

Diving Into Summer Issues



With 85 percent of the population living within a short drive of one of our 3,400 miles of diverse coastlines, New Yorkers know how to enjoy summer. Our state's coastal resources are intricately woven into many New Yorkers' leisure lives — and livelihoods. As the peak season for diving, fishing, boating, jet skiing and enjoying fresh seafood heats up, the two divers pictured above are keeping their cool in Lake Ontario as they help dedicate the first underwater park in New York's Great Lakes.

Questions about such parks may be answered by a recently-completed New

York Sea Grant research project on diving preferences of New York's divers. The project is one of several that look at the human side of some important issues. Another human dimensions project surveyed residents and community leaders from the Hudson Valley to assess local support for ecosystem restoration efforts in the Hudson River. A third project proposed a model for a marine sanctuary in Peconic Bay to hasten the re-establishment of the bay scallop fishery. Yet another survey appraised the perceptions people on the Great Lakes have about the use of personal watercraft.

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As I scanned the review copy of this issue of *Coastlines*, the number of references to the main New York Sea Grant web site (www.seagrantsunysb.edu) caught my eye. This is an increasing trend over the last few issues and one that promises to continue in the future. In fact, this fall we'll be making the site more user friendly and increasing the breadth of NYSG information. This seems an appropriate time and place to call attention to why you might want to visit us.

Our web pages let you know who we are, what we do, and how you can interact with us to get help. You can easily find contact information for NYSG staffers who are experts in your issue area by using our clickable map. Learn about current and future Sea Grant activities, find information about research development moneys or link to other web sites of interest. Information is presented in tiered format so you can get an overview of each category, then continue to browse deeper at your discretion. I still have to stop thinking in terms of turning pages!

Let me arbitrarily call attention to several sections that you will find on the NYSG home page. Each provides additional information on or issues discussed in articles from this *Coastlines*. Under **News and Announcements**, you can scan information that has been prepared for general distribution or for use by the media. This section will get you up-to-date with the latest

activities of NYSG "virtually" as they are occurring. Under NYSG's **Funding Opportunities and Processes** you can access descriptions of current requests for proposals, the processes required to apply, and the various NYSG fiscal and administrative policies that can impact new and current NYSG researchers. Budget pages, descriptions of how to fill them in and examples of a well-developed budget are included. New York is one of the Sea Grant programs leading the charge toward on-line proposal submission – we're not there yet, but we're hopeful for the near future. Under a third section, **Publications and Public Relations**, you'll find full-text versions of recent technical and non-technical publications from the research, extension and education components of the program, as well as brochures and archived *Coastlines* issues prepared by the communications staff. You can also link to publications by the National Sea Grant Office and the three regions to which NYSG belongs. Links from our home page lead to NYSG Extension management and staff who have a separate server that can be reached directly at www.cce.cornell.edu/seagrant.

The NYSG web site contains a wealth of information about our activities in support of sustainable development of New York's and the nation's coastal resources. I hope that you, as one of our 8,000 *Coastlines* readers, will join the 2500 other monthly users that visit www.seagrantsunysb.edu.

Photo by Barbara A. Branca




Attendees of New York Sea Grant's Board of Governors meeting, May

It's summer . . .

and from Niagara Falls to

along the St. Lawrence



and the Hudson,



New Yorkers are using our diverse coastal resources in record numbers. In this issue of Coastlines, you'll read about some of Sea Grant's efforts that impact New Yorkers at work and at play along our shores.

Photo credits:

Fishing in Montauk by Sharon O'Donovan

Jet skiing on the Hudson River by Walt Thompson

Boating on Little Sodus Bay, Lake Ontario by Diane Kuehn

A young-of-year chinook salmon.

Photo courtesy of Patrick Sullivan



Sea Grant on Seafood Safety

Sea Grant research continues to ensure high quality and safety of products from the seafood industry, which contributes at least \$1 billion to the economy of the state and provides employment for at least 25,000 New Yorkers.

Recent *Listeria*-related studies seek to reduce the incidence of costly product recalls due to presence of the harmful pathogen. Seeking to extend this work, a new project headed by Cornell University's **Martin Wiedmann** is expected to include recommendations for elimination of persistent pathogenic strains. Also, through examination of virulent and non-virulent strains, there is the potential for modification of the Food and Drug Administration and USDA Food Safety and Inspection Service's "zero-tolerance standard" for *Listeria monocytogenes* on cooked, ready-to-eat food.

Reeling in New Fisheries Research

Are you one of the more than 750,000 New Yorkers holding a fishing license in the state? If so, you may already be aware that New York's Great Lakes sport fisheries — recently estimated at a \$43 million net value with over \$61 million annually spent by anglers — is an important part of our state's economy.

Realizing the value of our waters and the dozens of fish species residing in them, the New York Sea Grant program has founded its current two-year cycle of fisheries and seafood-related research with a goal of enhancing its economic leadership in New York and elsewhere. In addition to funding several other topical projects, Sea Grant began preliminary work early in 2000 on a comprehensive research endeavor spawned from its new "Sustaining and Rehabilitating New York's Coastal Fisheries" focus area. Although the study, headed by Cornell University principal investigator **Patrick Sullivan**, will focus primarily on chinook salmon, parallel studies will be conducted on other species of salmon such as coho, steelhead and brown trout by comparing life histories, feeding habits and growth patterns. In addition to species comparisons, the team of researchers will also evaluate geographical comparisons between stocking locations.

