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## ANNUAL REPORT OF ACCOMPLISHMENTS AND ACTIVITIES

New York Sea Grant Extension Program

January - December 1981

### Preface

This document summarizes educational program activities and accomplishments of the New York Sea Grant Extension Program in coastal planning and development, coastal engineering and design, recreation and tourism, commercial fishing, seafood processing and marketing, consumer fish use and youth education. It is not a complete compendium since it is neither possible nor desirable to fully describe the more than 650 meetings and more than 80,000 audience contacts made during 1981. Rather, selected activities and accomplishments are included to indicate the nature of program directions and primary benefits. Detailed background information and situational analysis for the major program areas are not included. These may be found in the 1982 Situation Statement and Program Plan. Each of the seven major program areas plus campus-based support and program leadership is described briefly and selected events and outcomes listed. Example anecdotes are included in each section to provide insight to more complex or longer term program efforts.

### Introduction

The role of New York's Sea Grant Extension Program is to carry out educational efforts that help coastal residents, decision makers and resource users resolve current and projected problems associated with the development and conservation of coastal resources. Thus, our mission is to promote wise coastal resource use through education. To carry out that mission we must be--and are--strongly people oriented. More than 100 coastal residents directly assist in the formulation and conduct of our efforts through ten formal program advisory committees. It is difficult to capture the dimension of people involvement in an annual report. Also, individual acknowledgments of satisfaction, accomplishment and direct benefits received by program participants tend to be obscured by synopsis. We have tried to retain the human dimension in our accounts of program efforts to the extent possible.

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## PROGRAM PERSPECTIVE

### Background

The National Sea Grant mission to enhance appropriate use of our marine and Great Lakes coastal resources is carried out in New York by the New York Sea Grant Institute. The advisory service effort called for in Sea Grant enabling legislation is conducted in New York through Cooperative Extension; staff carrying forth that work are New York Cooperative Extension employees.

Eighty-five percent (15½ million) of this State's residents live in the 28 counties bordering the Great Lakes, marine coastlines and tidal waterways.

Only in New York are significant coasts present on both the Great Lakes and the Atlantic Ocean (600 and 1800 miles respectively). The problems and potentials along these valuable coastlines - where people live, work and play--are many and diverse.

### Our Role

The role of the Sea Grant Extension Program in New York is to carry out educational efforts that will help coastal residents, users and decision makers resolve current and projected problems, while developing and conserving coastal resources. To carry out this role the Extension Program:

- Transfers knowledge to persons who can use it to solve coastal problems.
- Stimulates appropriate persons to apply this knowledge to solving problems.
- Stimulates researchers to generate knowledge needed to solve coastal problems.

These roles are carried out by:

- Identifying problem-solving educational programs and activities with: commercial fishermen, marine recreation industries, seafood processors and handlers, consumers of marine foods, marine mining industries, coastal zone decision makers, coastal property owners, marine recreationists, urban minority youth, and others.
- Maintaining and further developing working relationships with other agencies and groups so resources are used more efficiently and programs are implemented more effectively.
- Assisting in developing the directions of future Sea Grant research efforts so they are in accord with needs of the coastal users and the welfare of society.
- Increasing the proficiency of the Extension Program staff to execute programs relevant to the needs of coastal users.

### Staffing

To carry out these tasks, there were 20 professional positions in the Sea Grant Extension Program as of June 1982 supported in full or part by Sea Grant funds. These include Specialists at: Extension offices in New York City, East Aurora, Fredonia, Plainview and New City; State University campuses at Stony Brook, Brockport, Potsdam and Oswego; and, the Cornell University Laboratory at Riverhead. Located in Ithaca are a Program Coordinator, Associate Director of the Sea Grant Institute, Media Specialist, marine economist (30%), and a recreation researcher (1/3 Extension time). An additional position in Nutritional Sciences at Cornell supports education efforts in seafood nutrition. The second Program Coordinator is located at the Riverhead office. Campus-based positions, one in shellfish biology at the State University at Stony Brook; and, the other in Great Lakes fisheries management at the State University at Oswego, provide competencies in the areas.



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## COASTAL PLANNING AND DEVELOPMENT

While the NYS Coastal Management Program continued to be debated in the State's Legislature, Sea Grant educational programmings dealing with coastal planning and development continued with a focus upon resolving community issues. This year our efforts have been directed toward building the capacity of local governments and communities to deal with coastal issues confronting them. In addition to this, specific educational programming to raise awareness and understanding of these community issues have been presented to coastal residents through media efforts and meetings.

### 1. Building Local Government Decision Making Capacity

In New York City, Sea Grant is often viewed as a resource support base for city planners and community decision makers. The Parks Department consulted with Sea Grant to learn ways to plan for the future of the World's Fair Marina located in Queens, as well as developing a continuous park along Manhattan's West Side. Another department, NYC Ports and Terminals, turned to Sea Grant to learn of waterfront development opportunities along a one-half mile area of Brooklyn. Although implementation of these plans is sometimes a lengthy process, technical information provided by Sea Grant in these instances will help to insure the best possible choices will be made in developing sites which meet both community and business development needs.

The history of fishery closures and health advisories based on chemical contamination of Lake Ontario assures that toxic waste issues are of high concern for area residents. When a state proposal to construct a major chemical treatment plant along Lake Ontario was released, interest and concern ran high. The government of Cayuga County, the potential site for this plant, wished the response of their agencies and citizenry to be informed. Toward that end, Sea Grant working with the County's Environmental Management Council and Cornell University's Community Resource Development Program, sponsored a six-session Toxic Waste Management Course to establish the context in which the state's proposal is being made. Thirty persons participated, many of whom subsequently used the information gained in formally responding to this proposal.

Oil spills are a fact of life for residents of the St. Lawrence Valley and many other major coastal transportation routes. Despite the availability of high-quality information bulletins on oil spill contingency **planning**, most individuals and communities in this region had not taken protective measures. What seemed to be lacking were local examples of "real life" applications of the contingency measures. To demonstrate this need, Sea Grant initiated workshops, meetings and mailings to raise awareness. Now the Coast Guard and St. Lawrence County Emergency Services Coordinator are developing an oil spill warning system for riverfront residents. Additional to this, warning systems and emergency protective devices were initiated by the Towns of Hammond and Lisbon for the benefit of residents. A follow-up telephone survey indicated that at least two-thirds of the 31 participants in a self-help workshop are adopting some protective measures. It is hoped that these efforts by "local folk" will stir other communities and individuals to examine their own needs and respond as effectively.

Along the Hudson River, communities are often puzzled over ways to convert abandoned industrial waterfront sites into productive resources for the use and enjoyment of area residents. The Village of Piermont felt this kind of need when a financially troubled, major industry which occupies waterfront land sold property to the village. County and village officials turned to Sea Grant to learn about redevelopment options as well



as necessary applications and permits to be completed for more productive use of the site. With Sea Grant's information and technical expertise, this community acquired the site and is now in the process of planning for developing it into commercial and sport angler fishing facilities as well as waterfront park land. Similarly, the Nassau Shore's Civic Association on Long Island turned to Sea Grant to learn alternatives for improving park space it had acquired through similar means along Great South Bay. In this case, the Association learned of ways to turn a vacant parcel of land into a park with limited funds.

The technical assistance which Sea Grant can bring to local governments and organizations often bears on a wide variety of coastal issues. The Town of Greece Supervisor was assisted in reviewing a management plan for the proposed town take over of Braddocks Bay State Park. Information on coastal processes was provided to the Orleans County Industrial Development Agency for use in reviewing a proposal to establish a tractor-trailer barge facility within the region. Along the St. Lawrence River, an area environmental group was assisted in developing a major conference at which Sea Grant conducted sessions on group organization skills attended by over 75 persons.

## 2. Coastal Issue Awareness

Public awareness of coastal issues is often lacking, sometimes causing uninformed community decision making. To counter this, Sea Grant seeks to play an important role in focusing community attention on emerging issues, identifying ways in which groups and individuals can participate in community planning and decision making. Activities to do this range from a general overview of Lake Erie issues for a local rotary club, to organizing a boat tour for 10 members of the Irondequoit Bay Technical Planning Committee who had not previously seen the object of their concern from the water. Similarly, a shoreline tour of Monroe County was conducted for the Monroe County Environmental Manager and Environmental Analyst. Sea Grant staff typically have the most integrated understanding of the coast as well as associated issues concerning area residents, so it is natural that we would actively seek to share that understanding to improve decision making by others. In New York City, awareness of the East River Corridor was raised by an exhibit focusing on waterfront redevelopment and public access opportunities coordinated by Sea Grant and attended by over 500 people.

