

COASTLINES

New York Sea Grant Institute

Volume 21 Number 1-2

Spring/Summer 1991

INSIDE THIS ISSUE . . .

- NYSG 20TH ANNIVERSARY 1
- CITIZENS AIR VIEWS AT LIS MEETING 3
- HOW SUCCESSFUL WAS MRPC'S SEAFOOD QUALITY PROGRAM? 5
- SEA GRANT HELPS MARINA OPERATORS GET PERMITS TO SPRAY ANTIFOULING MATERIALS 5
- SOUND GARDENING: SAVING OUR WATER RESOURCES 6
- FIGHTING Z-MUSSELS WITH INFO 7
- ARE YOU OF "SOUND" MIND? TAKE THE LI SOUND TEST 7
- PUBS, PUBS AND MORE PUBS 8
- OWASCO LAKE QUARANTINE 9
- NEW VIDEO ON BAYMEN 9
- KNAUSS FELLOWSHIP APPLICATIONS 11
- BECOME A SUBSCRIBER 12

UPDATE

- ZEBRA MUSSEL FOUND IN HUDSON RIVER 4

NY SEA GRANT'S 20th ANNIVERSARY



MAKING SCIENCE USER-FRIENDLY FOR 20 YEARS — NY Sea Grant Combines Research and Public Education

Information begins to flood into New York Sea Grant's Zebra Mussel Information Clearinghouse in Brockport, NY about possible new zebra mussel sightings in the Great Lakes.

Using "quick response" New York Sea Grant funding, Dr. Howard Riessen from SUNY College at Buffalo undertakes a study in Lake Erie to determine the spread of veligers (microscopic young zebra mussels) and their impact on the lake's ecosystem.

In the meantime, at the Institute office in Stony Brook, Long Island, the Sea Grant management team reviews numerous additional research proposals designed to

These are just two examples of NY Sea Grant's research.



Lifting fry traps to check for the presence of naturally produced lake trout fry in Lake Ontario. Photo courtesy Chuck Krueger.



A green crab (*Carcinus maenas*) consuming small scallops in a lab experiment designed to test the refuge value of eelgrass. Photo by George Rowland.



Youth education is an important part of NY Sea Grant's Extension program.

20th Anniversary

Continued from Page 1

provide a clearer understanding about this worrisome mollusk, and perhaps uncover ways of forestalling its spread from the Great Lakes to the New York City reservoir system and beyond.

Down the hall, the communications team, using information derived from the Clearinghouse and extension specialists, puts the finishing touches on a zebra mussel booklet for boaters, marina operators and local government agencies.

Some 500 miles north in Oswego, extension and communications staff huddle in a studio editing a 13-minute "how-to" video to help boaters and marina operators inspect for mussels and remove them from boat hulls and engine intake systems.

Other marine issues need attention, too. Work continues at the Sea Grant Extension office at Stony Brook, where an extension specialist develops and refines a seafood quality assurance pilot program with Long Island and New York City retailers to help ensure that the public can get the freshest seafood possible.

In the next office, New York Sea Grant's public participation coordinator for the Long Island Sound Study schedules a series of

regional public meetings dealing with the problem of hypoxia (very low levels of dissolved oxygen) in the western end of the Sound.

In a large conference room in SUNY Stony Brook's Marine Sciences Research Center, an extension specialist working with coastal planners and researchers explores ways of preserving Long Island's eroding beachfront, an estimated billion-dollar-a-year downstate recreational treasure.

Out east in Riverhead, Sea Grant Extension's marine district coordinator plans a meeting of public school educators to explore and develop new ways of teaching marine sciences to youngsters.

And up along the banks of Lake Erie, an extension specialist teaches a group of volunteers lessons in ecology for them to pass along to youngsters as part of SAREP (Sportfishing and Aquatic Resources Education Program), introducing them to the wonders of the aquatic environment.

Today, New York Sea Grant is doing all this and more. At public and private academic institutions throughout the state, talented Sea Grant funded scientists carry on top-caliber research relating to a multitude of coastal issues.

For twenty years, since 1971, New York Sea Grant researchers, administrators, ex-

tension specialists and communicators have helped New Yorkers to better conserve and use the State's priceless coastal resources. A cooperative program of the State University of New York and Cornell University and part of a higher education system covering over 65 campuses statewide, New York Sea Grant receives state, federal and private funds totaling close to \$3 million annually for coastal and Great Lakes research, Cooperative Extension outreach and education, and public communications.

As part of a national network of 29 programs established through an act of Congress in 1966, the Sea Grant concept, operating under the National Oceanic and Atmospheric Administration (NOAA), was fashioned after the Land Grant College system that has helped to protect and develop our valuable land-based and agricultural resources for more than a century.

"Sea Grant is such a practical, logical concept — but at the same time remains unique in the realm of publicly funded programming," remarks Mike Voiland, New York Sea Grant's acting director. "What is even more interesting is that in 1987, roughly \$842 million was saved or generated by

Continued on Page 3

20th Anniversary

Continued from Page 2

coastal residents and users as a result of Sea Grant activities nationwide, while the annual federal appropriation was just \$39 million. I think this is a clear measure of just how beneficial the Sea Grant concept has been nationally."

According to Voiland, because New York Sea Grant research investigates well-defined problems and issues relevant to our society, what we learn and discover can often be applied in a truly "hands-on" way. Current research covers three major program areas: marine-related technology and product development, fisheries and living resources management, and studies of coastal environmental processes.