Receiving over one-fifth of NYSG's total 2000-2001 core research budget, this "special focus" project deals with factors affecting the early survival and management of salmon populations in Lake Ontario. "The special focus project is expected to make a significant, broad-based and invaluable contribution to valuable marine and Great Lakes commercial

and recreational fisheries management," says NYSG Director Jack Mattice. Adds NYSG Assistant Director Cornelia Schlenk, "This marks the first test of our program's 'special focus' concept," in which approximately \$300,000 a year will be available to support one large two-year multi-dimensional and disciplinary research project with a built-in outreach effort.

Over the course of the last three decades, stocked fish species such as salmon have sustained world-class recreational fisheries in Lake Ontario and have contributed to the economic development of shoreline communities. But, in recent years, changes in the lake have troubled its managers who seek strategies for maintaining a healthy sportfishery.

"There have been some uncertainties over future food web changes in the lake due to declining phosphorus levels and zebra mussel impacts," says NYSG Fisheries Specialist Dave MacNeill. "Fisheries management has been problematic because of the large size of the lake and some missing information on post-stocking survival and contributions of naturally produced salmon in the system."

In an effort to preserve the vitality of the fishery, Sullivan and his team of researchers and affiliates plan to use a science-based approach to evaluate the issues of concern. First, the intentional reductions of phosphorus mandated by water quality agreements were successful in improving water quality of the lake. However, the colonization of the exotic zebra mussels could be changing the direction of energy flow in the lake, making less energy available for the open water (or pelagic) part of the food web. "There were

concerns over how this would effect the small bait fish such as smelt and alewives that salmon eat,” says MacNeill. “This, in turn, prompted fisheries managers to enact stocking changes to maintain the sustainability of the fishery, a measure that was not universally accepted.”

To make matters more difficult, Mother Nature continues to throw curve balls. For example, MacNeill says that despite the declines in lake productivity, salmon catch rates remain good and many trophy-sized fish continue to be caught. Lake Ontario remains the acknowledged leader in terms of sizes of trout and salmon in the Great Lakes. Also, Lake Ontario alewives have shown some signs of a population rebound in the last two years — possibly due to warmer than average water temperatures which may have led to more successful reproduction of the invasive species.

Another uncertainty in the stocking formula is the unknown contribution of naturally produced salmon in the system. For several years, biologists on both sides of Lake Ontario have observed some numbers of naturally produced chinook salmon in the lake’s tributaries — no doubt the result of improving habitat conditions in these streams and rivers. Says MacNeill, “There are no hard and fast estimates, but most will agree that it is considerable. There is also no information on the relative survival of stocked versus wild chinook salmon. This is important information in the predator-prey dynamics of the lake.”

He continues, “Obviously, without more accurate estimates of how many predators are in the lake, how they are surviving and how many are being added through natural production, the management of the predator-prey system is extremely difficult. Clearly, by quantifying these parameters, more precise management strategies can result.”

To this end, one of the main objectives of Sullivan’s research project is to compare long-term data sets with newly collected information to estimate relationships between survival, growth and prey production with changes in water quality indicators in the lake. The effort will also seek to determine the relative abundance of naturally produced and stocked salmon and ascertain the diet and distribution of the fish in relation to prey abundance and distribution with nets, trawl and acoustic assessment. In addition, Sullivan and his fellow researchers on the multi-faceted project intend to estimate the effects of the changing lake food web on young salmon survival and growth and ultimately develop a public outreach program to pass on the project results to the fishery stakeholders.

Sea Grant is also funding researchers interested in developing and improving aquaculture technologies

— those involving the culture of marine and aquatic animals. These technologies will be geared towards further support of the commercial and recreational fisheries and fishing industries as well as to ensure high-quality and safe seafood end products. In a newly-funded separate study, Cornell University researchers **Paul Bowser** and **James Casey** are examining the little-known swim bladder sarcoma virus — a disease recently identified in the United States as affecting populations of the commonly-cultured Atlantic Salmon.

In addition to concerns over ecological impacts on New York’s Great Lakes salmon populations, increasing attention has also been given to coastal habitat restoration opportunities in New York. In a new NYSG project overseen by SUNY College of Environmental Science and Forestry’s **Karin Limburg**, the ecological constraints on establishing a freshwater-resident population of blueback herring will be examined. The little-known blueback, a crucial forage invasive species of the Hudson River, has expanded its population westward through the New York State lock and canal system into the Mohawk River and Lake Ontario. With a focus on the Mohawk/Hudson Drainage region, this research effort will look at critical population parameters to assess the blueback’s potential for successful establishment and spread.

Long-term evolutionary effects of harvesting on the dynamics of fish populations is the focus of ongoing studies being conducted by **David Conover** of SUNY Stony Brook’s Marine Sciences Research Center. This new offshoot of Conover’s research will examine a very fundamental aspect of the effect of fishing mortality on wild populations and its implications for future fish populations. Natural mortality typically has its largest impact on smaller fish, while fishing activity usually claims larger fish. According to Conover, “If size-selective fishing mortality can be shown to influence the evolution of growth rate and other life history traits, the potential long-term consequences of conventional fishery management strategies on fish populations, such as minimum size limits, will need to be re-evaluated in both marine and Great Lakes environments.” Conover will continue experimental size-selective harvesting of captive Atlantic silverside populations to fully evaluate the magnitude of evolutionary change in growth rate and correlated traits.

– **Paul C. Focazio**

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The special focus project is expected to make a significant contribution to fisheries management.
—**Jack Mattice**

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Sea Grant on Sea Lamprey

In a new project tied to Great Lakes fisheries, **Isaac Wirgin** from the NYU School of Medicine will examine genetic diversity in sea lamprey. These upstream spawning, parasitic fish have had a detrimental effect on trout and salmon for decades. With some consideration being given to phasing out chemical applications for lamprey control, non-chemical approaches such as the release of sterile males and the construction of low-head barrier dams are being practiced. These dams prevent the upward migration of lamprey without disrupting the movement of other fish. Information on their reproductive strategy and the degree of genetic differences among Great Lakes tributaries and between Great Lakes and Atlantic coast populations should serve to enhance eradication efforts and their cost-effectiveness.