We strive to have coastal issues appear prominently in local media. For instance, in New York City Sea Grant participated in the production of a half-hour cable T.V. production on the New York City Waterfront which was aired to an audience of approximately 22,000 viewers. Along the Great Lakes, we regularly participate in programming on at least eight regional radio stations, two T.V. stations and have contributed to at least 25 area newspapers.

Even more satisfying than Sea Grant produced information being actively used in local media, is when these outlets begin to cover coastal issues of their own accord. For example, Rochester Sunday paper ran an eight-part series entitled, "Lake Ontario - The Forgotten Lake," an idea first provided to their editorial staff by Sea Grant. The Parks and Recreation Magazine, printed an article on property stewardship originally authored as an information bulletin by a Sea Grant specialist. The intended end result of initiatives like this is that of sparking community leaders to examine existing conditions against potential opportunities. This is precisely what happened when the Deputy Mayor of the City of Greenport took copies of Coastlines to a community meeting and subsequently stimulated others to begin thinking about and planning for the waterfront of that community.



3. Example Anecdote

A key ingredient which Sea Grant can provide is a mechanism for the exchange of interests and information between concerned community leaders. In the St. Lawrence River Valley, a complex international community, several such approaches had been used. Largely due to the impetus provided by Sea Grant staff, a St. Lawrence Study Group of Canadian and American researchers was formed. The group quickly recognized that public education was an important key for resolving issues and dilemmas. Activities included a conference on St. Lawrence Seaway Commerce which was attended by over 50 individuals. Additional activities included a bus tour for 40 persons to illustrate current Valley issues and a major international conference on shoreline management attended by 80. Sea Grant provided organizational and technical assistance for each of these programs to insure interested involvement by both Canadian and American resource agency representatives. Increased exchange of information across the border and collaboration on research priorities are already evident. The St. Lawrence Valley Council, another international group organized with major assistance from Sea Grant, continued to function by hosting educational programs on topics such as acid rain and the future of agricultural industry in the Valley.



## COASTAL ENGINEERING AND DESIGN

As New York's coastal erosion hazards legislation is implemented, communities will have the choice of developing local erosion ordinances or ceding that responsibility to state government. Most local governments do not have the expertise nor experience base in erosion of shoreland to effectively address this need. We have directed a major portion of our erosion educational programming to actively involve local governmental units in the hope of raising their awareness of and capability for dealing with coastal processes issues in the future.

### 1. Improving Local Government Capabilities

One of the best ways to insure local agency involvement in an issue is to have area residents begin to view it as a source of assistance on specific issues. Toward that end, county soil conservation district personnel from four counties were directly involved in conducting erosion mitigation educational programs sponsored by Sea Grant. This has provided technical expertise in soils which we did not have within our staff and local residents are now increasingly directing their erosion-related requests to district staff. In a related effort, 50 members of the Empire Chapter of the Soil Conservation Association - many of whom are county employees - were provided a lecture/tour on dune stabilization measures as a Sea Grant sponsored in-service training session. In a similar initiative on Long Island, seminars on coastal processes and erosion control were given to 50 supervisors and over 100 personnel of the Nassau County Parks Department. As a result of these meetings, the Parks Department has established a beach grass nursery and has begun working with high school students on a beach monitoring project. In this case, Sea Grant shared successes of similar initiatives elsewhere on Long Island.

Not surprisingly, local governments are most interested in coastal processes when these are directly damaging valuable public property. Site-specific problems provide a "teachable moment" for describing broader issues and needs. Requests of Sea Grant are frequent because few qualified coastal engineers exist within the state and many problems do not require an engineered solution. For example, Monroe County Park Department sought to learn how to repair an existing bluff stabilization project at minimal cost. The Irondequoit Bay Technical Planning Committee was assisted in drafting an erosion and sedimentation control plan. The Town of Wilson was provided a synopsis of causes of sedimentation problems in the Twelve Mile Creek and potential mitigation measures. Sea Grant and representatives of the Marine Science Research Center were contacted by the Suffolk County Executive to provide information on erosion control at West Hampton Beach. This information was subsequently used by the County Executive working with other public officials in reaching a decision on a \$47,000,000 project. In these and other examples, local governments' staff learned of available erosion management resources and will be in a better position to respond to these needs in the future.

### 2. Aiding Individuals to Help Themselves

A common stereotype of shoreline property ownership is a fancy second home owned by a wealthy individual. And yet, a surprising amount of coastal property is either relatively low in value or being used for permanent residences or agriculture. In some cases, it is not financially feasible for the owners to consider major shore protection devices to mitigate erosion. Further, such devices often are not appropriate for some common problems associated with bluff stabilization. To address the needs of lower income shoreline residents and raise awareness of non-structural approaches which are effective in dealing with specific erosion problems, we heavily emphasized vegetative protection and bluff drainage in 1981.



For instance, two bluff stabilization workshops were cosponsored with County Cooperative Extension and Soil Conservation staff in Wayne and Monroe Counties. A program evaluation indicated that most of the 40 persons attending identified specific low-cost measures (\$1.00 - \$50.00/linear foot) which they could implement. Fifteen individuals followed up the workshops with requests for onsite visits to plan mitigation measures. A similar workshop was conducted for 20 members of the Green Hills Neighborhood Association along Lake Erie. A delayed evaluation indicated that all households represented at the workshop had taken some measures to improve bluff drainage. At seven sites along Long Island's North Shore, Sea Grant aided property owner associations to understand how to cope with excess ground water-caused erosion. In this case, mitigation was undertaken at three sites with alterations being made in the bluff to slow future erosion.

Individual requests for assistance in dealing with erosion problems are common with more than 300 requests occurring in 1981. Common topics include casualty loss claims, flooding, mitigation measures, cost information on various approaches, permit requirements and lake level regulations. Example decisions resulting from such contacts include a marina operator who is constructing a floating tire breakwater; a prospective buyer who declined purchasing waterfront property when learning estimations for repairing an erosion control structure; a land owner who learned of and implemented repairs to a revetment before it failed; and another land owner who turned down a contractor's "offer" to construct an extensive (and expensive) revetment when drainage and vegetative measures appeared adequate to control the erosion problem.

### 3. Example Anecdotes

\*To effectively combat erosion, often necessarily means that more than one property owner must be involved if initiatives are to ultimately succeed. A Sea Grant specialist met with the Board of Directors of the Sag Harbor Hills Improvement Association to help them evaluate alternatives for coping with erosion along their properties. Visits to the site and diagnosis of the area's erosive processes were presented to the twelve person board with the suggestion that other adjoining property associations be involved in the future activity to mitigate the problem. The group subsequently decided to work with two other associations to combat the erosion difficulty, involving more than 400 families in the effort.

\*During the last two years, Sea Grant has worked with East Hampton High School to establish a credit-bearing course on coastal processes there. As a part of this course, students conduct beach profile surveys during the year making the information available to local planners and public agencies concerned with erosion planning and decision making. This project has worked so well that other schools have asked Sea Grant to help them get started on similar projects. This year high schools in Hampton Bays, Westhampton, Ocean Beach and Long Beach began monitoring beaches in the area of their schools with Sea Grant's technical support. The Corps of Engineers additionally is providing student and teacher training in surveying and will be publishing the results.



## COASTAL TOURISM AND RECREATION

### 1. Communities and Government

A basic principle of sound tourism development is that it must be approached from an organized community view rather than solely from the perspective of individual tourism enterprises. This requires involvement of governmental bodies and tourism organizations. At the state level, New York's Division of Tourism has become a very active participant in tourism promotion and in providing limited specific training for individual enterprises. However, a parallel focus on tourism generally is lacking at the regional and local levels.

Regional promotion of tourist destinations appears to be an increasingly desirable approach, allowing communities to pool their collective attributes and services. The Seaway Trail was established by the State Legislature to provide Lake Ontario and the U.S. side of the St. Lawrence Valley with such a regional identity. In part because of communications between tourism interests along Lake Ontario arranged by Sea Grant, the Trail was extended by the State Legislature to Niagara Falls to allow lakewide promotion.

