COASTLINES

Culture, Commerce and Computers:

Advocates for Tradition

Collecting Accurate Angling Data

A Fresh Start for New York Seafood

VOLUME 24 NUMBER 2 • A PUBLICATION OF THE NEW YORK SEA GRANT INSTITUTE • FALL 1994

COASTLINES

A Publication of the New York Sea Grant Institute

Volume 24
Number 2
Fall 1994

Director
Anne McElroy

Editor
Julie Zeidner

Assistant Editor
Judy Hogan

Layout
Pat MacNeill

Production Assistants
Sharon O'Donovan
Susan Hamill

Contributors
Caleb Kleppner
Shawn Riley
Trent Schneider
Julie Zeidner

Cover Photo
Montauk, NY by Heidi Hachmann

 Comments or inquiries regarding COASTLINES should be addressed to: Communicator, New York Sea Grant Institute, 115 Nassau Hall, SUNY at Stony Brook, Stony Brook, NY 11794-5001, telephone (516)632-9124. Subscriptions are free upon request.

Note from the Director:

The fall issue of COASTLINES focuses on some of the ways we use our coastal resources and how vital those resources are to us. One such legacy encompasses maritime traditions. While passed down through the generations, traditions such as clamming, iceboating and swimming, often take a back seat when municipalities consider waterfront planning strategies. A guide to help communities identify and protect their unique cultural and historic resources is the subject of "Advocates of Tradition," an article about a Sea Grant study aimed at helping town planners recognize and preserve these important traditions. Another article reports on how survey takers are getting a technological boost in their efforts to gather accurate and dependable information from anglers. Since poorly designed surveys can lead to invalid conclusions and poor policy results, a new computerized system developed by Cornell researchers described in this issue will enable fishery managers to choose the best angler survey design for the job — hopefully providing the best information for management purposes. Finally, COASTLINES takes a look at one of our most important coastal assets, seafood. Since New York's Seafood Council was formed four years ago, it has strived to promote a greater public awareness and appreciation of New York's seafood industry and its products. Through COASTLINES, Sea Grant hopes to inform and educate interested individuals about the value of our marine and Great Lakes heritage.

Features

Coastwatch

Currents

NYSG also has extension offices at:

- SUNY Stony Brook: 516.632.8730
- Cornell University, Ithaca: 607.255.2832
- Cornell University Horticultural Lab, Riverhead: 516.727.3910
- Cornell Cooperative Extension Center, Kingston: 914.338.3494
- State University College, Brockport: 716.395.2638
- SUNY Buffalo, Buffalo: 716.645.2088
- Cornell Cooperative Extension Center, East Aurora: 716.652.7874
- State University College, Oswego: 315.341.3042

Advocates for Tradition:

Folklorists Develop Guide to Help Communities Identify Cultural and Historic Resources