Personal Watercraft: *Is It Getting Personal?*

Compared to people who own motorboats or lakefront homes, personal watercraft (PWC) users are the newest “players” around New York’s recreational waterways in the summertime. But despite the enthusiasm that jetskiers bring to their pastime and the positive effects that PWC use brings to coastal economies, there seems to be a perception that the loud drone of jet-skis interferes with the lifestyle of coastal property owners and that PWC users cruise by motorboats at unsafe speeds and distances.

Photo by Cheng-Ping Wang



Using personal watercraft in the Great Lakes.

“
Most PWC users,
boaters and
landowners prefer
operating distances
greater than the
regulation 100 feet.

—Chad
Dawson
”

In a Sea Grant-funded study concluding in early 2000, professor **Chad Dawson** and Sea Grant Scholar **Cheng-Ping Wang** of the State University of New York College of Environmental Science & Forestry at Syracuse sought to find out what conflict factors among different lake users are likely to arise. They enlisted some help from NYSG Great Lakes Extension leader **Dave White**, a specialist in marinas and recreational facilities along New York’s Great Lakes shorelines.

The study revealed that the current multiple uses of our waterways may not be the best way to reduce recreation conflict and that education may increase compatibility between different user groups.

According to Dawson’s study, “Compared to many inland bodies of water in New York State, the Great Lakes have a larger water surface area and less public access overall.” But the potential for conflict arises not in the middle of a lake, but in the accessible bays, harbors or beaches that dot the lakefront.

To measure potential recreation conflict, Dawson mailed three surveys with parallel questions to about 1,000 personal watercraft owners, 3,000 motorboat owners and over 600 coastal landowners from NY’s ten counties along the St. Lawrence River, Lake Ontario, Niagara River and Lake Erie. The mailing took into account all the different activity combinations such as landowners who own personal watercraft.

With an adjusted response rate of 42 percent, the survey found that all groups enjoy the lake environment’s natural setting and the chance to relax, rest and get away. Although the social aspect of lake activities was moderately important for all groups, landowners like to get together with family and friends whereas PWC owners and motorboat owners like to “see and be seen” during their boating excursions. PWC owners especially stated they enjoy excitement more.

Although user groups have similar recreational goals, the study suggests there are one-way or “asymmetric” conflicts. Dawson reports, “There were landowners who were bothered by both PWC users and motorboaters. There were motorboaters who were bothered by PWC users but not much by landowners, and finally, there were PWC users who did not seem to be affected by either motorboaters or landowners.”

According to the survey, all PWC owners evaluated their behavior as a group favorably. But landowners and motorboat owners without PWCs had more negative evaluations of PWC owners, answering questions that characterized users as risky, noisy, discourteous or irresponsible. One possible explanation is *resource dependence*.

Landowners can't change the location of their properties whereas PWC users and motorboaters can find a new area to ride boats or jet-skis.

When asked about their sensitivity to interference from other user groups, all groups responded that recreation conflict was not that significant. However, failing to maintain the recreational quality for visitors who are sensitive to conflict may cause those visitors to spend their leisure dollars elsewhere at a loss to the local economy.

User's perceptions of boating regulations suggest that many of them do not understand the current NYS regulation of 5 mph within 100 feet from shore. In addition, the landowners' responses indicate not only their unfamiliarity with boating rules, but also their strong feelings against PWC use.

When surveyed, about 70 percent of PWC users and motorboaters cumulatively reported preferred distances of more than 100 feet from shore. These results indicate that the current NYS regulation may not be sufficient from their perspectives. About 45 percent of PWC users preferred longer distances from other PWC users. A noticeable proportion of non-PWC users reported needing a distance of 1,000 feet or more away from jet-skis, citing motor noise, concern for safety, perceptions of crowding, disruptive or unsafe behaviors and privacy issues as reasons. Landowners felt noise and speeding from PWCs and motorboats disturbed their daily life and could pose safety concerns for their families when wading, swimming or fishing. Motorboaters reported that PWC users followed their boats too closely, jumped boat wakes or interrupted their course.

But preferences for such large distances between users during their activities should not be generalized to inland lakes or river systems where banks and shorelines differ greatly from those of the Great Lakes, Dawson reports.

This study may suggest regulatory changes based on the distances pre-

ferred, but other alternatives need consideration. New boat and PWC motor technology will reduce noise levels and minimize the impacts to the natural environment. Dawson also suggests that "education may be the key to reduce the conflict among user groups." In this study, PWC users perceived they were not appreciated by other users, but thought their behaviors were not as bad as other groups thought. Motorboaters perceived interference from jet skiers, but did not perceive that they also caused problems to landowners. Both motorboaters and landowners with PWCs had more sympathy for PWC use and users.

“
Education may be the key to reduce the conflict among user groups.
—Chad Dawson
”

Photo by Chad Dawson



One of many docks for motorboats on Lake Ontario.

"This study suggests that people participating in multiple activities may have more empathy and tolerance for other types of visitors," concludes Dawson. Recreation managers may reduce some perceived recreation conflict by increasing tolerance through "experience sharing" among different user groups. Education could provide jetskiers with strategies to avoid conflict such as selecting a quieter 4-cycle PWC motor, acting courteously to other users or selecting suitable areas for jet-skiing that would minimize impacts. NYSG's White will soon have in hand some materials that will help "rev up" this education effort. Stay tuned.