Some of the research subject areas deal with the health benefits of omega-3 fatty acids (fish oils); pharmacological agents to help divers during decompression; new technologies in aquaculture (fish farming); potential new drugs from microorganisms; processes such as wave action, coastal ero-

zebra mussel Hudson River



The NY Sea Grant program provides up-to-date information to user groups, government, media, industry, and the general public.

sion and ocean currents; the impact of environmental contaminants; and the reproductive, dietary and migration habits of fish

important to both sport and commercial fisheries.

But science cannot progress without new scientists. To this end, since 1972, New York Sea Grant has provided over 500 graduate students with financial aid through its Sea Grant Scholars program. "Frequently, the graduate student is the primary data collector and the real 'eyes and ears' of the researcher," suggests Cornelia Schlenk, New York Sea Grant's assistant director. "We also recognize that these graduate students constitute one of Sea Grant's most important products. Many New York Sea Grant Scholars have gone on to highly successful careers in academia, government, and industry."

Whether through scientific research, extension outreach or communications from a Sea Grant sponsored conference, journal reprint, fact sheet, press release or video, the goal of New York Sea Grant has been to tap the research and educational expertise found at the university and use it to address our coastal and Great Lakes problems in a hands-on way. In so doing, New York Sea Grant looks to a future of promise in fulfilling its mission of "Bringing Science to the Shore" for the people of New York State.

CITIZENS AIR THEIR VIEWS AT LONG ISLAND SOUND MEETINGS

By Trent Schneider

Some 14 public meetings were held throughout the New York metropolitan area and Connecticut early this year to get public reactions to an Environmental Protection Agency (EPA) status report that recommended ways to manage the hypoxia or low dissolved oxygen problem in the Sound. According to the report, the nutrient nitrogen contributes directly to hypoxia, and nitrogen controls are urgently needed.

The EPA report, titled *Status Report and Interim Actions for Hypoxia Management*, calls for fixing the amount of nitrogen discharged from sewage treatment plants at its 1990 level. Previously, there had been no limit on the amount of nitrogen that could be discharged. This *No Net Increase Policy* sets a precedent against which overall re-

ductions in nitrogen can later be based.

The report also recommends that point sources of nitrogen, such as sewage treatment plants, be required to use the best available technology when they are built. In addition, the report suggests that all sewage treatment plants meet enforceable limits for secondary treatment as called for in the Federal Clean Air Act of 1972. And the report encourages facilities that have extra capacity to implement low-cost nitrogen removal.

For nonpoint sources of nitrogen such as rainwater runoff into the Sound, the report recommends implementing the States' nonpoint source and stormwater control plans. Additional recommendations include: supporting the effort to achieve the goals of the new Clean Air Act to reduce atmospheric nitrogen, investigating alter-

native technologies to control nitrogen or reduce hypoxia, and undertaking long-term monitoring to track the effectiveness of hypoxia management in the Sound.

During the public meetings, cost of the Sound's cleanup ranked as one of the most pressing issues. "Keeping costs as low as possible was seen as critical to the chances of the public supporting the final management plan," suggests Melissa Beristain, NY Sea Grant's public participation coordinator for the Long Island Sound Study. "The public wants less expensive, more easily implemented pollution control measures explored."

According to Beristain the hardest challenge for the Long Island Sound Study in

Continued on Page 4

NO DOUBT NOW! Zebra Mussels Confirmed in the Hudson River

As *Coastlines* goes to press, New York Sea Grant extension specialists have confirmed a sighting of zebra mussels in the Hudson River near the town of Catskill, New York, approximately 25 miles south of Albany.

The sighting was verified through microscopic examination by Dr. James Carlton, director of the Maritime Studies Program of Williams College, Mystic Seaport, Connecticut and Dr. Edward Mills, a Cornell fisheries researcher, as well as Sea Grant Extension Specialists Dave MacNeill and Charles O'Neill, both located at SUNY College at Brockport.

According to the investigators, there is no doubt that this is the first fully confirmed and verified sighting of zebra mussels in the Hudson River, and the first United States sighting of the mussel outside the Great Lakes drainage basin. The mussels were found on freshwater clam shells, rocks and driftwood in the vicinity of the Rip Van Winkle Bridge near the town of Catskill.

According to O'Neill, the Hudson River location where the zebra mussels were found is considered completely freshwater, making it unlikely that these could be the look-alike dark false mussels that were discovered early last win-

ter in the brackish waters of the lower Hudson.

Researchers believe that the mussel threatens to cause severe economic and ecological damage throughout North American surface waters, affecting utility and industrial facilities, public water supplies, sportfishing, tourism, boating and recreation, with projected costs to the Great Lakes alone running in the hundreds of millions of dollars.

Since the zebra mussel was first discovered in June 1988, carried to the Great Lakes in the freshwater ballast of international commercial ships, it has spread rapidly into and throughout the Lake Erie, becoming one of the dominant organisms in the western basin of Lake Erie, the western reaches of the Erie Canal, and the locks of the St. Lawrence Seaway in Massena, NY. It has also been found in Oneida Lake, NY, the largest inland lake to report zebra mussels thus far.

Because the mussels are able to attach themselves to any hard surface, they are easily transported on boat hulls and waterborne debris. In the juvenile form, larval mussels can be carried by birds and animals, engine intakes, live wells, bait buckets or bilges filled with zebra-mussel-infested water.

