There are, however, few if any studies of the changes wrought in "water law" through such administrative-enforcement processes.

Realizing this dearth of materials on this topic, we initiated research into administrative processes in water quality control this past fall under the auspices of NYS Sea Grant. An interdisciplinary team of lawyers and sociologists was assembled to outline the patterns of implementation of "water law" within a particular watershed. Our first effort was to establish a legal baseline, a compendium of all the applicable water quality statutes; second, through standard social science research techniques, we gained an overview of the actual enforcement processes. We then contrasted the legislative intent with the actual modus operandi in the watershed. Our attention to this contrast was rewarded. We encountered considerable divergence between the spirit, the letter of the law, and actual patterns of administration.

First and perhaps most striking is the contrast between the actual locus of enforcement actions and what would be an-

anticipated from a review of the relevant laws. The most active enforcement agent in this region, for instance, was one that was rarely specified legally--the local health departments. Second to the health departments in active decision-making was the State's regional office of the Dept. of Environmental Conservation. The central offices of ENCON and the federal Environmental Protection Agency maintained an overall low profile in administration of anti-pollution statutes. While press notices and broad policy statements were more likely than not to have originated in Albany and Washington, the daily decision-making, the vast majority of real administration, occurred at the local level. There is a consistent pattern in administration of water law, at least in the region under study, that appears rather paradoxical. The greater the authority provided for by statute often the less the participation in decision-making and in actual enforcement efforts. There appears to be an inverse relation between authority and enforcement operations.

Directly related to this decentralization process is a general tendency toward avoidance of mandated authority at all enforcement levels. It was most fascinating to observe generally how narrowly each agency was inclined to interpret its legislative mandate, how consistently it attempted to minimize its enforcement potential. This stands in obvious contrast to a more usual tendency of government bureaucracies to expand the scope of their authority often beyond the intentions of their statutory mandate. Several immediate and extreme examples of this process can be found in the case of the Atomic Energy Commission and the Corps of Engineers. Both agencies had to be forced by the courts to assume responsibility for pollution control in power plants in the case of the AEC, and in questions of water quality of discharges in the case of the Corps. In general the agencies under study attempted to assume as limited a mandate as possible.

This denial of authority has had another aspect. On more clearcut issues, where the agency's responsibility was unmistakable, there was a tendency to argue that such responsibility was really more appropriate to another agency, usually a lower echelon agency. Often such shifts in authority were resisted in the receiving agency. In one case analyzed in detail, enforcement in a particularly critical area of water quality management was almost completely stymied for a few months while interagency differences were mediated. Overlapping authority also often resulted in a situation where no agency would handle that particular difficulty, claiming such matters to be the domain of yet another agency. Enforcement of water quality statutes was obviously not a popular pastime for the varied bureaucracies involved.

As also can be gleaned from the previous remarks, there were serious problems of coordination in the present management scheme for water resources. Generalized planning was

almost nonexistent. Enforcement efforts were usually sporadic, resulting usually from a series of public complaints. Pollution questions were dealt with largely on a plant by plant basis, on municipality by municipality level. Little attention has been devoted to overall implications of the total outputs of these individual enforcement efforts. The attempt to legally police our water resources seems to be characterized by little forethought or overall planning. Too often such attempts have assumed a crisis by crisis dimension.

The quality or style of enforcement also seems to vary considerably from that conceptualized in the enabling statutes. The legislative mandates relating to water quality are fairly consistent with the patterning in other legislation. Certain minimum standards of legally permissible behaviors are established. Penalties for transgressing the standards are defined. The courts are available to the agencies for recourse. The administrative procedures involved are patterned to a large extent after the adversary processes of the criminal law. Yet, the actual patterns of enforcement often vary considerably from the legislative intent. First, and perhaps most significant, the entire process is far more reminiscent of negotiations or arbitration than of enforcement. In many situations the water quality standards prescribed by law are treated more as an initial bargaining statement or a goal than as legal reality to be specifically achieved. The legal standards are usually proposed by the agency involved, the offending corporation or municipality in many cases counters with alternative solutions or set of standards, and a complex bargaining series often results. Of course, the extent of such bargaining varies from situation to situation.

The courts are rarely employed in the enforcement process in this area, despite extensive violations of the letter of the law. Penalties for violations are rare, and generally occur only in extreme circumstances, with the result of public pressures or failure of the offender to negotiate in good faith. Success in enforcement seems more often measured in achieving some momentum toward the legally defined standards than in meeting these legally defined minimums. "Jawboning" seemed a far more popular vehicle of attaining compliance than court action.