—Barbara A. Branca

Photo by Philip Church

Then and now: A remote operating vehicle (an ROV donated by the Armada Group) explores the wreck of the David W. Mills. The Mills, pictured below, was a barge carrying lumber that went aground west of Oswego in 1919.

Photo by Mary Gregway



An Event of Firsts

In perhaps the first-ever live underwater ribbon-cutting, five divers dedicate the Mills.

History was made on the evening news in early May as the Syracuse-based ABC affiliate station WIXT NewsChannel 9 began with perhaps the first-ever live broadcast of an underwater ribbon-cutting. Twelve feet underwater, five divers

helped dedicate the **David W. Mills Submerged Cultural Preserve and Dive Site** in Lake Ontario.

Located on Ford Shoal, about four and a half miles west of Oswego Harbor, the wreck of the Mills will be the first NY state underwater “park” in the Great Lakes region. According to NYSG’s Great Lakes program coordinator **David White**, “The buoying and marking of this preserve culminates nearly ten years of hard work and determination of many people involved in diving, historic preservation, community development and education in the Oswego area and throughout the state.”



Rosemary Nesbitt — flanked by Dave Cutter of Seaway Trail, Oswego Mayor John Gosek, John Carstens (Office of General Services), OMF’s Henry Spang and Dave White —“unchains” two symbolic buoys.



Watch



Photo by Dave White

Oswego Maritime Foundation's Philip Church emerges from the depths. "The preserve will allow free and easy access to the shipwreck for local and visiting scuba divers. A mooring buoy will help diver's find the site and eliminate the need to drop damaging anchors onto the wreck. A hazard buoy will be placed on the shallow ships' boiler, which has been a danger to boaters for many years."

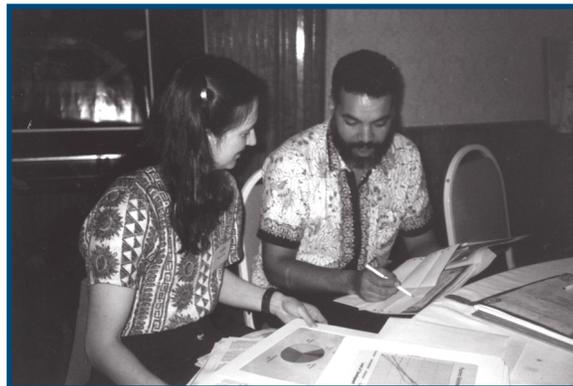
Great Lakes Underwater 2000 symposium. During this annual event sponsored by NYSG and OMF, presenters described the history of the *Mills* shipwreck and the current trends in SCUBA diving in New York.

Oswego Historian Rosemary Nesbitt conducted a symbolic "unchaining" of attached buoys to signify the official opening of the preserve. NYSG's White said "The *Mills* preserve will be the first in a series of underwater sites all along the New York shores of Lakes Ontario and Erie and the St. Lawrence River." Dave Cutter of the Seaway Trail imagines "this will be a model for six such dive sites along the Seaway Trail."

Sea Grant and the Oswego Maritime Foundation (OMF) worked in partnership with the State of New York to establish the preserve, which was patterned after similar preserves in Lake George and Lake Champlain. The state Office of General Services granted a permit to Sea Grant and OMF allowing development of the submerged cultural preserve and dive site.

Throughout the day, NewsChannel 9 interviewed dive enthusiasts Phil Church, Dale Currier, Tom Rasbeck, Jim Walker, and brothers Marty and Steve Williams at the site of the shipwreck. Before and after the live broadcast of the preserve's ribbon-cutting, state and local officials, agency representatives, divers and researchers gathered on dry land for the

Photo and story by Barbara A. Branca



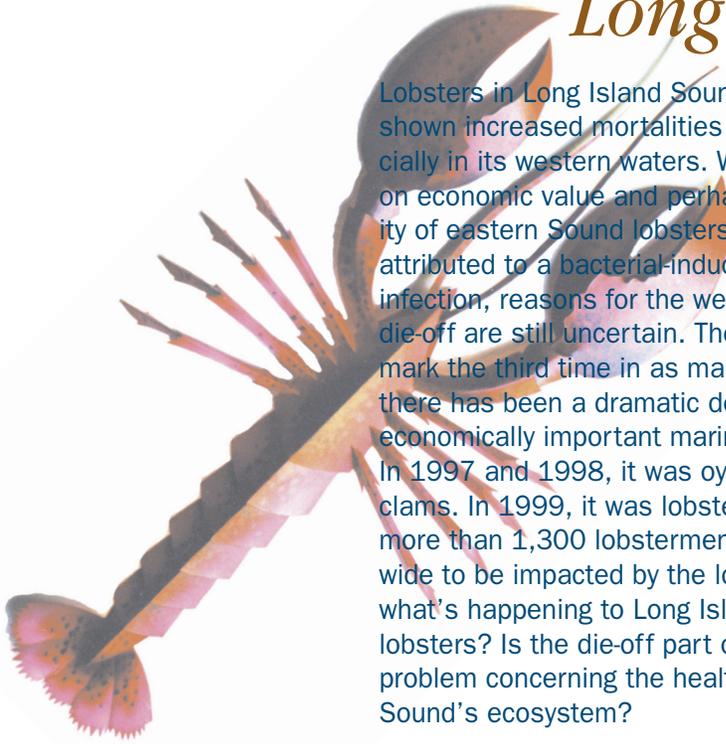
Researcher Sharon Todd and Sea Grant Scholar Walter Mann presented results of their survey during the dedication of the David W. Mills.