That was the easy part. Now coastal communities must review the potential the Trail offers and steps needed to capitalize on it. Rather than reinvent the wheel, a Sea Grant specialist visited the Americana Trail in New England to learn how a successful trail is organized and developed. This resulted in a slide program and illustrative materials for use with local Chambers of Commerce and development organizations who must act to implement a trail in New York. By year's end, more than 100 community leaders had viewed the program and at least one subregion was proceeding with a trail development plan. Niagara County has already acted on the Sea Grant suggestion to develop intracounty agricultural tours.

The emerging Lake Ontario sportfishery has forced many coastal communities into considering tourism planning--if only to keep large numbers of anglers away. The small Village of Dexter discovered that the Black River, which bisects it, soon would host a major salmonid fishery. Sea Grant provided 80 residents with an overview of potential impacts and options for tourism management. The Village subsequently began development of a long range tourism plan with assistance from Sea Grant.

Good ideas seem to reincarnate. Several years ago, a Sea Grant specialist suggested that a waterfront festival based on the regionally popular bullhead fishery might be a useful tourism development gimmick for a St. Lawrence River community. Not sure they wished a catfish to be their projected image, community leaders chose to pass that one up. This year, the neighboring Clayton Chamber of Commerce moved ahead with a Bullhead Festival which hopefully will be an annual event. More than 400 persons participated in a fishing derby, fishfry and entertainment events associated with the Festival.

In a very real sense, every community member can influence the success of area tourism through hospitality--or lack thereof--they express. More than 30 Jefferson County youth participated in a hospitality program conducted by two Jefferson Community College students using Sea Grant materials. That same college is providing needed technical assistance to area communities through tourism planning projects conducted by a tourism class. The instructor established the service after seeing an article on student design services in a Sea Grant newsletter.



Despite considerable progress in recent years, boating and fishing access to Lake Ontario still lags far behind the developing sportfishery. As the fishery matures during the mid 1980's, severe congestion and associated problems with trespass and littering can be expected. Recognizing the commitment required to address the access problem and that both the private and public sectors need to respond, we have focused our efforts on developing the capabilities of local governments to deal with access issues.

The seven coastal county Fishery Advisory Boards, most of which received assistance from Sea Grant when they formed during 1980, are primary contacts for encouraging local government involvement in access issues. Sea Grant assisted the State Fish and Wildlife Management Act Board in convening county fishery board members to gain their input to lakewide access development programs. One county board was assisted in planning a private land access survey to further define the extent of their problems. Three boards were provided information on fish passage devices as an option for opening up new fishing waters to the public. Site specific problems were addressed by all boards, often with technical assistance from Sea Grant.

For example, lack of concensus over options for opening Irondequoit Bay to lake boating and misunderstanding among local governments of Army Corps of Engineers project scheduling nearly scuttled the entire project when a deadline for local approval approached. Sea Grant informed the Monroe County Fishery Board of Corps of Engineers timetable requirements and the possibility of endorsing phased development. Specific technical information was provided for use in Board correspondence with local governments and the media. As a result, the four Town governments, the county manager and the appropriate county legislative committee endorsed opening the Bay--with a controversial bridge option decision delayed--just in time to avoid indefinite project deferral by the Corps.

Local governments in areas lacking private access facilities often become involved in operating facilities themselves. The Towns of Greece, Ontario and Newfane, the City of Rochester and Monroe County Parks Department were provided technical information on the design and operation of marina facilities. Three known changes in facilities design were made as a result.

County Fishery Advisory Boards are active also in documenting the economic impacts of the Lake Ontario sportfishery and in sponsoring activities for its development. The Niagara County Board developed a detailed report on the economic impacts of their Lake Ontario fishery. Sea Grant assisted with their research design and the final report cited many Sea Grant research and extension references. The Wayne, Monroe, Orleans and Oswego County Boards also were assisted in economic impact documentation.

Several Fishery Boards are taking the lead for sportfisheries promotion in their counties. Sea Grant arranged for tourism students at Rochester Institute of Technology to develop promotional themes and logos for the Monroe and Orleans Boards. Both Boards subsequently adopted the materials submitted as official county promotional themes. About \$30,000 worth of advertising consultant fees were saved by the Boards in the process--much more than their shoestring operations could have endured. Two Boards were assisted in designing fishing derbies. Lest the economic



impact of such activities be overlooked, the Empire State/Lake Ontario Derby was assisted in estimating the economic impact of their 1981 event--apparently the largest derby nationwide. It was estimated that the more than 8,000 registrants generated more than \$2,225,000 in expenditures to fish in the four-day event.

## 2. Tourism Enterprises

Despite recent public investment in tourism development, private enterprises are the backbone of tourism industry. The coastal setting offers challenges as well as opportunities for small businesses.

There are more than 750 marina/boatyard enterprises and over 300 charter/party boat enterprises statewide, with the largest concentration in the marine district. In the past several years we have expanded efforts to reach these businesses. During 1981, Sea Grant sponsored meetings for both marine trades and professional boatmen with over 125 participants identifying needs to cut operating costs, promote their products more effectively and use emerging technology to deliver a better product to their customers.

More than 100 marina operators along New York's Great Lakes received four issues of a specialized service letter entitled Marine Facilities Notes. Self-help options and sources of assistance in business management, facilities design, aquatic plant control and new technologies were featured. A postcard survey indicated that most of the recipients identified the information as helpful to their business.

Fifteen Great Lakes marina operators were assisted with specific problems ranging from difficulties with permitting procedures to sources of marine equipment to oil analysis and appropriate herbicide applications. For example, one operator modified a boat launch design based on suggestions from Sea Grant and afterwards noted that most ramp users had commented on the improved ease of launching. Two operators were provided descriptive information on Lake Ontario sportfisheries development which was used to support their loan applications for facilities expansion.

To help the marine trades industry cut costs, Sea Grant worked closely with the New York State Energy Office in identifying costly energy use patterns practiced by that industry. Through Sea Grant's efforts, intensive energy audits were conducted on two marina facilities having characteristics similar to that of the rest of the industry. Through these, it was learned that marinas may reduce their electrical energy bills by as much as \$5,000 per year. To raise awareness of this possibility, Sea Grant field staff published articles in trade journals and Coastlines identifying critical changes which could be made to save money. As a result of this, one marina changed lighting equipment and saved over \$3,000 in the first year after recapturing the new investments costs.

To help marina leaders gain the skills necessary to strengthen their trade associations, Sea Grant sponsored a leadership skills seminar attended by more than fifteen Association officers. At the end of the workshop, participants noted that they felt more confident about leading and asked Sea Grant to present additional seminars on topics of value to the industry.



Sea Grant's resources to aid the marine trades industry in New York are being used by businesses from other states and nations. For instance, a real estate management firm in Louisiana contacted Sea Grant in New York to gain information on marina operations and financing alternatives. Another educational project led by New York but helping clientele from several states was the submission and subsequent publication of an article dealing with stress management in the marine trades. This article sought to have owners and operators of marinas identify the stresses which they are now under in turbulent economic times and identify ways to recognize and relieve that stress in a positive manner. It was published in Spencer Publications' Amidships and received by marina operators throughout the Northeast.

During the course of the year, 23 inquiries for information on floating tire breakwaters were received from marine trades businesses in seven other states and three other countries. It is encouraging to note that many of these referrals are now from federal permit agencies and corporations who view Sea Grant as the most authoritative information source on this subject. To make this information more widely available in a form which may be used by both engineers and lay people, Sea Grant Programs from New York and Rhode Island worked cooperatively with university researchers from Canada and California in updating a floating tire breakwater publication. Interest in this technology led a French agency to translate New York Sea Grant's publication into that language.

With the recent explosion of sportfishing on Lake Ontario the demand for bait and tackle has grown immensely. Prior to 1981 we had no directed programming for bait and tackle operators--a group that can be key for maintaining a satisfied fishing clientele. We began to address that shortcoming in 1981. Many bait dealers have difficulty maintaining minnows, especially during summer. A fact sheet on proper minnow handling and storing was developed and distributed to more than 30 dealers. At least four have made specific changes in their facilities based on information included in the fact sheet. Perhaps more importantly, Sea Grant has gained access to this subcomponent of the Great Lakes tourism industry. Also, three individuals were assisted in establishing worm farms for direct marketing to anglers.