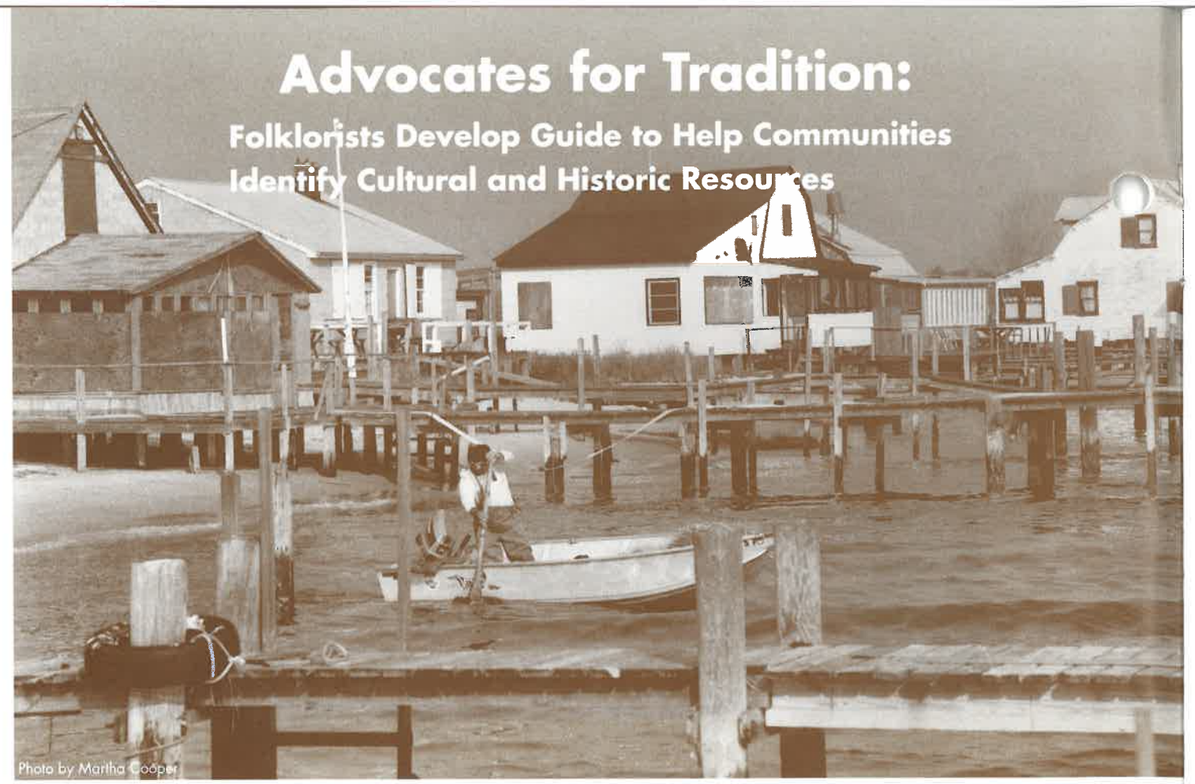


Photo by Martha Cooper

by Julie Zeidner

Long Island was a 120-mile swath of farmland and undeveloped coastline three hundred years ago. Despite development that converted the island into a tangle of shopping malls, freeways and subdivisions, powerful reminders of how it functioned centuries before still exist. Baymen today earn a livelihood the same way as their ancestors did, and maritime activities like theirs passed down from preceding generations along Long Island's coastline persist despite technological advances that have made these historic traditions more obscure.

Bay Shore, a community of 50,000 residents on the south shore of Long Island, is an example of such a place. Despite development that has now sealed off most coastal access to all but fortunate waterfront homeowners, a maritime tradition still continues there. Fifty part- and full-time commercial fishermen work in Bay Shore today.

Cultural and architectural resources like those found in Bay Shore are what make Long Island's historic maritime communities unique. In a recently completed New York Sea Grant study, researchers Nancy Solomon and John Eilertsen have developed a guide to help municipalities identify and protect the unique resources that maintain a community's historic traditions and character, as well as its economic vitality. Without such considerations, many towns like Bay Shore will go the way of the bulldozer and subdivision, and its past identity will vanish.

"There has been a lack of awareness among planners about the importance of waterfront traditions," said Solomon, a folklorist and author of *On the Bay*, a photographic guide to bay houses and maritime culture on Long Island's shoreline. "These traditions are not the sort of things you see as an outsider unless you know this has been a part of the community."

The expertise provided in this recent Sea Grant study will help town planners recognize how traditions are reflected in physical space as well as in activities, and how to preserve these important cultural and economic resources. Solomon is director of Long Island Traditions, a nonprofit organization that documents and presents programs on the ethnic, occupational and cultural traditions of Long Island. Eilertsen, director of the Suffolk County Folklife Center in Hallockville, has had a similar focus during the past 15 years working on programs that present Suffolk County's traditional heritage to the public.

Cultural and occupational traditions may be lost when people fail to recognize their existence. An increasing number of residents on Long Island, removed by development from the coastline and rural areas, have a greater sense of detachment from their environment, according to these researchers.

"You hear tales about people who build $2 million estates on the beach and then call the police to complain about the local fishermen and baymen working in front of their houses spoiling the view," said Eilertsen. "I always thought baymen were part of their view, that's the shame. Part of the problem is that people have become so removed from the source of their food. Kids and adults who buy their fruit and fish at the supermarket don't understand where produce comes from. They don't associate commercial fishermen with the food supply."

A tradition is a practice, custom or accumulated knowledge reflective of community aesthetics, values and knowledge that is passed down by word of mouth and example from one generation to another. Occupational traditions, like those performed by baymen, farmers, and carpenters, are frequently learned outside of formal or academic training. These skills are acquired through unstructured apprenticeship with a more experienced person such as a family member. For example, before there were trained architects, people learned through experience how to build houses suitable for the environment. The baymen's houses dotting the marshlands of the south shore are cultural artifacts of Long Island's unique geography and maritime history.

Recreational activities like clamming, crabbing, fishing, swimming, and iceboating are also cultural traditions associated with a waterfront environment that can be passed down from person to person. These traditions are often appropriated from smaller groups, like baymen's families, into the mainstream. For example, people who know how to clam using their feet, referred to as "treading," are practicing a tradition of families who have lived in shore communities for many generations. Stories, experiences and jokes unique to these experiences often overlap occupational and cultural traditions.

"Many planning documents don't talk about cultural traditions — that history, that rich sense of attachment people have to the waterfront," said Solomon, referring to the march of development occurring along Long Island's coastline. "People would feel a great loss not to have that visual experience, as well as access to the waterfront, how to teach their children to tread for clams, learn to swim or catch crabs."

Using Bay Shore as a model, Solomon and Eilertsen's study *The Cultural Resources of Coastal Waterfront Communities,* is designed to help planners determine what traditions are important to preserve. The researchers chose Bay Shore because the community is at a crossroads like other Long Island waterfront communities as town planners are only now working on their first waterfront plans. Bay Shore is also a large, multi-dimensional, multi-ethnic community. By studying the cultural resources of Bay Shore, these researchers were likely to encounter issues that most waterfront communities on Long Island are likely to face including development pressures, influx of new residents, and departure of traditional groups, public access, and industrial use.

