

COASTLINES

New York Sea Grant Institute

Volume 19 Number 1

Spring/Summer 1989

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SPORTFISHING:

A BILLION \$ PLUS TO DOWNSTATE ECONOMY

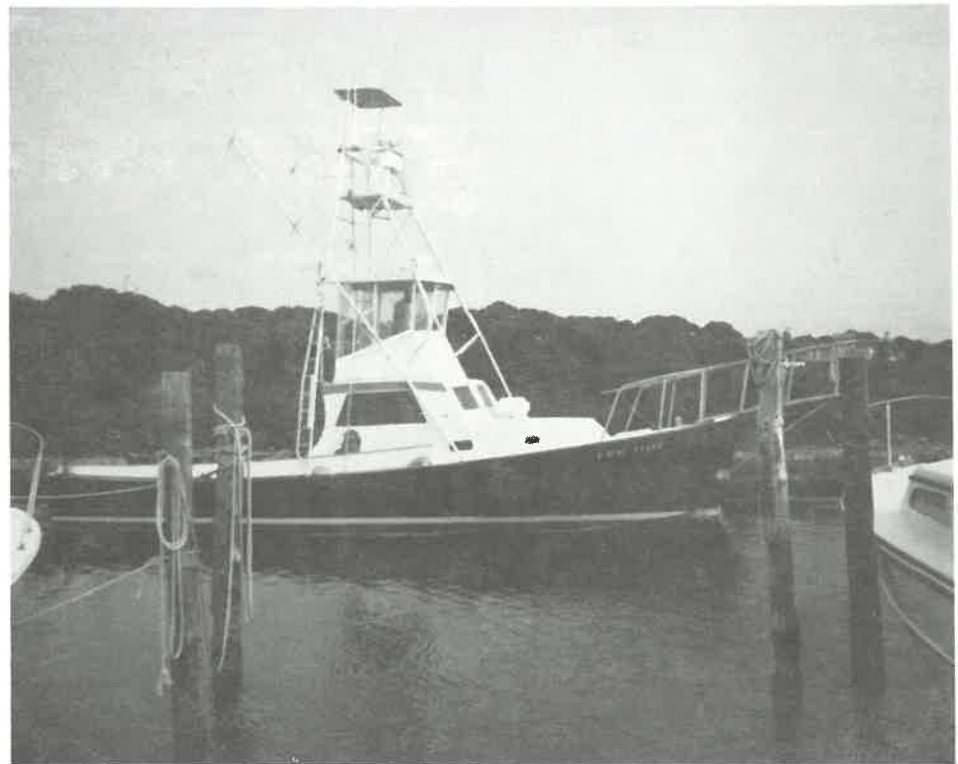


Photo by James R. Kahn

Recreational saltwater fishing in the downstate region of New York contributes more than a billion dollars annually to the economy, and when the economic ripple effect is included, that figure soars to over \$4 billion.

This ripple effect, or multiplier, is used because for every dollar spent on recreational fishing, the total effect on the region's economy is estimated to be two to three dollars.

Continued on Page 2

This was the conclusion of James R. Kahn, Associate Professor in the Department of Economics, SUNY at Binghamton, in his recently completed study on the Economic Value of Long Island Saltwater Recreational Fishing.

The three-year study, funded by the New York Sea Grant Institute and the New York State Department of Environmental Conservation, along with the Association of Marine Industries, and the New York Sportfishing Federation, measured direct expenditures made by recreational fishermen on food, bait, fuel, party or charter boat fares, boating equipment, and fishing gear.

Two surveys were conducted for the study. The first was an "intercept" survey at marinas, piers, docks, and on charter boats, covering Long Island Sound, south shore bays, Peconic Bay, and the Atlantic Ocean. Over 4,500 fishermen were questioned about fishing expenditures, number of fishing trips, as well as the time of year and locations they fish, among other things.