Zebra mussels also have the ability to reproduce in large numbers—each female can produce over 40,000 eggs per season, creating reef-like colonies of more than 700,000 per square meter. The mussels tend to congregate around the intake pipes of utility and water treatment plants and in other areas of flowing water, where they can cause considerable damage.

According to O'Neill, with the mussel now in the Hudson and poised to enter the Mississippi River drainage system south of Chicago, the "genie is out of the bottle."

While zebra mussels could impact inland waterways throughout most of North America, an immediate threat for downstate New York is the effect zebra mussels could have on the public water supply system serving some 10 million people. Without sufficient funding for monitoring and for studying control measures, scientists say they can only speculate on what might happen.

In the meantime, to find out what we do know about zebra mussels, contact Susan Grace Moore at New York Sea Grant's Zebra Mussel Information Clearinghouse, 250 Hartwell Hall, SUNY College at Brockport, Brockport NY 14420-2928.

Positive Results Cited in NY's Seafood Quality Pilot Program

A voluntary seafood quality assurance pilot program designed to maintain product wholesomeness was started last October, and is showing positive results, with 19 of the 20 retail store owners who took part saying that they want to continue refining the program this year.

Participating retailers also reported that by using this program they saved an estimated \$16,700 to \$19,700 worth of seafood products because equipment failure was detected early and the amount of spoilage was reduced.

Eighty-five percent of the retailers indicated that the program was useful to their business. Almost all made significant changes in their sanitation and product handling practices, and when surveyed, ninety-five percent termed the program a success.

While national debate continues over how and when a national program for seafood inspection might be implemented, the fledgling New York seafood industry marketing and promotion organization called the Marine Resources & Products Council (MRPC), with the technical assistance of New York Sea Grant and Cornell Cooperative Extension, has already made important strides on Long Island. (See *Coastlines*

Vol. 20, No. 2 for details.)

The pilot project's guidelines were reviewed by the National Marine Fisheries Service (NMFS) as it developed a national hazard analysis and critical control point (HACCP) prototype model for seafood retail stores, which will be tested this summer. Two of the 20 stores participating in New York's voluntary quality assurance program have volunteered to be test sites for this national HACCP (pronounced "hassup") model.

Roger Tollefsen, president of the MRPC, and owner of one of the 20 stores, has been asked to serve on a joint committee organized by the Food and Drug Administration (FDA) and the NMFS to help them develop and implement a national voluntary retail seafood inspection program.

In the meantime, the MRPC is looking to further refine the New York quality assurance program through 1991.

"We have been at the forefront of this effort," said Tollefsen, "and we want to maintain a leadership position in helping to



develop an effective national program." For more information about the quality assurance program, contact Ken Gall, extension specialist, New York Sea Grant, at (516) 632-8730.

Citizens Air Their Views

Continued from Page 3

the mind of the public is making sure the Federal Government provides financial assistance and that on the local level costs are distributed equitably.

Growth management and land use issues are also concerns revealed during the public hearings. Many people felt that without reasonable guidelines for future development, any gains in pollution abatement would be lost. Some also felt that the Study should have the authority to override local zoning decisions in the critical coastal zone, along with the need for increased wetlands protection and restoration.

Regarding *No Net Increase*, many citizens felt the States' plan to wait until 1992 to implement the policy robbed it of what little value it had. Others sought a more stringent policy that would have a greater impact on water quality.

Another common concern was that current levels of enforcement were inadequate. Others expressed frustration at the low funding levels of enforcement agencies, and were worried that pending budget cuts would further weaken enforcement efforts.

These public comments will be addressed by the Long Island Sound Study in the final management plan, which is expected to be completed by mid-1992. The final plan, called the *Comprehensive Conservation and*

Management Plan, will also address the other impairments studied in Long Island Sound, along with proposed cleanup and funding mechanisms to restore the Sound.

For more information about the LISS, copies of the *Status Report*, or questions about public reaction to the EPA recommendations, contact Trent Schneider or Melissa Beristain, New York Sea Grant Extension, 125 Nassau Hall, SUNY at Stony Brook, Stony Brook NY 11794-5002; telephone (516) 632-9216. In Connecticut, contact Chester Arnold, Connecticut Sea Grant Marine Advisory Program, 43 Marne Street, Hamden, CT 06514; telephone (203) 789-7865.

Training Courses for Pesticide Applicators Held



Over 120 commercial applicators of antifouling paints participated this spring in two separate training sessions arranged by New York Sea Grant in cooperation with

New York State's Department of Environmental Conservation (DEC).

Antifouling paints such as those containing tributyltin (TBT), used to prevent the attachment of aquatic plants and animals such as the zebra mussel to boats, are considered pesticides and are heavily regulated in New York State. Commercial applicators of these materials are required by law to attend a training course and pass a test in order to be certified by DEC to apply antifouling paints as a commercial business.