Over the course of six months, the researchers interviewed select occupational groups like marina owners, ferry operators, fishermen, and baymen, and members of African-American, Jewish, Irish, Latino, and Italian communities to find out how they used the waterfront, and gather their opinions about the history and development of Bay Shore, as well as their perceptions about how it had changed. Clues researchers examined to measure the extent of economic and social waterfront activity included local and regional historic records, maps, photographs, and personal diaries.

Working with Nassau County historian Ed Smits, Solomon conducted an architectural survey that examined both contemporary and historic structures, land density, and whether waterfront

Photo by Martha Cooper

access was direct and visible. Environmental attorney Ken Robinson also assisted the researchers by developing a legal code on how a community can protect its tangible and intangible resources.

They recorded interviews with people who spoke about how suburban development decreased access to the waterfront and distinct ethnic traditions lost importance. Use of a number of creeks in Bay Shore, like Patchogue, for fishing and swimming by ethnic groups had declined because community members said they were concerned that the water was polluted. Duck hunting, another popular recreational tradition, was also on the decline.

Eilertsen, who recently interviewed baymen in East Hampton for use by writer Peter Matthiessen in his popular book *Men's Lives,* turned his attention to fishermen and baymen in Bay Shore, and their recollection of life in the community since the 1940s. The people he interviewed, mostly between the ages of 30 and 50, talked about the abundance of clams and shellfish during the 1960s. Commercial fisherman also told Eilertsen that development of Bay Shore, water pollution, overharvesting, and increasing government regulations had placed enormous pressure on them.

"Baymen told me that they saw no hope of restoring the industry or Bay Shore to what it was thirty years ago, that was not part of their expectation," Eilertsen said. "What many of them did hope was that they would be allowed to continue in their traditional activities, and that pollution in terms of road runoff could be alleviated, so that water quality would improve."

To understand how Bay Shore, a community within the town of Islip, has developed, one must first know something about its history. Farmers and fishermen settled in the area in the 1600s. By the 1800s, the Doxsee family opened one of the first clam canning factories on Long Island near there. By the 1800s, Bay Shore had become a popular resort town with modest inns dotting the shoreline. The oyster industry in Bay Shore died after the 1938 hurricane due to increased salinity and predators washed in when the barrier island separating the bay from the ocean breached, but traditional clamming continues to the present day. Italian and Jewish immigrants settled in the area and opened up businesses that served their communities. By the late '50s, hospitals built in Bay Shore attracted scores of health care workers.

The complexion of Bay Shore has changed since World War II with continual residential development. The view of Great South Bay that residents used to enjoy is blocked by private homes built in the 1930s, as well as other park and beachfront land usurped for parking lots, commercially-oriented ferry terminals, and marinas that mostly cater to people outside the community. The best vestige of an earlier era, Main Street, has boarded up old commercial buildings along it. Many of the historic homes around town with expansive gardens are also for sale, and risk being torn down or subdivided.

Despite all the changes that Solomon and Eilertsen have documented in their research, their work is not about nostalgia for the good old days.

"Our goal was not to have a community revert back to what it was fifty years ago," said Eilertsen. "Instead it was to try to create a document useful to planners in the planning process, something they could use to learn about a community's sense of identity, history, being, so that government could avoid the pitfall of doing something to a community, instead of with a community."

Community planners still face the challenge of deciding whose traditions to protect and whose interests to serve, said Solomon, noting that waterfront revitalization doesn't insure a community prospers or provides services to the people who live there.

"The Cultural Resources of Waterfront Communities" is a report Sea Grant researchers hope will allow waterfront planners on Long Island to gather valuable information without a great deal of time and expense. Eilertsen and Solomon recommend planners hire an ethnographer who can document the full range of tangible and intangible cultural resources within a community, and interpret their significance to both planners and residents.

By giving voice to diverse community members, planners are in a better position to protect the quality of life and traditions in their town. The Solomon and Eilertsen study could also be of use to the South Shore Estuary Reserve Council in their current work on a coastal resources management plan for the region. "Establishing a conservation district where commercial fishermen could continue to work in clean waters, creation of public waterfront areas where recreational traditions could take place and traditional architectural resources could be preserved are examples of the kinds of safeguards planners may want to implement after conducting a cultural and historic survey," Solomon said.

Photo by Martha Cooper

Photo by Ian Stupakoff

ARTIFICIAL INTELLIGENCE BOOSTS SURVEY RELIABILITY

by
Caleb Kleppner
and
Shawn Riley

You decide to cast one more time before calling it a morning. Although you don't hook anything on this last, wishful attempt, the trip was still a success. The weather was beautiful, the lake was quiet, and you even landed a few fish, including one worth cooking for dinner that night. As you pack up your gear and prepare to load the boat, a state conservation officer stops you and asks if you would mind answering a few questions. You are taking part in one of several hundred angler surveys conducted annually in the United States. In the future, there is a good chance the design of such surveys will be assisted by computer software developed by researchers at Cornell and Old Dominion Universities, and funded by the New York Sea Grant Institute.