The second was a random telephone survey covering some 1,300 residential households in New York City, Westchester, Rockland, Nassau, and Suffolk counties, to determine the total number of people who participate in recreational fishing. According to the survey, there are an estimated 1.2 million anglers in the downstate region, consisting of nearly 350,000 anglers on Long Island, and over 800,000 from New York City, Westchester, and Rockland counties. The telephone survey also determined that 49 percent fished primarily from private boats, which alone accounted for almost \$800 million in direct expenditures. Twenty-five percent of the anglers most frequently fished from the shore, dock,

or pier, while charter and party boat anglers each comprised roughly ten percent of the total. The survey also noted that Long Island Sound and the south shore bays are the region's two most popular fishing locations, each favored by 38 percent of the fishermen, followed by the Atlantic Ocean with 18 percent.

The three most sought after fish according to the study are bluefish, winter flounder, and fluke. Kahn also noted that a variety of factors may have "constrained" the level of fishing in the region, including the loss of access to fishing areas and a deterioration in water quality. "If these changes

had not taken place, the level of fishing activity and economic contribution of the fishery might have been even higher," he reported.

To receive a complete copy of the study, contact the Communication Office of the New York Sea Grant Institute, Dutchess Hall, SUNY at Stony Brook, Stony Brook, NY 11794-5001.

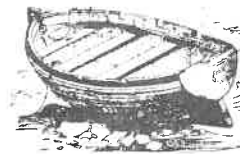
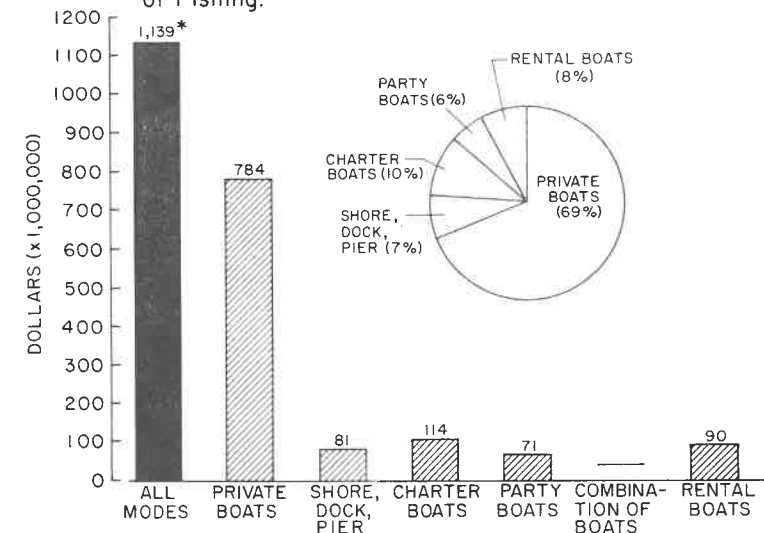
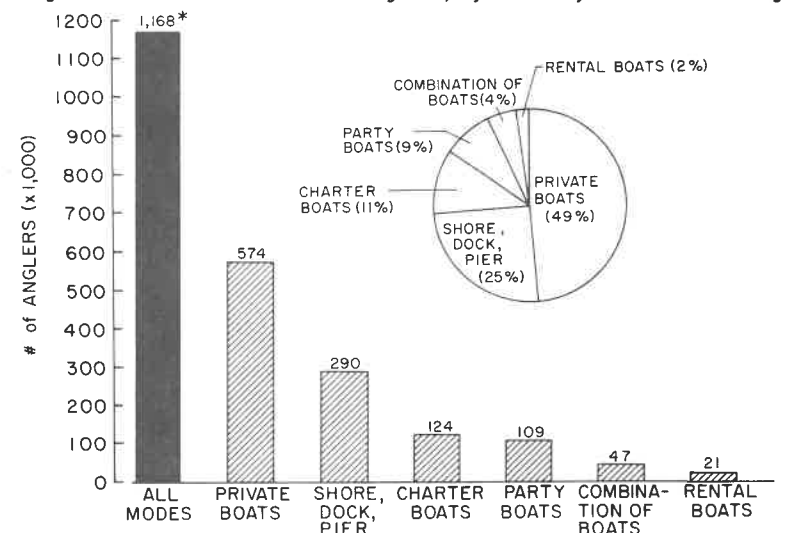


Figure 5 - Total Annual Expenditures (Mean Estimates), by Mode of Fishing.