From Novice to Professional

Will the David W. Mills Preserve become a favorite dive spot among New York's thousands of certified SCUBA divers? Load up the gear because prospects look good. According to NYSG funded researcher Sharon Todd of SUNY Cortland, the usually chilly temperature of Lake Ontario does not keep divers away. As for many leisure activities, the lack of free time does. The 12 to 15 foot depth of the Mills wreck is also a positive. According to Todd's 1999 diver survey, "75 percent of respondents felt most comfortable at depths of less than 70 feet." About the same number answered that additional artificial reefs, more intentionally sunken ships, and underwater parks and trails would positively affect their experience.

With a response rate of 37 percent, Todd found that 60 percent of surveyed divers had gone diving in NY's Great Lakes sometime during their lifetime. Todd, Sea Grant Scholar Walter Mann and Tiffany Cooper mailed surveys to 2,850 divers around the state who ran the gamut from beginner to post-expert. The team also conducted focus groups and phone interviews with dive shop owners throughout the NY Great Lakes region. They found the average amount spent by active divers is nearly \$1,000 annually, with two-thirds being spent on equipment. When food and travel are accounted for, divers spend millions of dollars annually on dive-related excursions in the Great Lakes with 60 percent of the money generated from divers who live within the region.

What's Happening to Long Island Sound Lobsters?



Lobsters in Long Island Sound have shown increased mortalities — especially in its western waters. While effects on economic value and perhaps mortality of eastern Sound lobsters have been attributed to a bacterial-induced shell infection, reasons for the western Sound die-off are still uncertain. The mortalities mark the third time in as many years that there has been a dramatic decrease in economically important marine species. In 1997 and 1998, it was oysters and clams. In 1999, it was lobsters, causing more than 1,300 lobstermen Sound-wide to be impacted by the loss. So what's happening to Long Island Sound lobsters? Is the die-off part of a larger problem concerning the health of the Sound's ecosystem?

At SUNY Stony Brook in late May, lobstermen, researchers, resource managers and legislators heard experts discuss some of the current hypotheses to explain the lobster die-off in Long Island Sound. The University at Stony Brook's Marine Sciences Research Center (MSRC) and the NYS Department of Environmental Conservation (NYSDEC) teamed up with NYSG to host "Lobsters and the Long Island Sound: 1999-2000." This meeting was an opportunity for researchers and administrators to discuss with lobstermen the research priorities that came from April's Lobster Health Symposium. That event, sponsored by NY, Connecticut, National and other northeast Sea Grant programs, the NYSDEC, Connecticut Department of Environmental Protection, U.S. Environmental Protection Agency, National Marine Fisheries Service, and SUNY Stony Brook's MSRC, was held in Stamford, Connecticut on April 17-18. Attended by over 250 lobstermen, researchers and members of federal and state agencies as well as environmental organizations, the successful first-day meeting provided a forum for lobstermen and seafood dealers to relate how the lobster crisis

has affected their livelihood. In addition, scientists presented some of the factors that may be the cause of lobster deaths based on their research. Environmental organizations also contributed to the discussions.

"Our intent in planning the Stamford workshop was to gather the concerns from groups most affected by the issues at hand so that the participating agencies could effectively develop a comprehensive plan for lobster and Long Island Sound environmental monitoring and research," says NYSG Director Jack Mattice. "The audiences targeted here included both lobster fishers who have anecdotal observations as well as scientists who have taken water quality samples somewhat coincidental to the mortalities, measured trace contaminants in lobster tissue or conducted screening for various parasites and pathogens."

Connecticut Sea Grant Communicator Peg Van Patten explains, "The aim of this workshop was to review potential factors, both environmental as well as pathogenic, contributing to the recent massive lobster die-off in Long Island Sound." In second-day workshops, participants identified several research and monitoring priorities. They include the extent to which a paramoeba is responsible for killing the lobsters and how a wide variety of environmental factors such as increases in the Sound's water temperature and numerous anthropogenic inputs such as sewage, contaminants and pesticides affect lobsters. One commonly held hypothesis is that a combination of factors act as stressors on the northern lobsters — already in the southernmost part of their range — and make the animals more susceptible to illness and death from pathogens such as the paramoeba. Specialists and lobstermen also met to address the socioeconomic impact of the lobster die-off as well as how to conduct the assessment of this important natural resource.

Facts to Remember:

The American lobster is one of New York's largest and economically important commercial fisheries. Earning a dockside value of over \$29 million in 1998, according to National Marine Fisheries Service statistics, the New York lobster catch was greater than the value of all its fin fish combined in 1996, 1997 and 1998.

Lobster sculpture and photo by James Cook.

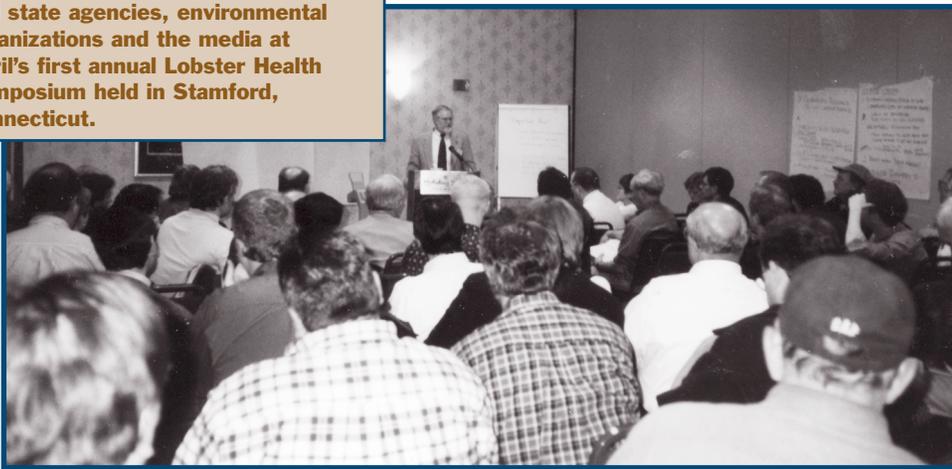
In the weeks following the workshop, Mattice says the mindset was to “produce a comprehensive plan oriented toward identifying potential causes for the Sound’s lobster illnesses and mortalities that can be eliminated as well as those that should be considered further with research or future monitor-

ing.” By keeping lines of communication open, participating researchers will review the events that led to the die-off and join resources to expand the benefit of ongoing research while keeping lobstermen involved in the process to uncover the cause of the lobster mortalities.