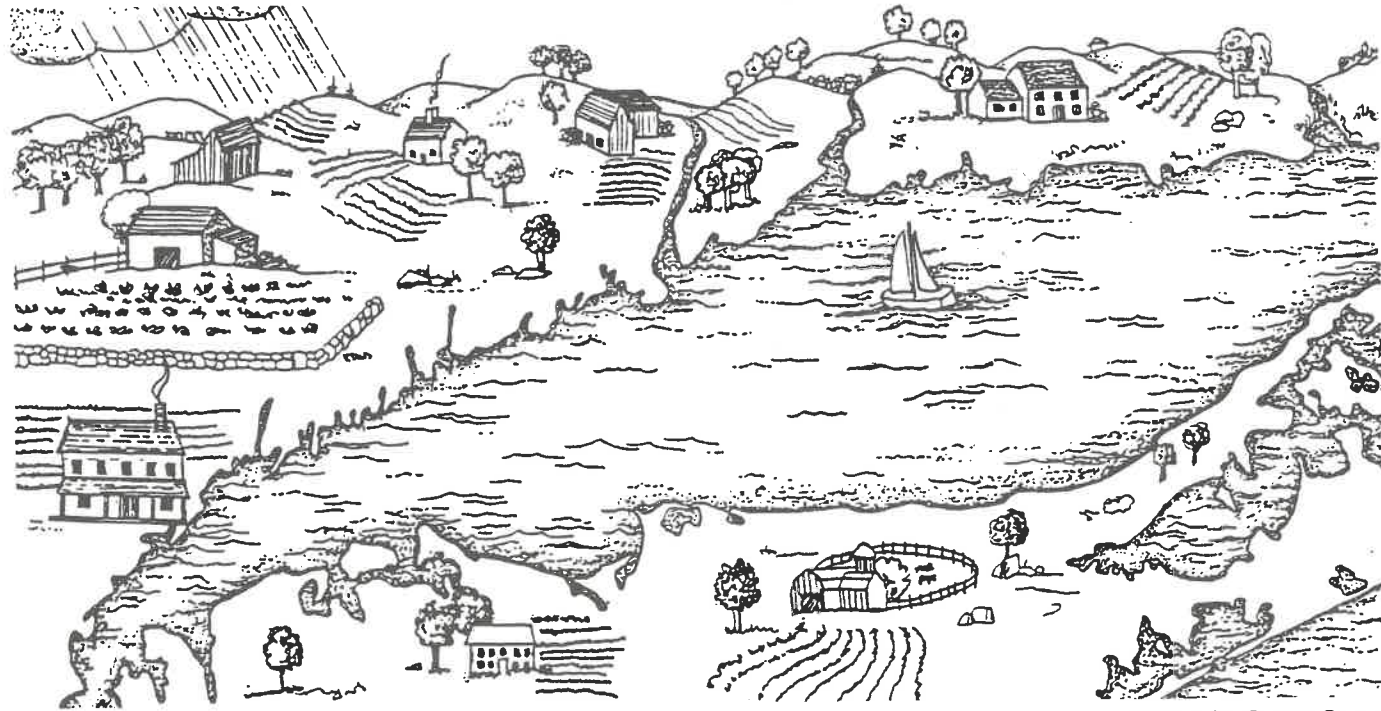
Mary R. Anderson, a Cornell Cooperative Extension agent in the Hudson Valley region, and David White, New York Sea

Grant's Great Lakes extension program coordinator, set up the two regional courses for marine industry personnel to help facilitate the required training and certification.

"Following our New York Marina Management Conference this spring in Syracuse, we had a golden opportunity to train many of the marina personnel who were already here for the conference," explained White. "Those who participated were able to become certified applicators, which proved to be a real convenience to everyone."

Further information on antifouling pesticide paints for aquatic use is available from your regional DEC office or Sea Grant Extension office.

Sound Gardening Practices Go Beyond Long Island Sound



Artwork by Susan Stone.

There are hundreds of thousands of homes with gardens and lawns in Connecticut and New York that can contribute to environmental problems in Long Island Sound. Each may contribute only a relatively small amount of eroded soil, pesticides and fertilizer to stormwater runoff. But when runoff waters ultimately reach the Sound, their combined effect is significant. Runoff from lawns and gardens adds to a sizable problem called nonpoint source pollution.

A new 10-part fact sheet series called *Sound Gardening*, produced by Sea Grant and Cooperative Extension Programs in New York and Connecticut, explores many beneficial and useful gardening practices that can help to save time and money in our gardens and lawns as well as help improve the quality of our streams, rivers, bays, ocean and groundwater.

In explaining how good gardening practices lead to good water quality practices, this series discusses:

- Better ways to deal with pest management by selecting appropriate plant varieties for your garden's environment,

by using alternatives to chemical pesticides and by having a greater awareness of when, during the season, pests arrive.

- Ways to reduce needless runoff by watering gardens infrequently but deeply and slowly so entire root zones are moistened.
- Methods to reduce or prevent erosion of soil, nutrients and chemicals through the proper placement of plants and structures.
- How to establish a low maintenance and disease-resistant lawn.
- Ways to enrich soil by using natural composting and mulching practices.
- How to keep soil healthy so that less pesticides, fertilizers, water and work are needed.
- Successful methods of fruit and vegetable gardening by planting locally

adapted, disease-resistant varieties of plants, shrubs and grasses, practicing good sanitation, rotation and mulching, and using row cover screening to minimize the need for pesticides.

- How to design an easy-to-maintain landscape that is a pleasure to view and retains the maximum amount of moisture, by using appropriate plants, porous walkways, terraces, retaining walls and xeriscaping (the application of drought-resistant plants in landscaping).

The complete set of 10 fact sheets is available for \$2.00, and can be ordered by contacting your county's Cornell Cooperative Extension office. In Suffolk: 246 Griffing Avenue, Riverhead NY 11901. In Nassau: 1425 Old Country Road, Plainview Complex, Building J, Plainview NY 11803. And in Westchester: 214 Central Avenue, White Plains NY 10606. The fact sheets are also available from New York Sea Grant 125 Nassau Hall, SUNY at Stony Brook Stony Brook NY 11794-5002.