* NOTE: The dollar values associated with the different modes do not add to the total for all modes due to rounding error.

Figure 2 - Total Number of Anglers, by Primary Mode of Fishing.



* NOTE: The numbers of anglers associated with the different modes do not add to the total for all modes due to rounding error.



Associate Professor James R. Kahn

Motion picture great Katherine Hepburn is carrying her fight to protect the environment to television in a new public service announcement calling on the public to support the cleanup of the Long Island Sound.

The 30-second spot was produced by the New York Sea Grant Extension Program in cooperation with the Connecticut Sea Grant Marine Advisory Program and Northern Light Productions. The Sea Grant Programs are responsible for enlisting public participation, education, and support in efforts to cleanup the Sound. This program is funded by the federal Environmental Protection Agency.

The Long Island Sound is an estuary, a place where saltwater and freshwater meet, located between Connecticut and Long Island, N.Y. It is in a densely populated area where some 15 million people live within 15 miles of the sound's shores.

Since 1985, when a six-year study began, researchers have found that the Sound has been under great environmental stress, from waste treatment

plants; groundwater runoff of pesticides, fertilizers, and human wastes; the buildup of heavy metals in the sediment beneath the water; and other factors that have produced a potentially harmful impact on this waterway's ecosystem.

Researchers say that without a well-developed management plan that is supported by the public, the quality of life will diminish substantially for everyone in the region—a major concern for the millions of boaters, fishermen, swimmers, and others for whom the Sound is a major recreational and commercial resource.

The tape rolls. A tranquil travelogue-like view of the Sound spreads out before us.

"Beautiful, isn't it," the unmistakable voice says.

"I've lived by Long Island Sound all my life. I've swum in its waters, enjoyed its seafood, and walked along its beaches"...

"But now, lets face facts, Long Island Sound is polluted with our wastes. If we continue to abuse this body of



Katherine Hepburn

water that we love, our Sound will be silenced...

"This is Katherine Hepburn. SPEAK UP! MAKE YOUR VOICES HEARD!" The voice trails off. Fade to black. What can we do?

To find out more about the Long Island Sound or how you can get involved, contact: Melissa Beristain, New York Sea Grant Extension Program, (516) 632-8737 or Kathy Rhodes, Connecticut Sea Grant Advisory Service, (203) 789-7865.

CITY KIDS LEARN TO CATCH FISH



Master Angler Bill Fink, at left, teaching the finer points of baiting a hook. Photo Courtesy of Bill Fink

Over 100 New York City 4-H club members, leaders, newly graduated Master Anglers, and New York State Marine Education Association members boarded the Amberjack out of Sheephead Bay one day last spring for a day's fishing. This was the very first fishing trip that brought 4-H kids and Master Anglers together. The Master

Angler program, sponsored by the 4-H Youth Development component of Cornell University Cooperative Extension, was the brainchild of Bill Fink, 4-H Science Specialist.

Captain Fred Ardolino of the Amberjack gently eased his big boat away from the dock at 7 a.m. and the trip began! Due to heavy fog, it was slow

going, but the fishing grounds were eventually reached.

Masters Anglers paired up with 4-H kids, patiently helped them bait their hooks, and showed them how to let the line out "real slow." Of course, a few birds' nests cropped up anyhow, but these were straightened out and in a moment the line were being hauled on board. For most of the kids this was the first fishing trip, and the yells of excitement when they landed a fish must have been heard on nearby boats.

When small fish were caught, they were released unharmed under the watchful eyes of the Master Anglers. Later, on the ride back, many of the Master Anglers helped the kids and their leaders clean and fillet the catch.

This first trip was a resounding success by all standards, and even the few kids who were seasick asked when they landed, "When are we going again?"