Fisheries management requires accurate, dependable information about fish populations. Angler surveys are one of the most common and efficient ways to gather such information. In the U.S. alone, 60 million people — more than one out of every five people — participate in recreational fishing and spend nearly $100 billion annually. Results from angler surveys are an important component of almost every fisheries program and influence fisheries policy. Ron Essig, Federal Aide Coordinator for the U.S. Fish and Wildlife Service, estimates that $2.6 million was spent in the northeast from Maine to Virginia on angler surveys completed during 1993. Money spent on angler surveys typically represents six percent of the total federal aide apportioned to northeast states under the Sport Fishing Restoration Program.

Collecting statistically sound angling data is a complicated proposition. Because many people lack comprehensive training in angler survey techniques, many survey designers overlook the most current sampling theory and techniques, and their surveys subsequently suffer serious methodological flaws. Expertise is expensive and in short supply, so many surveys do not benefit from expert advice.

Poorly designed surveys can have significant costs. Such surveys not only waste scarce dollars, but also lead to invalid conclusions and poor policy formation. For example, a survey that produces an underestimate of a fishing harvest may result in excessively liberal fishing regulations, and a subsequent depletion of the fishery resource. Conversely, a survey that results in an overestimate of harvest may

lead to overly restrictive fishing regulations, placing unnecessary restriction upon anglers.

To help remedy the problem of survey design, Professor Bruce Wilkins of Cornell University has been leading an interdisciplinary team designing a computerized decision support system that will help fisheries managers choose the most appropriate angler survey design. The team includes Dr. Cynthia Jones, an angler survey expert at the Applied Marine Research Laboratory of Old Dominion University; Dr. Alberto Segre, a computer scientist formerly with Cornell University and now at the University of Iowa; and Caleb Kleppner and Shawn Riley, graduate students in the Department of Natural Resources at Cornell University.

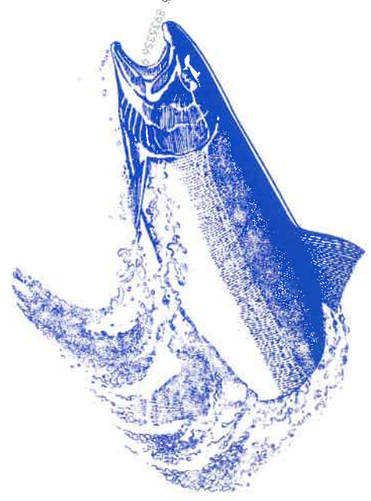
Decision support, or expert system, "can be thought of as a model of expert judgment i.e., the codification form of the inferences already present in the mind of the expert," states Agronomist David Rossiter, in an article for the journal *Soil Use and Management.* Expert systems are part of the developing field of artificial intelligence (AI), in which computers attempt to simulate human mental processes. Managers have used expert systems to facilitate decision making in many fields, including medicine, petroleum production, manufacturing and agronomy.

Expert systems behave like doctors trying to diagnose a patient. Doctors ask a series of questions, some of which are determined by previous answers, and partially based on responses, make recommendations and decisions. Thus, in designing an expert system, one has to determine the questions necessary for making decisions, and how to convert responses to the questions into decisions.

Codifying this simple type of expert opinion is easy. The system would ask two questions and follow the four simple rules to recommend a treatment. Real expert systems are much more complicated, but the idea is the same. The system uses pieces of information (answers to questions) and rules to convert the information into decisions.

The fisheries expert system designed by Wilkins and his team of researchers is called AFDAS — Aid for Designing Angler Surveys. The program asks a series of questions about the fishery and the type of information desired. AFDAS uses over 200 rules to make survey design suggestions. The first rule is that if the user wants information about catch or effort, AFDAS recommends an on-site survey. If the user wants socioeconomic or public opinion data, AFDAS favors an off-site method.

A simple example will illustrate the types of information that AFDAS uses and the results that it produces. Imagine designing a survey to estimate catch on a lake with the following conditions: fishing pressure originating from private access is between



15 and 25 percent of the total pressure; it takes less than three hours to traverse the entire shoreline; there are five public access points, two of which are heavily used; and less than 15 percent of the fishing pressure occurs at night. In this situation, AFDAS would recommend a roving creel survey. A traditional access point survey (such as the one described earlier in this article) would be the next most appropriate, followed by a bus route survey. An aerial survey would be inadequate because it is impossible to estimate catch from an aerial survey alone.

Questions that AFDAS poses include: number of access points, fishing pressure at each point, length of shoreline to be surveyed, the need to recall a specific trip, the importance of anonymity, and the length of the interview. Based on the responses, AFDAS quantitatively evaluates the four different on-site survey methods — traditional access point, roving creel, bus route and aerial — and three off-site methods — telephone, mail and door-to-door.