Business management difficulties plague the often informal Great Lakes tourism enterprises. Thirty-three entrepreneurs participated in a tax management workshop cosponsored with Oswego County Cooperative Extension and the Small Business Administration. More than half anticipated specific tax savings as a result. Thirty-two persons participated in a five-session small business management course cosponsored with St. Lawrence County Cooperative Extension and Clarkson College. A followup questionnaire indicated that three out of four attending found the course very worthwhile and could identify specific changes in business practices they would make. Forty-five persons attended three energy management workshops cosponsored with county extension associations in Oswego, St. Lawrence and Jefferson Counties. Participants estimated resulting average annual energy savings at \$200 each.

During 1980, Sea Grant provided the Clayton Shipyard Museum with a "site visit" by experts who developed specific recommendations to enhance the museum. This year, the Museum adopted several recommendations dealing with organizational structure and display areas and received a \$1500 grant for boat reconstruction after



Sea Grant provided counsel on proposal development and documentation. The Museum is a key coastal tourism resource in the western St. Lawrence Valley.

### 3. Recreation Opportunity Education

The above components of our recreation and tourism program all deal with the producers of recreational services or opportunities. Some efforts are directed also at the consumers--recreationists themselves. Many New Yorkers do not view their coasts as primary recreation destinations. In some cases this is because of past problems with access or environmental degradation or because of competition from inland or neighboring tourist destinations. In other cases, people simply are unaware of existing opportunities. In large part, this problem should be addressed by promotional agencies and organizations such as tourism departments and chambers of commerce. Yet there remain many educational roles as well.

Contact with recreation related organizations provides captive audiences and effective multipliers for recreation related information. More than 45 angler organizations with a combined membership of more than 1800 received information on fisheries development plans, current Sea Grant research on salmonid migrations, toxic chemicals in fish, shoreline access problems, fish handling and preparation, boating safety, hypothermia and cold water drowning. Another 20 groups (membership more than 500) such as Power Squadrons, Yacht Clubs, and specialized groups such as the Oswego Maritime Foundation and senior citizens clubs received similar information.

Often, organized groups take next steps and apply the information they receive. For example, the Rochester Trout and Salmon Anglers Association has developed an informational campaign to reduce trolling accidents. The Barcelona Yacht Club and Lake Erie Trout and Salmon Association regularly use recreation related articles from Sea Grant in their newsletters (combined circulation more than 300). Several angler groups have orchestrated cleanup and repair measures at local access points once problems were pointed out by Sea Grant staff. Many groups with which we have worked now effectively and knowledgeably address their representatives and management agencies on public decisions that affect their leisure pursuits.

Angler groups often cosponsor educational programs with Sea Grant such as a Lake Erie Walleye Workshop at which 200 people learned angling hints and received a review of walleye biology.

Despite the effectiveness of group contacts such as those described above, hopes to influence a significant portion of the total population of current and potential recreationists have to be based on mass communications techniques. Distribution of informational materials is key.

Two key publications were developed in 1981. The smallmouth bass fishery in Lake Ontario provides fine angling--but has been a well kept secret. Also, techniques developed by local anglers are much more productive than standard techniques. An inexpensive pamphlet was developed that describes the geography of the fishery and successful techniques. More than 3500 copies were sold in the first season. By focusing attention on less popular species and species available *during* "off" seasons for salmonids, we hope to broaden and stabilize the sport angling tourism industry.



The second publication, "Lake Ontario's Recreational Climate" had a similar purpose--to lengthen the tourism season. Great Lakes weather can be fierce but provides some unique recreation opportunities--ice volcano watching for example. This publication incorporated weather data provided by the National Ocean Data Center with a seasonal recreation opportunities guide, enticing recreationists year 'round. Chambers of Commerce and tourism development organizations are expected to fund additional print runs once the original print run of 5,000 is exhausted.

Effective use of media is necessary to reach large numbers of recreationists. Activities ranged from periodic appearances by Sea Grant staff on TV programs--Lake Ontario angling techniques on "AM-Watertown" and Lake Erie recreation opportunities on "AM-Buffalo" for example--and at least 10 local radio programs. Two releases on Great Lakes angling released through Cornell's Consumer News Service reached more than 50 stations each in the Northeast with an estimated audience of 13 million.

A frontal attack was made on the print media when Sea Grant cosponsored the annual meeting of the New York State Outdoor Writers Association in Rochester. The 35 writers from New York and Massachusetts had opportunity to directly experience the developing Lake Ontario fishery and were provided overviews of Sea Grant sport-fishery research. The attending writers subsequently authored at least 10 articles or columns based on their experiences including features in prominent publications such as "New York Sportsman", "The New York Camper", "New York Recreation Guide" and newspapers in Amsterdam, Geneva, Buffalo, Rochester, Syracuse and Ithaca, New York.

#### 4. Example Anecdotes

\*Chemical contamination of Lake Ontario fish poses a substantial barrier to the recreational opportunities offered by the fishery. Misunderstanding is rampant about current health advisories, the chemicals themselves and techniques available for reducing the level of contamination in flesh eaten. Newspapers strongly influence public perception of contamination issues. Since scientific discoveries about the chemicals have occurred discontinuously, the findings have been reported disjointedly. Public reaction often turns skeptical or cynical when findings are reported out of context or as just another "scare".

Ideally, papers would have reporters who follow chemical contamination issues regularly and who can place each new announcement in context. Recognizing that this ideal was unrealistic for most papers, Sea Grant contacted the managing editor of the Gannett dailies in Rochester and offered to conduct a short course on chemical contamination of Lake Ontario for their staffs. The offer was accepted and sixteen reporters and editors were treated to an afternoon of environmental health principles, tolerance limits, parts per trillion and economic impacts of chemical contamination. Much emphasis was placed on sources of additional information--including Sea Grant. Hopefully, the 350,000 readers of the two papers will receive complete and objective accounts as new contamination "discoveries" are made. The value of the session in the managing editor's view was demonstrated when two additional workshops--on lake levels and sportfishery development--were requested for early 1982.

\*Economic analyses of the sportfishing industry clearly demonstrate the importance of charter fishing operations to local economies. Community leaders and prospective charter captains along Lake Ontario lustily viewed the booming Lake Michigan



charter industry as New York's fishery developed. In 1975, there were no Coast Guard licensed charter operators on Lake Ontario. By the end of 1980, leaders among the about twenty licensed operators became interested in exploring formation of an association to enhance their businesses. Enter Sea Grant.

Specialist Voiland convened an exploratory meeting of captains at which the pros and cons of organizing were aired. Based primarily upon concerns for quality control among operators and the perceived need for collaborative promotion and group insurance discounts, the Lake Ontario Charter Boat Association was formed. Sea Grant agreed to provide secretarial and organizational assistance for the first year only. A Sea Grant news release on formation of the association was picked up by UPI getting collaborative promotion off to a galluping start. During the year, Sea Grant provided information on model bylaws, parliamentary procedures, current Coast Guard regulations, cold water survival procedures, and procedures for applying for trophy catch recognition. The favor was returned when the Association donated \$100 for support of Sea Grant research on salmonid tracking.

The Association established an insurance package with a major underwriter and a \$2000 matching ad account agreement with the Rochester Convention Bureau. By year's end when Sea Grant's direct involvement with the Association ended, membership totaled 50 and the Association had established itself as an important component of the Lake Ontario tourism industry.

\*Marine trades and charter/party boat enterprises identify the need for more reliable maintenance information on machinery which is in daily use. This year New York Sea Grant identified that an analysis tool being used by other industries to reduce the amount of "down time" and maintenance expense is that of lubricating oil analysis. Termed "Oil Analysis", the technique uses periodic samples of machinery lubricating fluids to assess the status of equipment condition. When this oil is analyzed by specialized commercial laboratories, resulting information can determine optimal equipment maintenance and repair, and indicate why equipment may not be functioning at peak performance.

This tool was introduced to 24 marinas and charter/party boat owners with good results. For instance, one marina now offers oil analysis routinely to its customers owning \$3 million worth of pleasure craft. The field trials of this technique being used in New York State were so promising that other Sea Grant Programs around the country have sought information on the technique to use with their clientele. This led NEMAS, a regional marine educational consortium in the Northeast, to cosponsor a fact sheet and slide/tape show on this subject. These educational materials are being used with audiences ranging from commercial fishermen to boatyards throughout the Northeast.