If you would like further information about the New York City Master Angler program, please contact:

Bill Fink
Extension Associate
4-H Science Specialist
Cornell Cooperative Extension
1360 Fulton Street
Brooklyn, NY 11216
(718) 230-3221.

TURNING FISH GUTS INTO GOLD . . . HUM??

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So what do you do with two million pounds of fish waste? If you are smart, you give it to New York Sea Grant and turn it into MONEY.

That was the idea behind the project initiated by Dave White, Great Lakes coordinator for New York Sea Grant Extension Program, with the support and cooperation of Dr. Joe Regenstein, Department of Poultry and Avian Sciences, Cornell University, and Thomas Richard, senior research support specialist, Department of Agricultural and Biological Engineering, Cornell University. The three specialists have set up a unique demonstration project to deal with this messy, and costly, waste disposal problem.

Under New York State law, it is illegal to "discard any fish carcass into the freshwaters of the state within 100 feet of shore." To complicate matters, disposal of this fish waste is further regulated because of PCB and mirex contamination.

Because of the contaminants and fat content of the fish, the only legally viable methods of disposal are landfilling, land spreading, and treatment in a sewage treatment plant.

But even these are not without their problems. Waste treatment in most lake front communities is typically geared to handling residential waste. Landfilling capacity is currently under careful scrutiny for its ability to meet demand, and land spreading is being done only on a limited basis because of questionable cost/benefit ratios.



Dave White, Great Lakes Coordinator, spreading out the top layer of peat moss.

For those people providing fish cleaning services at small marinas and sports stores, there was a clear need to find a cost-effective method of disposal.

White, Regenstein, and Richard have undertaken a demonstration project to determine if composting of fish waste could work as a disposal alternative. They hope to develop a cost-effective mixture of fish waste and peat moss and method in which to make an economically viable product, with contaminant levels acceptable for horticultural and agricultural use.

Working in cooperation with a private marina and sports store operator, the project was started. All materials (except for the fish guts) and technical expertise were supplied by the project team, with each business providing personnel who were responsible for the construction of the compost piles.

With approval from the Department of Environmental Conservation, the experimental project began last August. To reflect local conditions and user demands, two piles were con-

Continued on Page 5

FISH GUTS CONTINUED:

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structed at each location using different confinement structures and compost mixtures. The structures were 4 feet high, 5 feet wide, and 16 feet long.

The first enclosure consisted of six wooden fence posts and 24 boards measuring 1" x 5" x 8". The size of the structure was determined by reviewing the projected needs of the location, quantity of waste produced, and composting processes. The second structure had the same dimensions but was built using six metal fence posts and 32 feet of 1/2 inch wire fence.

Each structure had a six-inch base of gravel and eight, five-foot drainage pipes laid perpendicular to provide bottom aeration during the composting process. A six-inch layer of peat moss was then put down as a base for the pile.

An alternating layered approach was used in setting up the compost pile, building six inches of fish waste, then six inches of peat moss. To speed the process, a commercial compost starter was added, along with water, to each layer of waste. The peat moss also helped to eliminate the problems of odor and rodents.

By September, the first pile was completed, containing about 5,000 pounds of fish waste and using 36 six-cubic-foot bails of peat moss. This was significantly more than expected, and resulted in an elevated cost of operation.

In an effort to reduce this cost, the second pile was constructed utilizing a base of gravel, covered with wood chips, with the fish and the peat moss mixed together. Though this pile was only half constructed at the end of the season, the use of peat moss on a percentage basis was cut in half, while still allowing for the necessary composting to occur. The use of peat moss was again important in eliminating odor and rodent infestation.

Overall, the project was considered a success. Although it is a messy job and would be time consuming for a small family-run business, both piles composted well. The cost of the first pile was \$510. The second was almost \$200 cheaper, primarily because only half as much peat moss was used.

Other findings were:

*The wood confinement structure maintained its integrity and provided a more esthetically pleasing pile.

*Peat moss is effective as a composting agent for solid fish waste.