For more on lobsters, check out our web site: <www.seagrant.sunysb.edu/pages/LILobsters.

NYSG Director Jack Mattice addresses a crowd of lobstermen, researchers and members of federal and state agencies, environmental organizations and the media at April’s first annual Lobster Health Symposium held in Stamford, Connecticut.

Photo by Barbara A. Branca



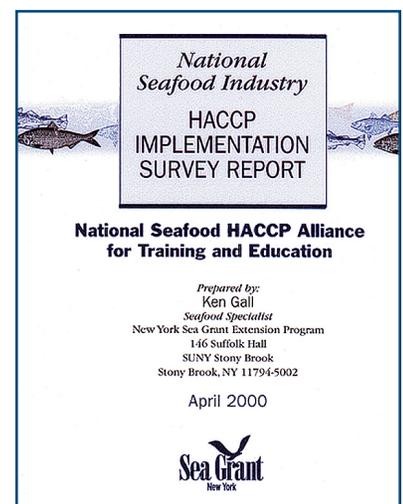
Seafood Education Ideal for FDA Compliance

Seventy-seven percent of the nearly 750 companies that responded to a recent NYSG-compiled, National Seafood HACCP Alliance-funded seafood safety survey indicated they would not have been able to develop a plan to comply with new U.S. Food and Drug Administration seafood regulations without in-depth training. The finding is part of a new 65-page report on the costs, benefits and impacts of Hazard Analysis Critical Control Point (HACCP) principles on the seafood industry.

“The intent of the national survey,” says HACCP educator and NYSG seafood specialist Ken Gall, “was to accurately document the time, effort and resources that seafood industry processors and wholesalers devoted

to implementing the FDA’s regulations. It was also meant to identify potential changes or problems in the process as well as to plan for additional training activities that might be needed.”

Over 90 percent of the responding firms felt that Seafood Alliance training courses, which at least one of their employees attended, provided them with the information they needed to develop a HACCP plan, understand FDA’s guidance information, and comply with the FDA seafood HACCP regulation. Considerable interest was expressed in having additional one-day training courses, with approximately two-thirds of the survey respondents expressing that this could best be achieved via Internet-based training courses.



Now available from New York Sea Grant.

Arrivals and Accolades

Domske Receives Dual Recognition

For the first time in NYSG’s near 30-year history, one of its extension specialists received two Program Leader Awards at April’s Great Lakes Sea Grant Network (GLSGN) Conference. During the annual event, held in Milwaukee, WI, NYSG Coastal Education Specialist **Helen Domske** accepted the GLSGN Program Leader “Outstanding Program Award” for her role as part of a network team in developing the Exotic Species Day Camp.

Domske, who is also Assistant Director of the Great Lakes Program, received a

consortium of state universities and land grant institutions providing high-tech education programs and services — bestowed upon Domske and eight others in the region the honor of “Outstanding Educational Program.”

Along with her project member counterparts, Domske educated teachers in remote locations of the Great Lakes region about the availability and benefit of classroom teaching resources focusing on the biology, spread and impact of aquatic exotic species. Their “train-the-trainer”

Photo by **Barbara A. Branca**



Helen Domske on Lake Ontario in Oswego

Great Lakes Sea Grant Network Program Leader “Superior Award” as well for her work in developing the Lower Lakes Reference Charts. These charts, now at wings.buffalo.edu/glp, pinpoint state and federal government organization contacts that address the issues of fisheries, water levels and quality, tourism, and exotic species.

This Sea Granter’s six-plus years of exotic species outreach efforts — most recently illustrated in the collaborative Great Lakes Sea Grant Exotic Species Day Camp Education project — were also acknowledged last August by the American Distance Education Consortium (ADEC). The ADEC — an international

approach incorporated the latest technology, including CD-ROMs and web sites.

Domske says she is grateful for all the attention she and her regional Sea Grant counterparts have been receiving for the project. “This project has been innovative in providing educational information for teachers nationwide with its award-winning multimedia educational kits and curriculum.” She is currently embarking on a national extension of the Great Lakes aquatic nuisance species education project targeted to geography and social studies teachers and students.

NYSG welcomes three more to the fold

In May, three new extension specialists joined the Sea Grant ranks, two of whom filled newly created positions. **Antoinette Clemetson** came on board as Sea Grant's Marine Fisheries Specialist at Cornell University's Research and Extension Center in Riverhead, Long Island. SUNY Stony Brook's NYSG extension office welcomed **Eileen Keenan** as the program's new Nonpoint Education for Municipal Officials (NEMO) Support Specialist. And at SUNY Oswego, **Molly Thompson** signed on as Sea Grant's new Dune Habitat Educator.