## SEAFOOD INDUSTRY

New York State's seafood industry plays an important role in the economy of Long Island with a reported annual harvest of over \$42,000,000. Because of the nature of this industry, this value is strongly suspected to only partially represent the actual value of harvested resources. Sea Grant educational programming focuses upon aiding both individuals and groups of businesses to resolve business administration and harvesting technology questions. Local government is also assisted to understand what role they may play in further developing this industry and the businesses supported by it.

### 1. Business Management

An educational role which Sea Grant seeks to play with private business is that of informing them of specific ways they may improve profitability by cutting operating costs. During the last year, for instance, four seafood processing firms have gained sales tax exemptions on energy which they use during production periods. One such firm benefiting by this information provided by Sea Grant had previously paid approximately \$8,000 per year in sales tax.

Commercial fishermen have been effected by federal reductions in budgetary allowances for health care previously provided to them. Working with leaders from the fishing community, Sea Grant aided 700 commercial fishermen to identify how they could reduce health care costs once the Public Health Service ceased providing specialized medical care for them. Additional to this, Sea Grant is helping this industry to develop a privately financed health care plan which will likely begin in 1982.

As with agribusiness, fishermen qualify for special exemptions and incentive opportunities for expanding their business. To help industry members understand how to capitalize on these opportunities and also Federal Income Tax options, Sea Grant held information meetings. Attended by over 220 shell and finfishermen, participants additionally learned ways to avoid paying excise tax on fuel used in their operations as well as state sales tax, within limits of the law.

### 2. Finfishery Educational Initiatives

Educational initiatives for finfishermen occur through the medium of large group meetings, small group meetings, individual consultation and newsletters. This year a two-day conference for industry members attracted over 700 participants to learn ways that they could cut operating costs and strengthen their businesses. Called Fisherman's Forum, this meeting additionally provided opportunity for fishermen to meet with public officials and regulatory agency representatives to discuss important issues in a "non-crisis" atmosphere.

Throughout the year, small group workshops were held to discuss trawl doors, radar reflectors, pair trawling operations, fuel efficiency alternatives, and DC electrical systems. More than 500 commercial fishermen attended these meetings, some of which were presented in collaboration with Sea Grant Programs from Rhode Island and Maryland. As a result of these meetings, a group of New York fishermen participated in a Trip Guarantee Program provided by the Mid-Atlantic Fisheries Development Foundation while utilizing pair trawls. Two fishing vessels were so successful using this new technology that they discontinued the Trip Guarantee Program after several days. A 50% reduction in fuel use, coupled with increased catch per tow as compared to single vessel operation, caused this change. To gain more information about this technique, a Sea Grant specialist and two New York fishermen visited with commercial fishermen in Fortune Bay, Newfoundland engaged in pair trawling. Sponsored in part by the Mid-Atlantic Fisheries Development Foundation, this group documented valuable operational short cuts and gained previously unknown information during this trip. This information was subsequently



related to others from New York interested in field testing pair trawling for themselves.

The Sea Grant Extension fisheries staff produce a monthly information bulletin for commercial fishermen. Read by over 1200, this publication presents timely information on techniques, equipment and industry issues. Designed to help these businesses realize greater profits, articles focus on ways to cut operational costs and improve business decisions. In 1981, this was evaluated to assess the benefits realized by newsletter readers. The survey found that nearly 70% of the readership (approximately 1,000 subscribers) identified that they directly benefited from information presented through this vehicle. Of these, 23% indicated they sought additional information for decision-making from Sea Grant and other cited sources. It is notable that five individuals documented over \$8,500 in cost savings/benefits gained by using information found in the newsletter.

### 3. Shellfish and Hatchery Operations

Public and private shellfish hatchery operations use substantial amounts of energy and thereby maintain large operating costs. A typical hatchery on Long Island uses over \$15,000 worth of energy to maintain productive operations throughout the year. Recognizing the value of hatcheries reducing this investment, Sea Grant collaborated with New York's Energy Program to identify critical areas of energy waste and share this information widely. To do so, Sea Grant arranged for two shellfish hatchery operations to receive one-day energy audits of their facilities. Information gained from these audits was subsequently developed into confidential reports by Energy Program consultants. With the permission of hatchery owners, the contents of these reports were reported to 60 other participants in a Sea Grant sponsored workshop on hatchery operations. Additional to this, Sea Grant condensed the information and presented it in an article submitted to a widely-read industry publication, Aquaculture Magazine. As a result of the energy audits, workshops and article, over 20 inquiries have been received by Sea Grant from businesses across the nation. And, shellfish hatcheries on Long Island have indicated that over \$3,000 has been saved by implementing suggestions presented by Sea Grant and energy experts.

New York based lobstermen face similar challenges to their counterparts in other marine areas: marine organism attack of their traps; and, vicious weather sometimes preventing the hauling of traps. In an effort to reduce these dilemmas, Sea Grant undertook a field test of treating wooden lobster traps with the chemical preservative CCA to evaluate trap durability and harvesting effectiveness. Working with New York based lobstermen, initial results of field trials and laboratory experiments indicate that CCA treated lobster traps harvest lobsters at a rate similar to non-treated traps. And, there is strong evidence that traps treated with this wood preservative may last several times longer than untreated counterparts due to less attacks by boring organisms. To gain more information and experience with this process, Sea Grant gained a commitment from a New York based wood treatment plant operator to provide \$500 worth of treated traps for industry members to evaluate. Field trials will continue into 1982, with results being portrayed and shared widely through an information sheet which will be published on the subject and disseminated nationwide.

### 4. University Faculty Resources

The Sea Grant professorship in marine economics has provided a strong focus on fishery issues within the Cornell Department of Agricultural Economics. It is now common for graduate level courses in marketing and production economics to include fishery examples. This bodes well for future economic expertise available to the marine community. Current research topics include management options for the Great South Bay



clam fishery, costs and returns to the otter trawl fleet, economic importance of the striped bass fishery and economic impacts of the 200-mile limit. Each of these areas is generating resource materials directly applicable to fisheries extension educational programs. Example applications of this research include a presentation on direct marketing for commercial fishermen at the Long Island Commercial Fisherman's Forum attended by 52 commercial fishermen. A workshop was also conducted for state resource management agency representatives on biological and economic implications of various hard clam management strategies. Also, a marine economics in-service program was conducted for 14 Sea Grant and 4 County Extension staff.

The Sea Grant professorship in shellfisheries has provided a complimentary resource for extension programs taking place. This individual convened a Long Island Clam Culture Workshop which brought together 40 commercial operators, town clam managers, state and federal agency representatives and researchers to discuss new research findings on current management issues. This individual has additionally participated on the National Sea Grant Aquaculture Planning Team, to insure that national and state needs in the area of clam mariculture are addressed in the future by research and extension education initiatives.

The shellfisheries professor has been additionally active in aiding towns to plan for their shellfish resources. The Town of Brookhaven asked Sea Grant Professor Bob Malouf to advise the town on matters relating to bay management. He subsequently developed a Town Advisory Committee on this subject consisting of representatives from the university, town government, the county, state agencies, as well as baymen and interested citizens. Meetings held to date have clarified ways that clam aquaculture may proceed more readily in the future to benefit constituencies.

In addition to formal presentations, the shellfisheries professor has provided specific information to a number of groups and individuals on matters concerning shell sectioning as a means of determining clam age; cultural techniques under controlled and semi-controlled conditions. The Shinnecock Indian Aquaculture Project requested and received information on appropriate pumps for their new hatchery. With the towns of Babylon, Islip and Brookhaven receiving information on specific aspects of seed clam planting. Results of Sea Grant sponsored seed clam planting projects have been informally shared with groups of town biologists as well as the Long Island Association of Town Biologists. This association is a very informal group made up of "working level" biologists from the various towns. This group most likely will make immediate use of the findings in day-to-day operations and local decision making.