NEW YORK SEA GRANT FIGHTING ZEBRA MUSSELS WITH INFORMATION

New York Sea Grant has produced a new zebra mussel booklet with a wallet-sized peel-off "Ident-a-card," and a "how to" video designed to help boaters and marina operators control the mussel's infestation and spread during the 1991 boating season.

The brochure, *Zebra Mussels: A 1991 Great Lakes Overview*, features a full color, peel-off "Zebra Mussel Watch Ident-a-card" on the front cover. The card will assist boaters, fishermen, harbor masters, government officials and the interested public in identifying the zebra mussel. The eight-page booklet provides an overview of the mussel's life history, a map showing its spread, and the current methods of control being used by industry, small businesses and individuals.

The 13-minute video, *Protecting Your Boat from Zebra Mussels*, provides detailed information to boat owners and marina operators on how to protect boat hulls and engine intakes from the potential impact of zebra mussels. Ways to slow the spread of zebra mussels into uninfested waterways are also discussed.

"As the zebra mussels continue to spread, boaters need to consider ways to protect their investment from the damage the mussels can cause," explains David White, New York Sea Grant's Great Lakes extension program coordinator. "This videotape pro-

vides an overview of the various ways boat owners can protect the underwater parts of their vessels and enjoy a mussel-free season."

Because the estimated cost of control and removal of zebra mussels has rapidly mounted, reaching hundreds of millions of dollars annually throughout the Great Lakes region, Sea Grant has sought to demonstrate the lowest-cost, easiest-to-follow methods that small businesses, individuals and boaters can use to deal with mussel colonization. Through these efforts, it is hoped that tourism, boating, sportfishing, and other industries will be able to effectively confront the mussel problem and minimize the economic harm mussels may cause to the region.

Individual copies of the Zebra Mussel Watch Ident-a-card and the booklet *Zebra Mussels: A 1991 Great Lakes Overview* are free. Multiple copies are \$.15 each. Multiple copies of just the Zebra Mussel Watch Ident-a-card are \$.05 each.

The how-to video, *Protecting Your Boat from Zebra Mussels* can be purchased in VHS format for \$10 per copy. It is available on loan from Cornell Cooperative Extension offices and public library systems in the Great Lakes counties, some marinas, and the New York Sea Grant office in Oswego.

ZEBRA MUSSELS: A 1991 GREAT LAKES OVERVIEW



- What are zebra mussels
- Current methods of control
- Who you can contact for help

Produced by
the Great Lakes
Sea Grant Network

To order the brochure, ident-a-card or videotape, or for additional information please write to: New York Sea Grant Communications, Swetman Hall, SUNY College at Oswego, Oswego NY 13126-3599. Or phone (315) 341-3042. To help expedite your multiple-copy order please enclose a check made payable to Cornell University.

For more specific information about zebra mussel research or detailed background information, please contact Susan Grace Moore at NY Sea Grant's Zebra Mussel Information Clearinghouse, 250 Hartwell Hall, SUNY College at Brockport, Brockport NY 14420-2928. Or call (716) 395-2516 ext. 2517.

Are You of Sound Mind? Long Island Sound, That Is!

If you think you are, try taking this short test. See just how Sound-smart you really are.

Question 1: Long Island Sound is called an estuary. By that we mean:

- A. A sea surrounded by land on three sides.
- B. A place where fresh and salt water mix.
- C. A body of water where wetlands are found.
- D. A body of water that has limited tidal action.

Question 2: When the term *hypoxia* is

- associated with Long Island Sound it means:
- A. A body of water with a muddy bottom.
 - B. A body of water containing limited plant growth.
 - C. The ability for aquatic plants to thrive in a body of water.
 - D. A very low level of dissolved oxygen in a body of water.

Question 3: True or False. The number and types of worms found in a sample of sediment help marine biologists determine the "health" of Long Island Sound.

Question 4: One important goal of the Long Island Sound Study is:

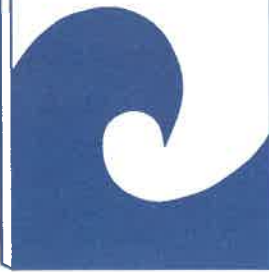
- A. Measuring the buildup of toxic wastes.
- B. Achieving close cooperation between all levels of government to restore and maintain the Sound.
- C. Setting limits on industrial and commercial growth.
- D. Developing methods to increase the stocks of fin and shellfish.

Question 5: True or False. One of the biggest problems facing Long Island Sound is inadequate sewage treatment plants.

How did you score?

(See page 8 for the answers.)

Sea Grant Pubs



Looking for Some Summer Reading? New Publications from New York Sea Grant

The following is a list of the latest publications available from New York Sea Grant's Oswego office. Send check payable to Cornell University to:

New York Sea Grant Communications
Swetman Hall
SUNY College at Oswego
Oswego NY 13126-3599

Or call (315) 342-3042 for information.

Developing an Interpretive Guide for Your Community. D. Kuehn. Interpretive guides inform visitors to your community of the historical, natural and cultural resources available there. This fact sheet is designed to guide groups or communities in a step-by-step process to produce a touring guide or brochure. Feb. 1991. 8 pp. \$.50.