Photo by Paul Focazio



Antoinette Clemetson and Eileen Keenan

As Sea Grant's "downstate" fisheries specialist, Clemetson will plan, conduct and evaluate regional programming related to fisheries biology, management, conservation, restoration and aquaculture for Long Island, New York City and the Hudson River estuary. Clemetson will collaborate with Sea Grant-funded researchers to educate government agencies responsible for fisheries management as well as elected officials with an interest in fisheries. She will also target her efforts to audiences directly affected by fisheries — anglers, organized fishing groups, charter and party boat operators and coastal communities.

Keenan will work closely with the Manhasset Bay Protection Committee and the Hempstead Harbor Protection Committee to adapt materials for local governments from the Connecticut Cooperative Extension NEMO program. NEMO, a water quality education program started at Connecticut Sea Grant, is currently being implemented nationwide. "Given the success of the program in Connecticut," says NYSG Director Jack Mattice, "we are really looking forward to having Eileen work with Long Island communities."

At SUNY Oswego, Thompson will partner with Eastern Lake Ontario community leaders to establish education and outreach programs on issues of concern regarding the area's dune ecosystem. This barrier system, which consists of beaches, sand dunes, embayments and wetlands, extends for roughly 16.7 miles and contains the largest and most extensive freshwater sand dune formations in New York State.

By engaging local citizens, school administrators, town boards, chamber of commerce employees and others in the process of dune management, policy and use, Thompson will develop a variety of educational materials. Sea Grant-produced information in the area of dune habitat education will include an annual newsletter and maintenance of the "Lake Ontario Sand Dunes and Wetlands" web site. In cooperation with The Nature Conservancy and The Ontario Dune Coalition, this New York Sea Grant web site serves to inform visitors of the integral part that Lake Ontario's eastern shore sand dunes play in their surrounding coastal barrier environment.



Build a dune like this one at the dunes' website:
<www.cce.cornell.edu/seagrant/dune/dune.html>.

CURRENTS

Lake Learning on Champlain

With over \$670,000 in funds committed through 2001 by the National and New York Sea Grant programs and its participating universities, the Sea Grant Lake Champlain project is better informing both government officials and the public on the lake's coastal concerns and issues. Last summer, NYSG's **Mark Malchoff** traded in his marine fisheries education responsibilities on Long Island to be the first of two Sea Grant coastal issues specialists along Lake Champlain's 587 miles of shoreline. Based at SUNY Plattsburgh, Malchoff was joined this past January by University of Vermont's **Juri Homziak** to oversee the project.

Photo courtesy of Mark Malchoff



Lake Champlain Sea Grant's co-sponsored "Net Trawling Workshop," held earlier this year at the University of Vermont in Burlington, was envisioned by UVM's research vessel captain Dick Furbush (at back) and taught by Steve Cluett from SUNY Stony Brook's Marine Sciences Research Center. Cluett is pictured here demonstrating some repair techniques.

For more information on the Sea Grant Lake Champlain Project, visit us on the Internet at, <www.seagrantsunysb.edu/pages/SGL-ChamplainProject.htm>.

Two broad themes are being explored through the joint New York-Vermont venture. First, SUNY Plattsburgh is home to issues relating to aquatic resources, water quality and ecosystem changes in the lake and how they relate to introductions of non-indigenous species, changes in fisheries dynamics and the resulting impacts on shoreline communities. Second, Lake Champlain watershed issues are being addressed at the University of Vermont (UVM), with a focus on the implementation of an extension education program pertaining to watershed management.

The next step is to develop research activities to support work being done at the two universities. In addition to hammering out the details

of a "Lake Champlain Research Issues Initiative," Malchoff and Homziak realize the benefit of partnering with local organizations and agencies to make all aspects of the project a success. Working with the Lake Champlain Basin Program, New York and Vermont's Department of Environmental Conservation, the Vermont Agency of Natural Resources, the Lake Champlain Research Consortium and other research centers at both SUNY Plattsburgh and UVM, Sea Grant's Lake Champlain staff continue to produce fact sheets and conduct workshops to help the public recognize the issues facing Lake Champlain.

Earlier this year, for example, Sea Grant joined forces with UVM's Rubenstein Ecosystem Science Laboratory and the Vermont Department of Fish and Wildlife to sponsor a Trawl Repair Workshop. The two-day workshop offered insights on trawl and other gear type techniques, which are employed for fisheries management and ecosystem research efforts on Lake Champlain that require extensive sampling. By the very nature of sampling, these gears are often damaged, sometimes beyond repair, through contact with bottom structure or debris. Says Malchoff, "The lack of trawl net design, construction, and repair capabilities within the basin has the potential to increase sampling costs and decrease the amount of data that can be collected during the field season. So, the workshop helped its 20 participants — Vermont Department of Fish and Wildlife staff and UVM faculty and graduate students — gain design and hands-on repair skills that will enable more efficient use of fish sampling gear in Lake Champlain for both research and management applications."

"The efforts of both Malchoff and Homziak serve as a bridge between scientific researchers and user groups as well as individuals concerned with Lake Champlain's coastal resources," says NYSG Director Jack Mattice. "Our goal is that their hard work will result in wiser decision-making and greater stewardship of coastal resources in the area."

— Paul C. Focazio

Last Wave

Ordering Publications

Please send requests for the following recent publications along with a self-addressed label and check payable to:

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Soak up Sea Grant's news online

New York Sea Grant brings ashore its latest program news electronically at <www.seagrants.sunysb.edu>:

- Find out what our newest Sea Granters – Eileen Keenan, Antoinette Clemetson and Molly Thompson – are up to. Also, learn more about the program's upcoming endeavors in Manhattan dealing with New York-New Jersey harbor estuary issues.
- Calling all students, Masters degree track and higher – Sea Grant is now accepting applications through August for its Knauss Fellowship program.
- Sift through NYSG's most recent news "hits" in our extensive Media Archives and check out the status of our initiatives involving Lake Champlain, Long Island Sound's lobsters, brown tide, and the Island's south shore hard clam population.