The system also has modules for making statistical decisions about sample size and confidence level, for randomly choosing sampling days and times, and for relating the budget of the survey to the recommended sample size.

In addition to aiding survey design, AFDAS is a valuable educational tool. The program's interactive nature allows the user to experiment with different scenarios and explore how the different parameters influence the final results. In the statistical module, for example, the user can investigate the tradeoffs between sample size, confidence level and standard deviation.

From most points in the program, an on-line reference utility supplies literature references relevant to the current point. By referring to this literature, users will learn why AFDAS functions as it does, as well as how to apply the most recent developments in the field to their survey design needs.

The AFDAS development team has gone to great lengths to assure that the system will fulfill the needs of the intended users. The most likely users of the system are conservation officials conducting smaller surveys than those being conducted statewide. By incorporating comments received from fisheries researchers, managers and educators at conferences, and by having people test the program in 14 states, some Canadian provinces, and in places as far away as Norway, the research team believes it has created a program that will serve the needs of fisheries management.

Photo by R.G. Rowland

Another reason for funding this project was to investigate artificial intelligence (AI) applications in natural resource management. Although an evaluation of this particular expert system will have to await the release of the final version of AFDAS, it seems clear that AI will see an increasing role in marine management.

Caleb Kleppner, a Cornell University graduate student in resource policy management, has experience in mathematical modelling and programming as a contractor to the Environmental Protection Agency.

Shawn Riley, a Cornell University doctoral student in natural resource policy management, was a fish and wildlife biologist for 11 years with the State of Montana.

A Fresh Start !

New York Seafood
a healthy choice
NEW YORK'S SEAFOOD COUNCIL

New York's Seafood Council and Sea Grant Team Up to Market Seafood

by Julie Zeidner

■ At an elegant luncheon hosted by the New York Seafood Council this August in Hampton Bays, Long Island, guests sampled local seafood they might never have tasted before. Some of New York's finest chefs prepared "Hidden Treasures" from New York waters like skate, sea robin, mackerel and cape shark for more than 100 guests including government officials, restaurant owners, members of the seafood industry, and the press.

■ The "Hidden Treasures" seafood reception was the beginning of a new marketing effort for New York's Seafood Council to increase awareness of fish that are both plentiful and an extremely good value because of their current low demand. With stocks of many traditional species of fish in the Northeast diminishing, efforts to interest consumers in alternative products are especially important now.

■ Events like "Hidden Treasures" that promote seafood are also important to counter misperceptions or lack of understanding about New York's seafood products. While members of New York's seafood industry have much to be proud about, much of the recent attention focused on their industry has been negative. Concerns about seafood product handling, quality, and safety, and the health of marine life are ongoing. Tighter government regulations and harvesting at maximum capacity have also placed greater pressure on fishermen. These and other issues are creating consumer uncertainty about seafood and its safety.

■ Since New York's Seafood Council was formed four years ago as a not-for-profit marketing and promotion organization, it has strived to promote a greater public awareness and appreciation of New York's seafood industry, and the importance of seafood to the state's economy and culture. The creation of this seafood education and marketing organization is a culmination of years of collaboration between various sectors of the seafood industry, New York Sea Grant, state agencies, and business groups.

■ Before the Seafood Council existed, public confidence in seafood had started to decline in New York. Consumer concerns about seafood hit a peak in the late 1980s when floatable debris was washing up on New York's coastline, brown tide was threatening Long Island's shellfish industry, and an increasing number of news stories were calling for tighter seafood inspection regulations.

■ "A perception was being created that local products were not as good as products from somewhere else," said Ken Gall, a seafood specialist with New York Sea Grant, and one of the key players in establishing New York's Seafood Council. "The bottom line was that this perception had no basis in reality."

■ To counter misperceptions about New York's seafood industry, members of New York Sea Grant, the New York State Department of Environmental Conservation, the New York State Department of State, as well as representatives from tourism, farm, and restaurant bureaus teamed up to develop a strategy in 1988. They recognized that one of the problems during this time was that seafood producers, harvesters, processors, distributors, and retailers lacked a unified voice to market their products. While more than 30 organizations have historically represented different sectors of the seafood industry like baymen, lobstermen, trawlers, and retailers, there was no one group that focused on New York's seafood products and the industry as a whole.

■ "The challenges facing baymen are different than those challenges facing trawlers, but taken collectively the industry has common goals and interests, and is quite large," said New York's Seafood Council President Roger Tollefsen, a chemical engineer by training who has owned and operated several restaurants, seafood markets, and marinas in the Hamptons. "Twenty-five thousand people in New York State earn a living from work in the seafood industry. This is in contrast to the perception of just a few fishermen working out on the east end of Long Island. This is a traditional industry, but it is also big time business."

■ Recognizing the economic and cultural value of the seafood industry, New York Sea Grant initiated discussion between various sectors of the industry about the possibility of forming an umbrella organization for seafood marketing and communication. Out of those initial meetings the Marine Resources and Products Council (later renamed New York's Seafood Council) was formed and an informal board of directors was created with start-up support provided by the Long Island Tourism Commission. After six months, the Long Island Tourism Commission dropped out of the effort, and Sea Grant's Ken Gall and John Scotti of Cornell Cooperative Extension played a key role in helping the Council develop.