Effectiveness of Recommended Fat-Trimming Procedures on the Reduction of PCB and Mirex Levels in Lake Ontario Brown Trout (*Salmo trutta*). M. Voiland,

K. Gall, D. Lisk and D. MacNeill. This report examines the effectiveness of preparation techniques on reducing contaminants in brown trout from Lake Ontario. Includes illustrations of fish filleting and tables of fillet yields, fat content, and contaminant concentrations. Nov. 1990. 19 pp. \$1.50.

Forming a Recreation or Tourism Association in New York State. D. Kuehn. This paper can assist not-for-profit tourism or recreation groups in forming associations. Included are how to develop bylaws

and charters, file for incorporation in New York State and obtain federal and New York State tax-exempt status. Feb. 1991. 11 pp. \$1.00.

Future Freshwater Sportfishing Trends in New York State. C. P. Dawson and T. L. Brown. Increased participation in New York State sportfishing over the past 20 years is due in part to the successful rehabilitation of New York's sportfishery resources. The implications of an aging New York State population on sportfishing are

Continued on Page 9

Are You of Sound Mind?

Answers (from page 7)

Five for Five — You are definitely of Sound mind.

Four for Five — You are almost of Sound mind. Nice going.

Three for Five — With some more Sound information you will be fine.

Two for Five — Quick! You are in need of Sound guidance.

One for Five — Warning! You are not of Sound mind. But don't give up. Help is readily available. Want to know more about the Long Island Sound? We have 12 interesting and useful fact sheets plus several other publications available. Check the bibliography in this issue of *Coastlines*, write for our *Educational Materials Catalog*, or contact Sea Grant's Melissa Beristain or Trent Schneider at 125 Nassau Hall, SUNY at Stony Brook, Stony Brook NY 11794-5002.

Answers:

1. B 2. D 3. T 4. B 5. T

Summer Reading

Continued from Page 8

assessed in this fact sheet. Future demand of freshwater sportfishing is estimated to the year 2010. Dec. 1990. 4 pp. \$.50.

The Great Lakes Charter Fishing Industry in the 1990's. C. P. Dawson. The Great Lakes charter fishing industry has been fast-growing since 1975 but future growth is expected to be slow. Implications of the demand for these commercial recreational enterprises are discussed. Nov. 1990. 19 pp. \$1.00.

Impacts for Proposed Salmon River Sportfishery Regulation Changes. C. P. Dawson and T. L. Brown. The proposed ban on using foulhooking techniques to catch fish on the Salmon River in Oswego County could have an economic impact. The results of three studies show that the economic loss in trip expenditures could be 25 percent (\$2.5 million). Jan. 1991. 2 pp. \$.50.

Protecting Your Boat from Zebra Mussels. Produced by New York Sea Grant in cooperation with Learning Resources Department, SUNY College at Oswego. This 13-minute video gives a brief history of the zebra mussel invasion in the Great Lakes, pointers on how to prevent damage to your recreational boat and tips on preventing the spread of the mussel to inland waters. April 1991. \$10.00.

Summary of the 1990 Charter Fishing Industry Along New York's Great Lakes Coast. C. P. Dawson. This fact sheet summarizes data from a 1990 Great Lakes charter boat industry survey. Data included are: average charter fishing rates, average annual operating expenses and revenues, advertising and marketing methods, and concerns of the Great Lakes charter fishing industry. Feb. 1991. 4 pp. \$.50.

Thermal Fronts: Magnets for Salmon and Trout. M. Voiland and D. Kuehn. The movements and locations of trout and

salmon species often correspond to thermal fronts (interfaces between water masses of significantly different temperatures). Using thermal front information can improve catches. Methods for locating thermal fronts are described. Sept. 1990. 8 pp. \$.50.

Volunteer Needs Assessment Data Analysis Project. H. D. Greene and G. J. Applebee. Volunteers are an important aspect of the Cornell Cooperative Extension 4-H Youth Development Program. This paper analyzes two surveys to determine what it takes to get volunteers involved as well as ways to keep them in the program. March 1991. 6 pp. \$1.00.

Zebra Mussels: A 1991 Great Lakes Overview. A. Klauber. (See article on page 7.) Rev. May 1991. 8 pp. Single copies free, multiple copies \$.15 each (\$.10 each without identa-card).

NEW VIDEO CAPTURES LIVELIHOOD OF EAST END BAYMEN

By Robert Kent

A new educational video, a joint effort of New York Sea Grant, Terra TV Productions and the East Hampton Baymens Association, is now available for purchase. *Trap Fishing* is the first video in a planned series whose goal is to document the fishing techniques used by commercial fishermen on Long Island's East End, and to preserve on video a marine fishing practice and heritage that goes back to Colonial times. Trap fishing techniques involve placing nets along the migratory paths of fish.

Work on the second video, *Gill Netting*, has begun, and the finished product will be available in the fall. Additional topics in the series tentatively include harvesting shellfish (bay scallops, hard clams, blue mussels, soft clams, conch), harvesting lobsters and crabs, and fishing with haul seines.

Trap Fishing is available in standard VHS video format and has a run time of 30 minutes. If you would like to order a copy, send a \$10 check payable to Cornell University to: New York Sea Grant, 39 Sound Avenue, Riverhead NY 11901-1017.