*The cost of using peat moss may be prohibitive pending market identification.

*The use of wood chips to supplement the peat moss is effective when used as a buffer agent, not a direct mix.

*The process is messy and time consuming for small business.

*If the chemical contaminants (PCB and mirex contained in the fish waste) are not an issue, a marketable product can then be produced. Depending upon the final costs, such a product could prove to be an additional source of income.

Anyone who would like further information about this study should contact: David White, New York Sea Grant Extension Program, SUC at Oswego, Oswego, NY 13126.

Editor's note: According to Dave White, ongoing analysis of the compost from Lake Ontario fish for contamination levels will guide the future course of this project. However, it is clear that this process does work and that a marketable product may soon become a reality. A further update of this project will appear in the next issue of Coastlines.

SUSAN SPONAUGLE WINS 1989 KNAUSS FELLOWSHIP

Susan Sponaugle was been awarded the Dean John A. Knauss Marine Policy Fellowship for 1989, representing New York State. The award is sponsored by the National Oceanic and Atmospheric Administration's National Sea Grant College Program.

The fellowship carries a \$30,000 award that is being used to send Sponaugle, to Washington, D.C., for one year. Since January, she has been learning about government processes and how policy is formulated concerning marine resources.

A graduate student from Rye Beach, New Hampshire, Sponaugle recently completed her masters in marine environmental sciences at the State University of New York at Stony Brook. From the age of three until she was 16 years old, Sponaugle, lived in Thailand. While there, she developed a keen interest in tropical coral reef systems. "I would like to make this the focus of my future research," Sponaugle explained. "Reefs are like rain forests. We are only learning how im-

portant they are to us now, as they are destroyed."

While in Washington, Sponaugle has been assigned to work with the House of Representatives Subcommittee on Fish and Wildlife Conservation and the Environment. "I think this experience will give me a better understanding of the legislative process, and will expose me to many of the political issues that affect scientific research," said Sponaugle.

"We are delighted with Ms. Sponaugle's award" exclaimed Dr. Robert Malouf, Director of New York's Sea Grant Program. "I know the experience she will gain in Washington will be invaluable."

Winners of the fellowship are selected competitively from around the country. Qualification criteria include academic ability, communications skills, and diversified academic experience.

For information about the 1990 Knauss Fellowships, see page 5 for details.

APPLICATIONS NOW AVAILABLE FOR 1990 KNAUSS FELLOWSHIPS

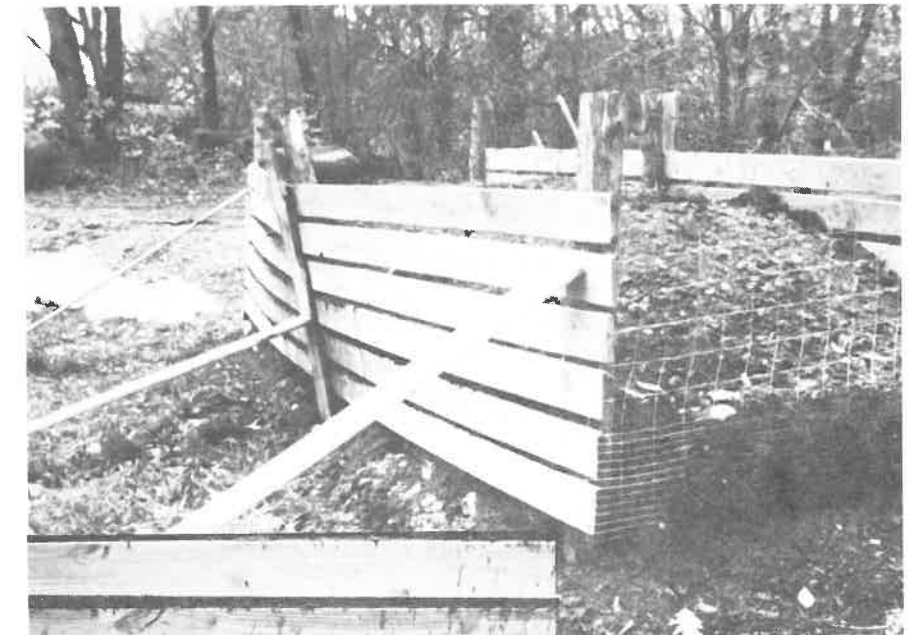
All students in New York State who are currently in a masters, doctoral, or professional program of a marine or Great Lakes related field are eligible to apply for the 1990 Dean John A. Knauss Marine Policy Fellowship.