##### 5. Government and Industry Associations

The fishing industry is sometimes not envisioned to be an important market for major manufacturers of United States products. In an effort to counter this perception, Sea Grant has worked with major companies to expedite the field testing of products or techniques not currently used by the fishing industry. For instance, a significant fishing vessel expense is the replacement of worn and corroded towing cable. Often large trawlers will replace over \$10,000 worth of cable each year, with the fishing industry's perception being that this is part of the fixed cost of operations. A product manufactured by DuPont Chemical Company called Kevlar, has been developed into a line which has similar engineering characteristics to that of steel cable. In other uses, this synthetic line has lasted significantly longer than steel cable with the resulting savings in labor and material costs being significant to other marine industries. Working with DuPont representatives, Sea Grant has identified several fishing businesses interested in field testing this cable to determine if similar savings may be



enjoyed by the fishing industry's changing its mode of operation. The DuPont Company is excited by the prospect of this field test proving to be successful and has provided over \$10,000 in materials and testing services on this project. The results of this field trial will be completed during 1982, with the experiences and data scheduled to be made available by Sea Grant thereafter.

Another significant cost for marine operators is that of maintaining their fishing vessels in an appropriate way to decrease corrosion of the steel hull, deck superstructure and machinery. The labor costs and materials invested in this unceasing battle against corrosion represents significant overhead costs to the fishing industry. In an effort to stem the tide of corrosion, Sea Grant specialists have identified a process of "painting" steel hulls with liquid metal perfected by the Metco Corporation. Discussion with corporate executives and engineers resulted in this company expressing a willingness to field test their process on select fishing vessels. If successful, this procedure may open a whole new market for that corporation and potentially save the fishing industry nationwide from an age-old dilemma.

The Mid-Atlantic Fisheries Development Foundation seeks to stimulate the testing and adoption of new technology by the fishing industry. Using private contributions and government grants, this foundation provided support for Sea Grant to make innovative equipment available to the New York fishing industry on a trial basis. This year the Foundation made commercial squid jigging equipment available to New York fishermen from a Japanese firm; provided a European pair trawl for use in Trip Guarantee Programs; and has provided sophisticated electronic equipment for use by fishermen interested in evaluating ways to make their operations more efficient. Sea Grant has played the role of on-site coordinator of these field trials, developing appropriate information on the outcomes for use by other interested fishermen. This collaboration has also allowed commercial fishermen with experience field testing the equipment to assume a leadership role at Sea Grant sponsored educational workshops. In many cases, innovative fishermen seeking to improve operations are equally as willing to share their experiences with others who are eager to assess if the information has value to their businesses.

#### 6. Example Anecdotes

\*Last year, baymen from along the southshore of Long Island asked Sea Grant to help them develop an umbrella organization which could effectively represent their views to public decision-making bodies. With Sea Grant's assistance, the Long Island Baymens Coalition was formed to uniquely represent the needs and views of shellfish harvesters operating in publicly owned areas of the Great South Bay, Moriches Bay and Shinnecock Bay. This year, that Coalition approached Sea Grant to learn how it could ensure that a major sewer project would not unduly harm the clam populations if a leakage occurred. Sea Grant helped the group to identify positive suggestions which could be used to improve this situation. One important idea was that of asking the county to establish a quick response repair team that could repair a pipe break quickly, thereby preventing closure of a large shellfishing area due to high coliform counts. After several meetings with county and local officials, the Baymens Coalition was successful in stimulating this mechanism to be formed. Additional to this, Sea Grant arranged for scientists from the Marine Science Research Center at Stony Brook to develop a model of pollution dispersal in the area of that pipeline should a break occur. This information was able to be developed from data gathered during a previous Sea Grant sponsored research project called the Great South Bay Study.

\*Because Sea Grant is often viewed as a neutral source in disputes, it can play a role in mitigating conflicts between user groups. This was the case between recreational boaters and fishermen using pots to harvest eel and conch in Peconic Bays. At the request



of Riverhead Town officials, Sea Grant developed educational materials for both the fishermen and boaters to reduce navigational conflicts with fixed fishing gear present in the water. The Town Supervisor and commercial fishermen operating in the waters agreed that an educational process was more acceptable than legislation. Because of this initiative, recreational boaters and fishermen have a better appreciation for each others' values and are making honest attempts to minimize inconveniences previously caused by ignorance of the situation.



## SEAFOOD PROCESSING AND MARKETING

It is a well-experienced situation that no matter how efficient the commercial fishing industry may be, unless its products may be sold at profit, the effort is futile. Sea Grant's role in the area of seafood marketing and processing education is that of seeking to aid expansion of foreign and domestic markets for seafood products, stimulating shoreside facilities to more efficiently process the harvest and aiding retail and wholesale seafood marketing enterprises to be more effective.

### 1. Market Expansion

Until this year, commercial fishermen of Long Island had not previously participated in joint ventures with foreign nationals to harvest less desired fish stocks. To help interested fishermen understand business and technical aspects of this undertaking, Sea Grant sponsored a workshop focusing on this subject. Twenty-two fishermen, packers and buyers participated in the meeting discussing new market opportunities and onboard transfer and handling of seafood products like squid. This meeting proved to be timely when four months later Japanese companies entered into a joint venture with the United States for harvesting squid off Long Island waters. During a two-month period, over 20 New York vessels participated in this enterprise landing over 300,000 pounds of squid. This at a time when markets for other seafood commodities were scarce and mortgage payments on vessels seemed insurmountable! It is estimated that over \$40,000 worth of squid bolstered the coffers of commercial fishermen, many of whom attended the workshop presented by Sea Grant to help them capitalize on an opportunity such as this.

Working with foreign trade specialists of the National Marine Fisheries Service (NMFS), New York Sea Grant arranged for some 40 New York commercial fishermen and seafood packers/processors to participate in a fishery trade mission from Japan. The New York business representatives met with Japanese seafood specialists representing firms interested in learning more about the potential export of United States harvested products. As a result of this initiative, weak fish and tile fish were selected by the Japanese to be purchased from New York processors for test marketing in that country. Efforts such as this are hoped to reduce periodic gluts on the domestic market and improve the financial returns to New York fishermen.

### 2. Shoreside Facility Expansion

Since the FCMA was passed by Congress in 1976, there has been heightened investment in harvesting capabilities by commercial fishermen. Unfortunately, a concomitant expansion of shoreside facilities for handling and processing the additional seafood has not been made to date. To begin stimulating this investment, Sea Grant raised the awareness of this need with directors of the Farm Credit Association. As a result of this educational initiative, that organization altered its assistance to fishermen interested in establishing shoreside facilities to help process and market their harvest. Subsequently, there have been three project applications by seafood businesses which have been accepted for funding.

### 3. Example Anecdotes

\*Although Suffolk County on Long Island is the major seafood harvesting county in the state, local elected officials don't often understand the ways that they can stimulate the industry to be a more powerful economic force in communities. To alter this situation, Sea Grant specialists teamed up with the Mid-Atlantic Fisheries Development Foundation to conduct a tour of New England commercial fishing ports and seafood industry members. Attended by 15 Suffolk County Legislators, town supervisors, planners and fishing industry leaders, this initiative created new awareness of future potentials in New York. The group visited with the New Bedford Seafood Council, officials from the New England



Fisheries Development Foundation, fishery co-ops and NMFS leaders from New England bringing back valuable information of how others nearby are taking advantage of the benefits which this industry may offer for economic development. Since New York's neighbors are so close, if shoreside facilities are not improved within this state, then potentially millions of dollars worth of seafood will be landed in those regions having appropriate facilities. As a consequence of this tour, Suffolk County officials organized a commercial fishery council composed of locally elected officials and industry leaders with the expressed objective of seeking to improve the climate for this industry through legislation and financial initiative. One outcome of this council has been the creation of an industrial bonding program which will aid shoreside facility development to get under way.

\*A marketing potential often overlooked by domestic businesses is that of improving seafood sales within area supermarkets. Often supermarkets become the principal point of purchase of food commodities by New Yorkers, yet few markets in this state having an important seafood industry are adequately or effectively presenting seafood commodities for sale. The reasons for this shortcoming are numerous, but include a historical lack of experience by supermarket managers and staff with seafood as a food commodity. To begin altering this situation, New York Sea Grant teamed with counterparts in Virginia to present a Seafood Marketing Conference focusing on the many important elements of supermarketing seafood. Attended by over 40 supermarket chain representatives, this meeting was identified as an awareness raising initiative to begin altering incorrect perceptions about the opportunity to profit from marketing this food stuff as well as resolving the technical issues of handling this product. It is noteworthy that the Virginia Sea Grant Seafood Marketing Specialist was able to relate quite well to these New York chain representatives because of his training received while a "Limited-Term Specialist" with New York Sea Grant two years ago. One outcome of the meeting was that representatives of Cryovac met with Sea Grant specialists to gain an overview of New York State commercial fisheries. This company is developing a process for transshipment of seafood products from coastal areas to inland regions having less well-developed markets for seafood.