■ One of the Council's first missions was to remind the public that New York's seafood industry is still worth boasting about. The New York City area has one of the largest and most diverse seafood markets in the world. More than 500 species of finfish and shellfish pass through New York's seafood market each year coming from local ports such as Montauk, Shinnecock, Greenport, and Freeport on Long Island, as well as from around the country and world. The local harvest includes products like lobster, flounder, clams, and oysters, and seasonal species such as bluefish, weakfish, tuna, and

shark. In 1993, commercial fisherman landed more than 54,000 lbs. of fish in New York worth over $54 million, according to the National Marine Fisheries Service. Economists estimate that the total contribution of these seafood products to the local economy is three to four times greater than the dockside value alone reported each year.

■ The Marine Resources and Products Council received its first grant to begin a promotional program for New York seafood products from the state's Regional Economic Development Partnership Program in 1990. The Council made a series of efforts to demonstrate that New York's seafood industry was committed to producing a top-rate product. A 30-second television commercial focusing on New York seafood products aired in the summer of 1990, as did a series of radio announcements.

■ The Council also started a voluntary seafood quality assurance program with Gall advising seafood retailers and Scotti coordinating activities with fishing vessel owners. Sea Grant

Ken Gall and Roger Tollefsen. Photo by Julie Zeidner

helped 20 seafood retailers from Queens to the Hamptons follow a series of guidelines for quality control and sanitation, processing, and record keeping. The same approach to food safety control (HACCP) was proposed by the Food and Drug Administration earlier this year.

■ The Marine Resources and Products Council became a not-for-profit membership organization in 1991 with formalized by-laws and a board of directors comprised of 14 members and two advisors, who meet monthly. The organization also underwent a name change to New York's Seafood Council. Board and voting members must be engaged in the commercial-controlled production, harvesting, processing, distribution, sale or promotion of finfish, shellfish, and other aquatic products.

■ The organization devised a small, but highly effective marketing program targeted at the media and consumers. "Long Island Fresh" was the first long-term marketing campaign the Council has pursued to help consumers identify when local seafood products are most abundant and affordable. This ongoing program features monthly press releases focusing on the Council's fish and shellfish "pick of the month," recipes and nutritional information. A "Long Island Fresh" poster, which features a unique composite fish made up of local seafood products, was designed by a Long Island advertising agency. The poster has been widely distributed and continues to attract attention. Tollefsen is also a regular guest on the popular *Arthur Schwartz Food Talk* radio show that airs the first Wednesday of the month on WOR radio in New York to pitch the Seafood Council's "Pick of the Month."

■ Stories about seafood safety continue to arise, especially during rating periods when television stations produce sensational stories to attract viewers. Since the networks are based in New York, New York's seafood businesses are often under more scrutiny, and these stories have more of an impact on the seafood industry here than elsewhere. Members of the Seafood Council recognize the importance of having a spokesperson available to respond to media inquiries.

■ "The seafood industry didn't have a unified

"We're paying the price of scrutiny."

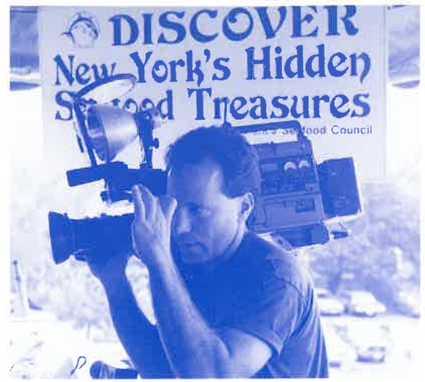


Photo by Julie Zeidner

spokesperson. Through the Seafood Council, under Roger Tollefsen's leadership, when something does come out in the media we are able to react in a positive manner and not make it worse," said Dave Schaper, owner of the White Cap Fish Company in Islip, and a founding member of the Seafood Council and a member of the Seafood Retailers of New York.

■ Another important function of the New York Seafood Council is to provide feedback testimony about industry issues to state and federal legislators. Last year, Tollefsen and Gall testified at a special congressional hearing on seafood safety convened by Representative Thomas Manton, chairman of the U.S. House Subcommittee on Fisheries Management.

■ "The Seafood Council was the only member of the seafood industry asked to testify on seafood safety, and, as its president, I had something positive to say," said Tollefsen. Recent calls by the FDA for mandatory seafood inspection under a program called Hazard Critical Control Point (HACCP) has had an impact on the market, he noted.

■ "We're paying the price of scrutiny – by looking at the industry under a microscope it makes us seem like we're in crisis," Tollefsen said. "The fact is that seafood overall is one of the safest and most nutritional foods you can eat, and I just want to remind officials to keep things in perspective because consumers are getting confused."