Owasco Lake Quarantine Debated: Downstate Water Concerns Grow

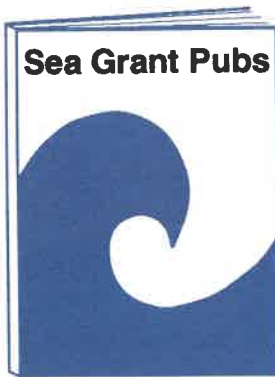
Local officials concerned over the potential spread of zebra mussels in Owasco Lake are requiring all boats that enter the lake via public boat launches to prove they are mussel free. If they cannot supply proof, a steam cleaning will cost them \$5 to \$10 each time the boat is launched into this small lake. The city of Auburn imposed this quarantine effective this past May.

Auburn bases its authority to impose this legislation on a Public Health Law regarding watershed rights. The city is dependent on Owasco Lake for its water supply, and the legislators want to delay the spread of zebra mussels as long as possible. Because zebra mussels can attach to intake pipes, grow, colonize and clog pipes in large numbers, they are considered a major threat to the water supply.

Auburn's unique way of interpreting its watershed rights is expected to be questioned in court. New York Sea Grant and the Department of Environmental Conservation (DEC) both doubt that these measures will have any significant effect in preventing the spread of the zebra mussel even if the local regulations are found to be legal, since the mussel can be easily spread by birds and animals.

While Owasco Lake is one of the smallest Finger Lakes, Auburn's action does reflect the growing concern of municipalities throughout the state in dealing with the zebra mussel. Another clear example of this is the five-year, \$10 million zebra mussel monitoring act for New York City that was recently proposed by Sen. Daniel Patrick Moynihan, to enable the U.S. Army Corps of Engineers to develop zebra mussel prevention and removal strategies in an effort to protect the drinking water of more than 10 million downstate New Yorkers.

There can be little doubt that as the mussels spread so too will the costs for control, cleanup, and research and education.



More Publications for Summer Reading

Please send requests for the following publications (including checks payable to New York Sea Grant) to:

Communications
New York Sea Grant Institute
Dutchess Hall
SUNY at Stony Brook
Stony Brook NY 11794-5001

Or call (516) 632-6905 for further information.

The Economic Value of Long Island Saltwater Recreational Fishing (second printing). J. R. Kahn. Explains how recreational saltwater fishing contributes billions of dollars to the economy of downstate New York. 1991. 14 pp. Free.

New York Sea Grant Educational Materials Catalog 1990-91: An Annotated Bibliography of Print Publications and Audio-Visual Materials about Aquaculture/Commercial Fishing, Coastal Management, Coastal Protection, Coastal Recreation & Tourism, Consumer Use of Fish, Sportfishing and Youth Education. J. Klauber (ed.). 1990. 46 pp. NYEXT-L-90-001. Free.

Help Save Our Waters: A Storm Drain Painting Project. M. Beristain. Storm drains are not trash cans. They are direct links between neighborhoods, coastal waters, and groundwater. This flyer outlines the purpose, procedure and materials for a stenciling project using individual and group volunteers to label storm drains to focus attention on the relationship between dumping waste down storm drains and deteriorating water quality. Jan. 1991. 2 pp. Free.

Improving the Profitability of Finfish Processing Waste: Options for Processors with an Emphasis on Mechanical Deboning (Mincing), Hydrolysis (Liquid Fertilizer Production), and Composting. S. Goldhor and J. M. Regenstein. This report for the operators of small- to medium-sized plants describes current technologies for increasing the value of fish processing plant waste and decreasing pollution. It also discusses the appropriateness of these technologies, what they might cost, and how processors might begin implementing them. Marketing efforts and product development

COASTAL STRUCTURES HANDBOOK SERIES

Analysis, Design and Construction of Pile Foundations in the Coastal Environment. F. K.-P. Cheung and F. H. Kulhawy. 1981. 277 pp. \$6.50.

Breakwaters, Jetties and Groins: A Design Guide. L. A. Ehrlich and F. H. Kulhawy. 1982. 355 pp. \$6.50.

Bulkheads. T. M. Saczynski and F. H. Kulhawy. 1982. 325 pp. \$6.50.

Docks, Piers and Wharves: A Design Guide. W. S. Burgess, Jr. and F. H. Kulhawy. 1983. 320 pp. \$6.50.

Environmental Loads. W. D. Hubbell and F. H. Kulhawy. 1982. 217 pp. \$6.50.

General Planning Considerations for Small-Scale Coastal Structures. J. H. Freese and F. H. Kulhawy. 1984. 124 pp. \$6.50.

Materials. W. D. Hubbell and F. H. Kulhawy. 1982. 105 pp. \$6.50.

are emphasized throughout because although technology alone may be able to reduce pollution, only the integration of technology with product development and marketing can increase profit for the processor. The technologies discussed yield

human food products, feed and fertilizer products and a variety of minor products. The authors focus on mincing, hydrolysis and composting options. 1991. 48 pp. NYSGI-T-91-001. \$6.00.

The Underwater Catalog: A Guide to Methods in Underwater Research. J. Coyer and J. Witman. Developed by the Shoals Marine Laboratory and published in cooperation with the New York Sea Grant Program, this guidebook outlines various methods used by underwater scientists throughout North America. For the first time, this information has been collected, written down, and presented in convenient format for instructors, students and researchers. 1990. 72 pp. Single copies are available for \$6.00. Call for information on multiple copies.

COASTAL EROSION MANAGEMENT STRATEGIES

Government officials and others who need to identify, assess and select appropriate erosion management strategies for a particular area will find useful information in these proceedings from a series of three workshops held in 1989. Experts in both coastal processes and engineering examined erosion problems encountered along Long Island's south shore and considered practical ways of dealing with these problems from a technical perspective.