## CONSUMER FISH USE

"Fish as food" related programs received a large boost in 1981 with the start of two developments: a half-time extension associate position in Cornell's Division of Nutritional Sciences focusing on nutritional and safety aspects of seafood, and the commitment of a major portion of one field staff member's plan of work to seafood use.

The more than 180 Cooperative Extension Home Economists in all New York counties are a primary contact audience for this program. A first step in designing in-service educational programs for this audience was conduct of a detailed seafood knowledge survey. This tool pointed out primary subject areas in which more information was needed--such as nutritional content of seafood and proper handling and storage--and can be used in similar fashion with other audiences.

Initial efforts were directed towards compiling current seafood related information and testing various teaching tools and approaches for specific populations of seafood consumers. A seafood news packet was developed and used by home economists in more than 30 counties. 1500 health professionals and extension staff received a synopsis entitled "Fish Contaminants in New York State--Case Study: Dioxin" developed by the nutrition associate.

Training efforts for extension staff included a "Seafood Sense" workshop for 53 EFNEP aides in New York City, two meetings on seafood safety for 15 EFNEP Aides in Wayne and Jefferson Counties and two meetings on food safety for 50 teachers and consumers in Herkimer County. These EFNEP aides reach a combined total of 3400 families.

Seafood related topics were treated in a variety of media. More than eight articles were included in our "Coastal Living" newsmagazine program (see Communications section of this report). Two live television call-in programs on seafood handling were conducted on "AM/Buffalo". Seafood radio and television spots were aired statewide including prime time broadcasting on major New York City stations such as CBS.

To aid Spanish-speaking consumers to use seafoods, Sea Grant collaborated with Cornell University Cooperative Extension consumer educators in New York City in producing radio spots for Spanish television and radio outlets.

This year the New York State Department of Agriculture & Markets began producing seafood consumer information materials after receiving funding from the Mid-Atlantic Fishery Development Foundation. Sea Grant collaborated with this department on educational programming for over 50 food editors from newspapers throughout New York State. In Nassau County on Long Island, Sea Grant helped County Cooperative Extension staff put together an educational display at a Seafood Festival. In these initiatives Sea Grant played the role of enabling other organizations to promote seafood utilization more effectively. In this way, Sea Grant is acting as a resource base for others to use their time and resources to improve consumer knowledge of seafoods.



### Example Anecdote

Some populations are much more dependent on seafood than others. Migrant workers along Lake Ontario rely heavily on locally caught fish--eating it up to three meals daily according to interviews with EFNEP aides. Since all Lake Ontario species contain some chemical contamination it is crucial that the workers be aware of current health advisories and know preparation measures available to reduce contaminants eaten. The "eat none" option is not economically feasible for many migrant families.

A needs assessment was conducted with EFNEP staff in Wayne County through which dietary habits and levels of knowledge about contaminants were established. Based on that information, two training audiotapes and three informational flyers were developed. These teaching tools will be used in workshops for more than 80 migrant families in Wayne County alone. Local agency support from such groups as the Rural New York Farmworkers, Community Action Program and Wayne/Finger Lakes Tutorial was gained through a workshop on fish contaminants. Techniques proven in this effort should be applicable to lower income households statewide.



## YOUTH EDUCATION

We had two primary goals for our youth education efforts in 1981: to increase the involvement of multiplier organizations capable of conducting on-going coastal education programs and to begin to more fully incorporate Sea Grant's responsibility for youth education into our technical subject areas. Progress was made in each.

### 1. Cooperative Extension 4-H

Eight upstate counties initiated new 4-H programs with coastal emphases such as fishing skills, fish identification, marine sciences, shoreline protection and water pollution. Estimated involvement was 1500 youth. Seven leader training sessions involved 15 cooperative extension agents from ten counties, more than 30 volunteer leaders and over 150 youth. To help develop a "4-H following", displays were maintained at the State Fair and Monroe (Rochester area) and Erie (Buffalo area) County Fairs. Both of the latter had marine science entries in their 4-H awards displays.

Those not familiar with 4-H may underestimate the depth of involvement in a subject area that is possible. The Erie County 4-H Coastal Education Club traveled to Cape Cod and visited Woods Hole and the New England Aquarium. Most of the 22 members subsequently entered projects based on the trip in the Western New York Science Congress. Five placed in the finals; one placed third overall. The newly formed Onondaga County (Syracuse area) Marine Sciences 4-H Club met regularly and delved into a variety of technical subjects.

### 2. School Systems

Important initiatives were undertaken this year to integrate marine resource education into formal curricula of school districts statewide. Sea Grant specialists worked with State Education Department representatives to develop a concept paper dealing with marine education infusion into tenth grade biology and social science classes. In addition, Sea Grant was asked to review and comment upon the biology regent's examination. Groups of educators statewide were assisted in the development of new K-6 science curriculum incorporating marine resources as part of Sea Grant's statewide marine education research program.

This year Sea Grant was invited by the National Science Foundation to present techniques for improving educational programs related to science and marine resources in the Inner City. The Council of State Science Supervisors also involved Sea Grant in surveying marine/aquatic education efforts in individual states. Once this survey and another focused on marine educators are completed, the materials will be condensed into a national directory of marine and aquatic education program resources. Sea Grant participated in the planning and conduct of a student conference focusing on marine careers attended by 600 high school students from the New York City Metropolitan area. Such programs stimulate youth to think about the importance of marine resources and spark those with a special interest to consider a career in this field.

Sea Grant marine education materials were actively distributed nationally through presentations to the National Science Teachers Association, National Marine Education Association and regional outdoor educators associations.



Our existing ties with New York's Education Department were further strengthened in 1981. New York and Ohio Sea Grant organized a Great Lakes-wide workshop involving Sea Grant staff and Education Department representatives from five states. Teaching materials and strategies were exchanged. Each state committed to developing a five-year plan for marine education. A follow-up meeting among New York Sea Grant and State Education representatives resulted in a specific plan for training and coordination activities.

More than 25 school districts in the Great Lakes District were involved in coastal education projects during the year. Sea Grant provided teacher training workshops in Great Lakes research, aquatic sciences and coastal environments directly involving more than 50 teachers and 1500 students.

### 3. Technical Programs

Significant progress was made in linking our youth education program to our overall programming strengths, particularly in the areas of sportfishery development and consumer fish use.

Examples of the former include a "work study" experience arranged at a private fish hatchery for a senior student, presentations on toxic substances in the Great Lakes and marine sciences for Gifted/Talented Classes in the 4th, 5th, and 6th grades of Holland Central School, and arranging educational components of two sportfishing derbies for youth. In the Buffalo Fishing Derby, 100 youth learned fishing skills and general aquatic sciences principles. A 14-year-old fishing for the first time won the grand prize with a walleye weighing over eight pounds! The second derby was sponsored by the Cystic Fibrosis Association of Western New York. In Rochester, Sea Grant assisted Monroe County Cooperative Extension in design of fishing/aquatic science workshops that involved 135 youth in 11 urban locations.

Sea Grant worked closely with another component of NOAA called MESA (Marine Ecosystems Analysis) to convert technical information gained through their studies into useable classroom information. The effort emphasized developing classroom education support materials, including two marine pollution slide/tape programs. These marine pollution education materials are also being used with community groups and education associations. Among these are the League of Women Voters, the New York State Outdoor Education Association and the Propeller Club at the New York State Maritime Academy (Fort Schuyler). Materials were additionally used in a National Sea Grant sponsored program taking place in Washington, D.C. focusing on Potomac River resources.

### 4. Example Anecdote

\*Affiliated with Cornell University Cooperative Extension, Sea Grant in New York has sought to integrate marine education materials into County Cooperative Extension youth educational programming. Sea Grant specialists have participated in teen conferences, county 4-H Field Day activities and awareness raising tours conducted for urban youth interested in rediscovering natural amenities such as marine environment. This year Sea Grant conducted marine heritage programs with County Extension Agents from Nassau, Westchester and Rockland Counties, reaching more than 100 youth.