An applicant must submit the following information:

- *A personal and academic resume.
- *Education and career goal statement of no more than two pages with an emphasis on the applicant's expectations of the fellowship experience.
- *A letter of endorsement from the applicant's major professor(s).
- *A copy of undergraduate and graduate student transcripts.

The Knauss fellow will receive a stipend of \$24,000 along with reasonable transportation and moving expenses consistent with university policy.

Applications must be received at the Institute's office no later than September 8, 1989. For further information, please contact Ms. Ruth Tompkins at (516) 632-6905.



TOP PHOTO: Wooden compost structure was 4' high, 5' wide and 16' long.



INSET PHOTO: Each structure had a 6" base of gravel and eight, 5" drainage pipes to provide aeration.



Susan Sponaugle

FROM THE DIRECTOR'S CHAIR...

By Robert Malouf

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As a species we have shown a remarkable capacity to find new and interesting ways to abuse our environment. Who would have thought, for example, that we could inadvertently find a way to bore holes in the ozone layer that protects us from the sun's ultraviolet rays? Until recently, who could have imagined that our use of fossil fuels would eventually lead to global climate shifts, bringing with them the threat of drought and the almost incomprehensible specter of rising sea levels? How many of us really believed that we were capable of exhausting the natural resources of our oceans, tainting them with a bewildering variety of exotic chemicals, and fouling our inland waters and seashores with the residues of a throw-away society? But the facts speak for themselves. The environmental impacts of our own ignorance and shortsightedness are painfully evident.

Most of us think of ourselves as enlightened, environmentally aware, and concerned about the health of the world ecosystem. We shake our heads in disbelief and disgust, and we wonder how things could get so bad. Awareness and concern are laudable, and we might even find a little comfort in the belief that more and more of us recognize that our planet is in trouble. But, the problems seem enormous, and the decay of our environment appears to be as inevitable as population growth. After all, anything called "global" must be too large for any one person to effect. Still, we ask ourselves, what can we do as individuals, to reverse the trends, and to make the environment better for ourselves and for those who will someday take our places?

The answers are not simple, but the key lies in our caring. Ultimately, the solutions to environmental degradation can be found in our own actions. We are the ones who are driving the cars, buying the plastics, and doing all of those things that created the problems in the first place. By changing our priorities and our behavior, we are the only ones who can solve them. We never speak more loudly than when we make choices in the way we spend our money. If we demand environmentally benign products of all kinds, and if our demands are firm, consistent, and reflected in every purchase decision that we make, we will be heard, and we will make a difference.

What does all this have to do with New York Sea Grant? What is Sea Grant doing to address the problem of environmental degradation in our



Robert Malouf

ULTIMATELY, THE SOLUTIONS TO ENVIRONMENTAL DEGRADATION CAN BE FOUND IN OUR OWN ACTIONS.....

marine and Great Lakes waters? Sea Grant's mission is to develop and sustain programs of 1) research, 2) extension, and 3) education leading toward the wise utilization and conservation of our marine and Great Lakes resources.

New York Sea Grant funds over \$1 million in research each year. Many of the research projects that we support provide new insights into the complexities of our coastal environments and address specific pollution-related questions. For example, our currently funded projects include a study of the dispersal of floatable wastes in the New York Bight; two studies of toxic chemicals in Great Lakes fish; a study of the effects of heavy metal pollutants on micro-zooplankton in local estuaries; studies of atmospheric sources of trace metals in Long Island Sound and of the volatilizing of pollutants from surface waters into the atmosphere; and a study of communication techniques and the perception of risk associated with consuming fish caught in the Great Lakes.