What appears to have emerged in water pollution enforcement is a largely administrative enterprise whose efforts are directed more to negotiation than enforcement, and to a passive as opposed to an activist stance. The laws on the books often have been considerably transformed through the realities of enforcement.

There are, certainly, several other interesting areas of divergence between the law as written and the law as practiced. In papers now in preparation and in the first year Sea Grant report, the topics treated here are substantiated, and the critical question of why such divergences have occurred will be treated in detail.

FIFTH NATIONAL SEA GRANT CONFERENCE

The annual meeting of the Association of Sea Grant Program Institutions was held at Houston, Texas, October 10-12, with Texas A&M Sea Grant College as host. Conference topics were: deepwater terminals--perspectives on need, environmental considerations, engineering and economics; and national marine programs. At the business meeting the Association elected the new president, Robert A. Ragotzkie, Univ. of Wisconsin, and the incoming president for the following year, William Gaither, Univ. of Delaware. Council for the Association members are Stanley Murphy, Univ. of Washington, William Gaither, Jack Van Lopik, Louisiana State Univ., Donald Squires, SUNY, Peter Dehlinger, Univ. of Conn.

The 1973 meeting will be held at the Univ. of Delaware. The Program Committee for the 1973 meeting is: William Gaither, Gregory Hedden, Univ. of Wisconsin, Leatha Miloy, Texas A&M, Stanley Murphy, Niels Rorholm, Univ. of Rhode Island, and Donald Squires. We anticipate substantial participation in the 1973 program by New York State Sea Grantees.

Among the several Association committees is the Standing Committee on Advisory Services, on which Bruce Wilkins, NYSSGP Advisory Service program leader, will serve. The National Sea Grant Award presented annually by the Association went to Dr. Athelstan Spilhaus, father of the Sea Grant College idea.

A joint meeting was held with the Council of Sea Grant Program Directors, of which Donald Squires is Vice Chairman. The Council also met October 24-25 in Washington with the National Sea Grant Panel.

CORRESPONDENCE COURSE IN MARITIME LAW

The SUNY Maritime College is offering a correspondence study course in maritime law, successful completion of which will earn a student four undergraduate college credits.

Applicants may enroll at any time of the year and take 12 months to complete the course. Heading the course is Capt. John C. Hart, admiralty law lecturer at the college. Further information may be obtained from the Office of Continuing Education, SUNY Maritime College, Ft. Schuyler, Bronx, N.Y. 10465.

MAPS OF LONG ISLAND WETLANDS

In 1969 the wetlands of New York State were mapped from aerial photographs as part of the Land Use and Natural Resources Inventory (LUNAR) project. A series of overlays was prepared to fit the standard 1 : 24,000 Coast and Geodetic Survey topographic maps. When the overlay is placed over its corresponding topographic map, the wetlands appear as colored areas and are readily identifiable.

Communities or planning agencies may find the overlays valuable as a means of identifying destruction or utilization of their local wetlands which has occurred since 1969. The overlays for Long Island are available on a loan basis through the Sea Grant Advisory Service, SUNY, Stony Brook, (telephone 246-7777) to communities and planning groups.

NYS Sea Grant Program Office
State University at Albany
99 Washington Avenue
Albany, N.Y. 12210
Tel. (518) 474-5787

Sea Grant Advisory Service
Fernow Hall
Cornell University
Ithaca, N.Y. 14850
Tel. (607) 256-2162

Sea Grant Advisory Service
251 Hartwell Hall
SUNY/Brockport
Brockport, N.Y. 14420
Tel. (716) 395-2638

Sea Grant Advisory Service
Marine Sciences Research Center
SUNY/Stony Brook
Stony Brook, N.Y. 11790
Tel. (516) 246-7777

SEA GRANT DISPLAY

If you could use a display explaining Sea Grant, take hope; one will be available February 1, 1973. The display is designed to be adaptable to a variety of situations including boat shows, meetings of marine businesses, planning boards, environmental management councils, and county fairs.

A short taped presentation is programmed to lights, highlighting visual cues. The seven foot by seven exhibit, being developed by the Dept. of Communication Arts in the NYS College of Agriculture and Life Sciences, will be available from Sea Grant Advisory Service offices at Brockport and Stony Brook. It will weigh over 200 lbs. but will fit within a station wagon. A detailed description of the exhibit will be sent with the February **Coastlines**.

COASTLINES, published monthly, is available free of charge on written request to the editor.

COASTLINES

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