These projects were so successful that Sea Grant and County Extension leaders began planning for a week-long marine youth camp on Long Island for the summer of 1982. A special training weekend for marine youth camp leaders is expected to draw



forty leaders. The first of its kind in New York State, the intent of this activity is to introduce youth from across the state to the marine environment, and stimulate County Extension leaders' interest in the subject. To aid in this, the 4-H Foundation in New York State provided support to underwrite some expenses. In this case, Sea Grant is helping existing youth educational organizations to gain the skills and information necessary to become teachers and leaders in marine resource education.



## CAMPUS BASED SUPPORT OF EDUCATIONAL PROGRAMS

### 1. Subject Matter Support

Technical support for field staff programs is provided by: a research associate in the Cornell Department of Natural Resources in the area of recreation and tourism; by the Sea Grant Professor in Marine Economics in Cornell's Agricultural Economics Department, primarily in the area of commercial fisheries; by an extension associate in the Cornell Division of Nutritional Sciences; by the Sea Grant Professor in shellfish biology at SUNY/Stony Brook; and by the Great Lakes Program Coordinator in the areas of fish contaminants and aquatic plant management. Specific activities of these persons are incorporated in other sections of this report.

### 2. Communications Support (This section prepared by S. D. Willson).

A new tool was used to evaluate our extension communications program this year. Specialists were surveyed on how often they used print and broadcast media, and how large an audience (reach) their media could draw. The survey made it possible to compare communication activities based on frequency and reach. A summary of survey results precedes commentary on different components of our communication program.

Frequency and Reach for Print and Broadcast Media  
Based on Actual and Potential Figures for  
New York Sea Grant Extension Program, 1981

Media	Circulation/ Listeners/Viewers (in thousands)	Total Issues	Reach* (in thousands)
Coastlines	3.5	6	21.
Regional Newsletters	1.9	30	16.
External Newsletters	21.5	26	74.
Magazines	220.3	4	220.
Newspapers	3,004.7	160	15,758.
Coastal Living	6,700.0	38	509,200.
<b>TOTAL PRINT MEDIA</b>	<b>9,951.9</b>	<b>265</b>	<b>525,289.</b>
News/PSA	1,001.9	372	5,716.
Interviews/Talk	102.6	41	777.
Other	234.8	386	1,110.
<b>TOTAL RADIO</b>	<b>1,339.3</b>	<b>605</b>	<b>7,603.</b>
TV News	160.0	3	300.
Other	244.5	16	613.
<b>TOTAL TV</b>	<b>394.5</b>	<b>19</b>	<b>913.</b>
<b>ALL MEDIA GRAND TOTAL</b>	<b>11,685.7</b>	<b>889</b>	<b>533,805.</b>

\* All figures--except for Coastal Living--are based on "actual" estimates given by Sea Grant specialists. Figure for Coastal Living represents "potential" audience, that is 38 articles sent to 75 newspapers having potential circulation of 6.7 million for a total potential reach of 509,200. This estimate probably is low since circulation of Coastal Living could potentially run as high as 10.5 million.



Coastlines, our "stand-by" for reaching coastal audiences on a statewide basis, was received by an average of 3,500 subscribers. Articles were provided by 12 specialists, 2 program coordinators, two campus researchers, and two Albany staff.

Regional Newsletters. The foci of our five regional newsletters produced by specialists included plant management, commercial fishing, waterfront development, marina operations and marine education. Circulation ranged from 125 to 1,100 subscribers for a total of 1,860 subscribers. Altogether, 30 issues were mailed.

External Newsletters. Five specialists reported having 26 articles in 8 newsletters published by local and state agencies, and Cooperative Extension. This activity represents a relatively new channel of communications and is estimated to have reached approximately 21,500 subscribers.

Magazines. Three staff members had four articles published in regional and national magazines having a combined circulation of 220,300. Magazines in which articles appeared were: National Fisherman, Today's Education, The Conservationist, and Aquaculture Magazine. The magazine market can be an effective mechanism for reaching specialized audiences.

Newspapers continued to provide a major outlet for information about Sea Grant activities conducted by specialists. Six specialists released information to approximately 20 newspapers on a regular basis. One specialist is responsible for a series of by-lined, biweekly articles. One consequence of working closely with newspapers was an increase in the number of articles by coastal newspaper staff themselves.

Coastal Living. The newest communication effort of the extension program is Coastal Living, a biannual series of articles oriented toward outdoor recreation, health, real estate, business and food. Specific topics in Coastal Living were: coastal erosion, oil spills, boating and water safety, sportfishing, the use of fish, and audio-visual materials. Coastal Living was sent to 18 county extension offices, 8 Sea Grant offices, three broadcast specialists, and 75 newspapers having a circulation of 6.7 million readers. Judging from those editors, Sea Grant and other extension staff who helped evaluate Coastal Living, the materials have been favorably received as providing informative, attractive, useful, timely, and easy-to-read materials.

Internal Publications. Formal publications written by Sea Grant specialists during 1981 included: Promoting Coastal Tourism Through Vacation Packages, Property Stewardship - Getting Involved in Community Development, Lake Ontario's Recreational Climate, Equipment Protection Through Oil Analysis.

Broadcast Media, representing radio and television, is more difficult to evaluate than print media because of incomplete information on listeners and viewers. Consequently, it must be stressed that figures given here represent a low estimate. Compared to previous years, radio and television are being used more often. For example, in 1981, seven specialists reported working with 9 television stations, resulting in 19 TV features. In regard to radio, the most frequent usage occurs along the Great Lakes where five specialists reported submitting 218 items to stations in Buffalo, Rochester, Fredonia, Jamestown, Dunkirk, Lancaster, Potsdam. Four interviews conducted by Cornell's Consumer News Service on sport fishing and boat safety were picked up by 194 stations, reaching 41,700 listeners. In



New York City, radio stations featured Sea Grant on approximately 9 different occasions, and WADO, a Spanish station, on three occasions.

Communication support for specialists continued in 1981. Two specialists received orientation on the use of print and broadcast media. Seven specialists received support on eight projects including editing and production of the following materials: 1 fact sheet; 5 manuscripts for publication in magazines; 1 pamphlet on erosion control; 1 slide/tape program on oil analysis, 1 PSA on oil spill emergencies. Materials produced in support of the entire program included: a revision of Discover Sea Grant pamphlet; display boards for Coastlines, a display for Coastal Living, a revised Discover Sea Grant slide script, a news release on the tour of 15 legislators to fish processing facilities in New England.

In terms of distributing Sea Grant materials, the following steps were taken:

- . Audio visual materials produced by Sea Grant are now listed for the first time in the Cornell University A/V Resource Catalog;
- . Sea Grant publications now are listed under a separate heading entitled "Coastal, Marine" in Cornell Cooperative Extension's Know-How publication catalog.

### 3. Program Leadership

The Program Coordinators conducted two regional workshops for field staff featuring Long Range Planning Techniques and Group Leadership Skills.

Staff maintenance activities were minimal since the only field staff vacancy that occurred was a planned study leave. Negotiations were completed for reassignment of a portion of one field position in early 1982 to cover the lower Hudson Valley with financial support from four county Cooperative Extension Associations.

Participation in regional programming was active throughout the year. The Great Lakes Program Coordinator cochaired with Ohio Sea Grant a Great Lakes Network workshop for marine educators (see youth education) and conducted sessions on program evaluation, toxic substances and social surveys for a Network Agents Workshop in Milwaukee. The Marine District Program Coordinator chaired the long range planning committee of NEMAS which reorganized and adopted new mechanisms for program development and sponsorship. He also assured New York's involvement in Mid-Atlantic activities including a conference on artificial reefs, an exchange of marine hydraulics experts and fishing gear demonstrations.

The Program Leader participated in the Hawaii Sea Grant site visit.



## YOUR INVITATION

Creating and strengthening links between coastal research and other information sources and persons who need and can use that knowledge is a basic role of the Sea Grant Extension Program in New York State. If you would like to learn more about planned educational programs to meet emerging needs, request a copy of the "Sea Grant Situation Statement and Program Plan" from the sources identified below. Likewise, if you are interested in learning more about Sea Grant Extension activities, a subscription to a quarterly newsletter called Coastlines is available at no charge to New York State residents. We invite you to get involved in Sea Grant's future by contacting Sea Grant Extension Specialists located in your area to learn more about upcoming educational programs which may benefit you, your business or community!

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