These and other studies represent a commitment on our part to invest a substantial portion of our research dollars in work that leads to enhanced understanding of sources, consequences, and methods of mitigating pollution in our coastal waters.

One of the many functions of our Extension Program is to serve as an information resource for private individuals and citizens' groups, and for environmental agencies and researchers. Extension is the conduit through which new information passes to those who can make use of it in addressing coastal problems and opportunities. For example, in collaboration with Connecticut Sea Grant, New York's Sea Grant Extension Program coordinates the public participation component of the E.P.A.'s on going Long Island Sound Study. This effort, using a wide variety of tools that include fact sheets, public presentations, press releases, and briefings of elected and regulatory officials, has significantly improved public awareness of the problems faced in maintaining Long Island Sound as a living resource. Consequently, perhaps the most important product of the Long Island Sound Study will be an informed and determined Long Island Sound constituency that is prepared to continue its efforts long after the study itself is completed.

Sea Grant's education effort includes a variety of programs. Our Sea Grant Scholarships, for example, provide graduate students working on marine and Great Lakes environmental issues throughout the state. These young scientists move into positions in academia, government, and business, and they carry with them knowledge and an awareness of the importance and vulnerability of our environment. Sea Grant's Extension Program provides information and materials to educators, thus reaching thousands of students, far more than they could reach if they were to make presentations directly to the students.

These are but a few examples of the many ways that Sea Grant is involved in environmental issues. Future issues of *Coastlines* will describe many of our efforts in more detail. We care about the environment, and we know that you share our concerns. By working together and through research and awareness, we can make a difference.



EXTENSION NOTES...

By Michael Voiland

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Michael Voiland

To those of you who have dealt closely with any of New York Sea Grant's extension specialists, it should be obvious that, first and foremost, these "agents in hip boots" are educators. Out and about along the shore or on the university campus, the specialists are, before all else, teachers--gathering, and interpreting factual information, and then delivering it to individuals, groups, agencies, and businesses. The hoped-for end result is a public having a finer understanding of the value, nature, and use of our coastal resources, and then using this knowledge to bring about the wisest and most beneficial use, development, or conservation of the coastal environment.

Within this educational role, however, specialists are frequently called upon to stimulate research interest, to demonstrate some innovative technology, or to generate needed and new information themselves. In these instances, the specialists assume the role of researcher or, at least, research collaborators. In New York, Sea Grant has traditionally encouraged small-scale, inexpensive, but high-impact applied research efforts that address pressing information needs and help support extension programming.

Over the years, applied research in support of extension efforts in New York has taken different forms, varying in the depth and nature of specialist involvement, the degree of faculty collaboration, the funding source and, of course, the cost (most applied research projects, however, range between \$1,000 and \$3,000). A quick review of the variety of extension-focused, practical research initiatives include:

*Institute "Mini-grants"
Since the early days of Sea Grant in New York State, the Institute has been willing to provide funds for--when discretionary dollars are available--quick-response grants, or "mini-grants" to

university faculty who would address a critical information need identified by an extension specialist. These grants are "extension-driven," in that the specialist must articulate the problem and information need, must help to identify the faculty researcher willing and capable to investigate the problem, and must show how the resulting information will be used in an extension program.

*Institute Extension Scholarships
These special Institute scholarships provide stipend support to graduate students in the conduct of degree-related research that may have immediate use and impact in an emerging extension programming area. Again, these scholarships are extension initiated. The specialist must identify the research need, help locate faculty/student interest and expertise, and must indicate how the research results would be integrated into or be beneficial to extension programming. As with mini-grants, scholarship availability is contingent upon Institute funds being available.

IN NY, SEA GRANT HAS ENCOURAGED SMALL-SCALE, INEXPENSIVE, BUT HIGH-IMPACT APPLIED RESEARCH.....