■ Recognizing seafood's importance to the economy, the New York State Legislature has provided funding for New York's Seafood Council on an annual basis starting at $80,000 in fiscal year 1991-92, and $100,000 in subsequent fiscal years. State Senator Owen Johnson, chairman of the New York State Senate's Environmental Conservation Committee, has been a key supporter of the Seafood Council's efforts.

■ "Part of our marketing strategy is to help the state of New York understand the industry's importance, its potential, and its problems," said Tollefsen. "The industry is being challenged daily on several different fronts by environmental impacts, species management, and user group competition – this in addition to the general stress of running a business."

"...New York's seafood industry is still worth boasting about."

Chefs at "Hidden Treasures" event. (L to R) Gabriel Boivin, Grand Central Oyster Bar, New York; Starr Boggs, Star Boggs' Restaurant, Westhampton Beach; Peter Armellino, Indian Cove Restaurant, Hampton Bays; Jerry Hayden, East Hampton Point Restaurant; Colleen McGuirk, Crescent Beach Club, Bayville. Photo by Heidi Hachmann.

■ After relying on industry volunteers to operate the Seafood Council in their spare time, the Council finally was able to hire a part-time communications specialist, Heidi Hachmann, in 1993. In a collaborative effort between New York Sea Grant and the Seafood Council, Hachmann was brought on board full-time starting in April, 1994. Working closely with Gall at New York Sea Grant's Stony Brook office at the State University of New York, she is responsible for the production of a quarterly New York Seafood Council newsletter, monthly press releases, events like the "Hidden Treasures" seafood reception, and public education displays.

■ In other collaborative efforts with the Seafood Council, Gall has continued to help members of the seafood industry understand the HACCP-based system, and integrate it into their operations. Individual seafood businesses are also learning how to diversify and develop new markets for their products through joint efforts with the Council, Sea Grant, and other groups.

■ Supporters of the Seafood Council point out that its strength is the fact that everyone in the council has a stake in its activities and benefits from its existence.

■ "The Seafood Council has done so many good things," said Dominic Jacangelo, director of the New York State Senate Environmental Conservation Committee. "The Hidden Treasures" event, which featured nontraditional species, is one example of how the Seafood Council is educating consumers about what's available and when they can get the best value for their dollar. They are also setting standards for their own members in terms of everything from how seafood ought to be identified to sanitary conditions for its distribution and sale. People who participate in the Seafood Council have provided a good example for the entire industry."

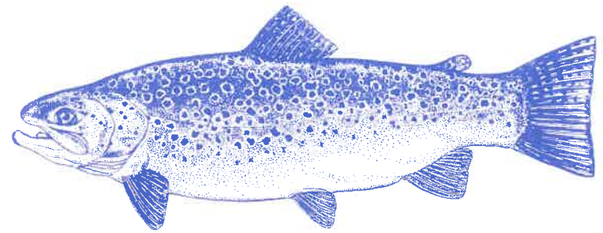
New York Sea Grant Publications

Please send requests for the following recent publications, including checks payable to:

New York
Sea Grant Institute
115 Nassau Hall
SUNY at Stony Brook
Stony Brook, NY
11794-5001
or call 516.632.9124

Feeding Habits of Cormorants in Eastern Lake Ontario
David B. MacNeill
Regurgitated digestive pellets of double-crested cormorants collected at Little Galloo Island in eastern Lake Ontario were analyzed for the presence of fish remains during 1992 and 1993. This study, funded by the National Biological Survey, the United States Fish and Wildlife Service, and the New York State Department of Environmental Conservation, aims to determine changes in cormorant feeding habits during the cormorant nesting cycle, and fish losses from cormorant predation in the eastern basin of the lake.
12 pages. $1.00.

Selected Boat Ramps in the Marine Waters of Nassau and Suffolk Counties: Summer Use Characteristics
Mark H. Malchoff
This study is a first step to characterize recreational boat use for trips originating from and returning to nine state, county, or local municipal ramps in Nassau and Suffolk Counties on Long Island. Information could challenge perceptions about whether open access facilities are subject to more severe crowding, vandalism or other problems than residency restricted sites. Such information may be useful in future discussions between officials of the New York State Department of Environmental Conservation and municipalities, who wish to explore opportunities for access site development using federal or state monies in return for local maintenance and open access agreements.
18 pages (plus appendices). $.50.



Other newsletters available from Sea Grant:

- Charterlines
- Coastal Educators News
- Commercial Passenger Fishing Vessel News
- *Dreissena!*
- Marine Facilities Notes
- Marine Network News
- New York Great Lakes Water Level Update
- Perspectives: Great Lakes Program

Journal Reprints

Modeling Steelhead Population Energetics in Lakes Michigan and Ontario
P. S. Rand, D. J. Stewart, P. W. Seelbach, M. L. Jones and L. R. Wedge. 1993. Transactions of American Fisheries Society. 122:977–1001. Free.

Scattering of Water Waves by Vertical Cylinders with a Backwall
S. Kakuno, K. Oda, and P. L.-F. Liu. 1992
Journal of Waterway, Port, Coastal, and Ocean Engineering. Free.