New York Sea Grant Publications

Hudson River Submerged Aquatic Vegetation. Nordica Holochuck. 2000. *Free*

National Seafood Industry HACCP Implementation Survey Report. Ken Gall. 2000. *Free*

New York's Great Lakes Angler. David B. MacNeill, Editor. March 2000. Order from New York Sea Grant, Morgan II, SUNY College at Brockport, Brockport, NY 14420-2928. \$4.00/annum



Journal Reprints

Foraging habits of bluefish, *Pomatomus saltatrix*, on the U.S. East Coast continental shelf. Jeffrey A. Buckel, Michael J. Fogarty, and David O. Conover. 1998. *Fisheries Bulletin*. 97:758-775. \$1.00

Ontogeny of energetic relationships and potential effects of tissue turnover: a comparative modeling study on lake trout. Jixiang He and Donald J. Stewart. 1998. *Canadian Journal of Fisheries and Aquatic Sciences*. 55:2518-2532. \$1.00

Changes in the utilization of New York's Great Lakes recreational fisheries. Nancy A. Connelly, Tommy L. Brown, Barbara A. Knuth, and Les Wedge. 1999. *Journal of Great Lakes Research*. 25(2):347-354. \$1.00

Comparison of target strength distributions and fish densities obtained with split and single beam echo sounders. Lars G. Rudstam, Sture Hansson, Torfinn Lindem, and Donald W. Einhouse. 1999. *Fisheries Research*. 42:207-214. \$1.00

Mutual prey of fish and humans: a comparison of biomass consumed by bluefish, *Pomatomus saltatrix*, with that harvested by fisheries. Jeffrey A. Buckel, Michael J. Fogarty, and David O. Conover. 1999. *Fisheries Bulletin*. 97:776-785. \$1.00

Application of the BAX for screening/genus *Listeria* polymerase chain reaction system for monitoring *Listeria* species in cold-smoked fish and in the smoked fish processing environment. Dawn M. Norton, Meghan McCamey, Kathryn J. Boor, and Martin Weidman. 2000. *Journal of Food Protection*. 63(3):343-346. \$1.00

Response of yellow perch (*Perca flavescens*) in Oneida Lake, New York, to the establishment of zebra mussels (*Dreissena polymorpha*). C.M. Mayer, A.J. VanDeValk, J.L. Forney, L.G. Rudstam, and E.L. Mills. 2000. *Canadian Journal of Fisheries and Aquatic Sciences*. 57:742-754. \$1.00

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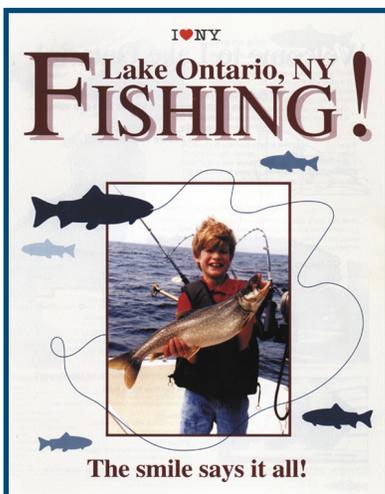
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Lake Ontario Fishing!

Diane Kuehn, 2000. *Free*

“Hard” Regulations for Clams

Comprising one of New York’s most important commercial fisheries, the hard clam lives in shallow coastal bay waters in areas with a soft sandy bottom. Though you may not recognize the term “hard clam,” you probably know its market names: chowders are the largest, cherrystones are medium in size and littlenecks are the smallest hard clams. Other clams harvested in New York waters are surf clams, ocean quahogs and softshell clams or steamers.

Thanks to strictly-enforced regulations, your local seafood provider receives safe-to-eat aquatic delicacies such as hard clams. This safety control system, called HACCP, Hazard Analysis Critical Control Point, was put in place by the Food and Drug Administration in late 1997 to cover all shellfish and fish species that are processed in or exported to the U.S. from foreign countries. According to a recent Sea Grant-compiled, Seafood HACCP Alliance-funded national survey, 77 percent of the nearly 750 responding companies indicated that they would not have been able to comply with recent U.S. FDA regulations without in-depth training courses. See page 11 about this report.

—Paul C. Focazio

Clambake on the Grill

Ingredients

48 littleneck clams
20 small red new potatoes (1 1/2” in diameter)
8 ears of unhusked corn
1 tsp. seafood seasoning (i.e. Old Bay)
parsley
roasting pan 15 x 11 x 3
(standard disposable aluminum pan)
aluminum foil
1/2 pound drawn butter (optional)

Method

Preheat grill on high. Scrub the clams and the potatoes. Put 1/2 inch of water in the bottom of the roasting pan and add seafood seasoning.

Lay corn on the bottom of the pan (trim the corn slightly if necessary to fit in the pan). Put the potatoes in around the outside edge of the corn, against the vertical wall to form a border or frame for the clams. Place scrubbed clams in the center on top of the corn. Cover pan tightly with foil to retain heat and steam and place in closed grill for 30 minutes. You may have to scrunch the aluminum pan a little to enable the lid to go down. (Check after 20 minutes - if clams are steamed open, shut off the grill.) Garnish with parsley and serve with drawn butter if desired.

For more information on seafood, surf over to the “Seafood Technology” pages on the NYSG web site, www.seagrant.sunysb.edu. From there, link to the New York Seafood Council’s website for which NYSG’s seafood specialist Ken Gall is technical advisor.



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