*Extension-supported Research
These small research efforts are directly initiated and conducted by the specialists themselves, and are supported out of field office operational budgets. For example, on the Great Lakes, research surveys into the social and economic effects of fishing derbies on Lakes Erie and Ontario have been conducted via this approach, while on Long Island, a boat pump-out facility use survey was carried out directly by a specialist who saw the urgent need for such information by government agencies, the media, and marina operators.

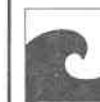
*CALS Applied Research Initiative
The New York State College of Agriculture and Life Sciences (CALS) at Cornell University has provided annual support for applied research that is jointly carried out by Sea Grant extension specialists and members of the CALS faculty. Since 1986, these pro-

jects have explored such matters as reducing PCB levels in bluefish through trimming and cooking practices; profiling the home-based lodging industry in the state; using vegetative approaches to reducing shore-erosion; documenting the growth of walleye stocked in Lake Ontario embayments; and disposing of fish waste through composting. (See article page 4)

*Outside Support
On occasion, outside funds are obtained by Extension staff to conduct research of mutual interest to the funding source of importance to extension programming. For example, Suffolk County Community College funded a study that looked into the feasibility of creating a small service business institute at the College. In another instance, charterboat associations on Lake Ontario contributed funds in support of a charter industry baseline survey conducted in 1985.

These are some of the different ways that Sea Grant has sought to gain new information--inexpensively and in a timely manner--that is important to local shoreline audiences and to the development of high quality extension educational programs.

Until next time



COASTLINES
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Communicator
New York Sea Grant Institute
Dutchess Hall
State University of New York
Stony Brook, NY 11794-5001

Editor:
Avery Klauber

Contributors:
Sharon O'Donovan
Dave White
Robert Malouf
Mark Malchoff
Bill Fink
Susan Sponaugle
Michael Voiland
Kurt Byers
Melissa Beristain
Douglas Shneider



LOWERING THE BOOM:
These 4 workers, along with some 4,000 others, fight to contain the spread of more than 11 million gallons of crude oil.

*Photo Courtesy of
Roy M. Corral
(c) 1989*

The following dispatch was sent out over the Sea Grant SGNET communication network in early May:

Prince William Sound, Alaska-- Within 12 hours after the tragic spill of the 240,000 barrels of North Slope crude oil into Prince William Sound, the Alaska Sea Grant College Program, together with the Alaska Marine Advisory Program, responded to the emergency.

Requests for immediate research personnel and operating funds were first made by Rick Steiner, Marine Advisory Program Agent for Prince William Sound. Ronald Dearborn, Director of the Alaska Sea Grant College Program responded quickly, calling a meeting with University of Alaska Institute of Marine Science faculty to discuss appropriate research responses.

Within 24 hours after the spill, a team of scientists and technicians were in the

sound, collecting samples of uncontaminated shellfish to use as a control to measure contamination rates as the oil spill spread across the sound and eventually into the Gulf of Alaska.

Over the next several days, teams of researchers, supported by Sea Grant funds, National Science Foundation grants, and emergency appropriations from the University of Alaska Fairbanks, headed to the sound. A team of 14 researchers conducted various experiments from aboard the University of Alaska's operated R/V Alpha Helix research vessel. Concern over the pending release of hatchery-reared pink salmon fry and the emergence of wild salmon from intertidal areas and freshwater tributaries of the sound drew

much of the immediate scientific response.

Much credit for Sea Grant/MAP response to the spill has to be given to Rick Steiner of the Marine Advisory Program in Prince William Sound. In the intense confusion, arguments and general state of disarray of federal, state, and oil company efforts to deal with the spill, Steiner provided foresight, vision, and planning to fishermen who took it upon themselves to begin cleaning the oil from the waters of the sound. Steiner rallied fishermen to action in a heroic and successful effort to combat the spread of the spill into crucial hatchery areas. He was instrumental in obtaining oil containment booms and served as an advisor to area fishing associations.



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Dutchess Hall
State University of New York at Stony Brook
Stony Brook, New York 11794-5001

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