Identification and Assessment of Technical Information Requirements for Developing Coastal Erosion Management Strategies. J. Tanski and H. J. Bokuniewicz (eds.). Focuses on identify-

Continued on Page 11

More Publications

Continued from Page 10

ing the generic information needed to develop a sound coastal erosion management program for Long Island's south shore. Special Report 103. 1990. 28 pp. \$2.50.

An Overview and Assessment of the Coastal Processes Data Base for the South Shore of Long Island. J. Tanski, H. J. Bokuniewicz, and C. E. Schubert (eds.). Identifies the technical data presently available for this area. Special Report 104. 1990. 81 pp. \$3.00.

A Preliminary Assessment of Erosion Management Strategies for the South Shore of Long Island, New York. J. Tanski and H. J. Bokuniewicz (eds.). Attempts to use the data to discriminate among various erosion-control strategies for different reaches of the coast. Special Report 105. 1990. 34 pp. \$2.50.



NEW LONG ISLAND SOUND STUDY FACT SHEETS

Seafood Issues. K. Gall and M. Beristain. Long Island Sound Study Fact Sheet #9. Feb. 1990. 4 pp. Free.

Toxic Contamination in Long Island Sound. P. Stacey and M. Beristain. Long Island Sound Study Fact Sheet #10. June 1990. 4 pp. Free.

Nutrient Reduction Action Plan Demonstration Projects. M. Long Island Sound Study Fact Sheet #11. Aug. 1990. 4 pp. Free.

Pathogens. M. Beristain. Long Island Sound Study Fact Sheet #12. Dec. 1990. 4 pp. Free.

A poster and the LISS annual reports for 1986-1989/1990 are also available.

APPLICATIONS FOR 1992 KNAUSS FELLOWSHIPS NOW OBTAINABLE

All students in New York State who are currently in a master's, doctoral, or professional program of a marine- or Great Lakes-related field are eligible to apply for the 1992 Dean John A. Knauss Marine Policy Fellowship.

The program selects highly qualified applicants and matches them with "hosts"

in Congress, the Executive branch, or appropriate associations or institutions located in the Washington, DC area for a one-year fellowship. The experience will enable the successful applicant to participate in the decision-making process as it relates to the development of marine policy at the Federal level.

The Knauss Fellow will receive a stipend of \$24,000, along with reasonable transportation and moving expenses. Applications must be received at the Institute's offices no later than Friday, August 30, 1991. For further information please contact Ms. Ruth Tompkins at (516) 632-6905.

SEAFOOD AND HEALTH

New York's Seafood Industry. K. Gall. In addition to marketing the resources from its own waters, New York serves as one of the largest national and international distribution centers for seafood products in the world. This colorful publication for the general public is designed to describe New York's seafood industry both visually and in narrative form to help people better understand and appreciate this industry and the products it delivers 1990. 12 pp. \$1.00.

Nutrient Composition. K. Gall. Flyer including nutrient composition data in easy-to-use chart format for 56 common finfish and 18 shellfish species. Nutrient profiles include protein, total fat, omega-3 fatty acids, cholesterol, sodium and calories. Additional information on seafood preparation and products is included. June 1990. 2 pp. Single copies free; additional copies \$.25 each.

The Omega-3 Connection: A Resource for Consumers. K. Gall *et al.* Flyer describing how to use seafoods to maximize health benefits. Emphasizes the importance of a low-fat diet and seafoods containing omega-3 fatty acids, which may have particular benefits for reducing the risk of heart disease. Discusses information sources, preparation tips, fish oil supplements, and how to modify recipes. 1989. 7 pp. Single copies free; additional copies \$.25 each.

The Omega-3 Connection: A Resource for Food and Nutrition Professionals. K. Gall *et al.* Fact sheet summarizing the role that seafoods and omega-3 fatty acids can play in a healthful diet. Features fat, cholesterol and calorie profiles for 32 finfish, 11 shellfish and 10 processed seafood products. Also includes information on selection, preparation and recipe modification to maintain health benefits. Jan. 1989. 7 pp. Single copies free; additional copies \$.25 each.

YOU CANNOT BECOME A SUBSCRIBER TO COASTLINES!

Unless you fill out this subscription form. Fill it out so we can read it, slip in into a stamped envelope (we never said this was free), and send it to: New York Sea Grant Communications, Dutchess Hall, SUNY at Stony Brook, Stony Brook NY 11794-5001. (If you are already on our mailing list, please give this form to a friend, colleague, or curiosity seeker.)

NAME _____

ORGANIZATION or PLACE OF WORK, IF ANY _____

ADDRESS _____

OCCUPATION _____

(Yes, being a student is real work too)

AREA(S) OF INTEREST _____

(e.g., general coastal and Great Lakes interests; sportfishing; coastal management; commercial fishing; marine education; etc.)

Now just sit back and wait for your free subscription of *Coastlines* to begin. (And you thought you couldn't get something for nothing. Except for the stamp.)



New York Sea Grant Institute

Dutchess Hall
SUNY at Stony Brook
Stony Brook, New York 11794-5001

Address Correction Requested

Non-Profit Org.
U.S. Postage
PAID
Stony Brook, NY
Permit No. 65

New York Sea Grant provides equal opportunities in employment and programming.

Coastlines is printed on recycled paper.