Genetic Comparison of Naturally Spawned and Artificially Propagated Lake Ontario Trout Fry: Evaluation of a Stocking Strategy for Species Rehabilitation
J. E. Marsden, C.C. Krueger, P. M. Grewe, H. L. Kincaid, and B. May. 1993. North American Journal of Fisheries Management. 13:1304–317. Free.

Spatial Models of Salmonine Growth Rates in Lake Ontario
A. P. Goyke and S. B. Brandt. 1993.
Transactions of the American Fisheries Society. 122:870–883. Free.

Moderate Hypercapnia: Cardiovascular Function and Nitrogen Elimination
D. Anderson, J. George and C.E.G. Lundgren. 1993. Undersea & Hyperbaric Medicine. 20(3):225–231. Free.

Ontogeny and Otolith Microstructure of Bluefish *Pomatomus saltatrix*
J.A. Hare and R.K. Cowen. 1994. Marine Biology. 118:541–550. Free.

Ontogenic Changes in Microhabitat Distribution of Juvenile Bay Scallops, *Argopecten irradians irradians* (L.), in Eelgrass Beds, and Their Potential Significance in Early Recruitment
Z. Garcia-Esquivel and V. M. Bricelj. 1993.
The Biological Bulletin. 185:42–55. Free.

South spit of north Sandy Pond, Lake Ontario. Photo by Pat MacNeill

Our Lake Ontario Sand Dunes

The sand dunes along the eastern shore of Lake Ontario are an integral part of a coastal barrier environment consisting of beaches, sand dunes, embayments, and wetlands. This barrier system, which extends for roughly 16.5 miles, contains the largest and most extensive freshwater sand dune formations in New York State. In fact, the only dunes higher than these in the entire northeastern United States are on Cape Cod in Massachusetts.

The bedrock formations and topography of the eastern Lake Ontario region have a geologic history of more than 400 million years. The surface formations and landforms, however, have a history no further back than the final advance and retreat of the last glacier 10,000 to 20,000 years ago. As the last glacier receded across the present Lake Ontario basin approximately 12,000 years ago, melting glacier water formed Lake Iroquois that extended far south of the existing Lake Ontario shoreline. This time period serves as one benchmark used in describing the formation of existing landforms, including the sand dunes in the eastern Lake Ontario region. Following the Lake Iroquois period, four distinct lake-level stages (Sandy Creek, Skinner Creek, Dune, and North Pond) resulted in sand deposits of different types and in different locations on the coastal and upland areas of the Lake Ontario basin. These geologic phases resulted in what many consider the most dramatic feature of the eastern lake Ontario coastal barrier system: the extensive formations of sand dunes, some cresting at more than 70 feet above the surface of the lake.

The eastern Lake Ontario dune-wetland system is treasured by seasonal visitors for swimming, sunbathing, picnicking, camping, hiking and bird watching. Thousands of visitors a year visit the shoreline, and the number continues to grow annually. The dune system has an important ecological value. It provides habitat for a variety of birds including the sanderling, sandpiper, and plover, and fauna including the red and gray fox, great blue heron, and snapping turtle. The dunes also form a barrier that absorbs the energy of storm-driven lake waves, creating calmer conditions in the low-lying expanses behind the barrier where extensive, high quality wetlands have developed, with the highest concentration of state-designated Significant Coastal Fish and Wildlife Habitats in New York State (NYS).

Wetlands are an important buffer that protect Lake Ontario water quality from the impact of activities that occur on adjacent uplands. Wetlands trap sediments, pollutants, and excess nutrients carried by runoff. They also store excess water during high water periods, and release it during drought. Without an intact and healthy dune barrier on our Lake Ontario eastern shore, these wetlands would be lost.

Our dune barrier is always changing. Its protective capacity is not based on the ability to stand firm before the forces of wind and waves, but rather on the ability to give way during storms and high water and rebuild in times of gentle breezes and low water.

The cycle of erosion and rebuilding occurs as long as sand is not prevented from moving, and plants adapted to shore conditions have the necessary conditions to grow and trap newly deposited sand. Visitors to the Lake Ontario eastern shore affect the dunes when they step or drive over the beachgrass that anchors the sand in place and protect dunes from wind erosion. While dune plants are specially adapted to the challenges nature presents, they are particularly sensitive to human disturbance. Damaged vegetation is less capable of providing a windbreak, and as a result wind velocity increases near the ground where sand movement occurs. Progressive wind erosion results in the blowouts seen at intervals on our dunes, and eventually damages the vegetation on the interior dunes that had previously been protected by foredune plant growth. In extreme cases, sand can move rapidly inland burying the wetlands.

Other consequences of recreational use of our dunes may include harassment of waterbirds, as well as migrating and nesting shorebirds. These birds are extremely intolerant of visitors, and are easily denied nesting habitat by the very presence of recreational beach/dune users.

While dried driftwood makes great campfires, this and other natural debris washed up by the lake also help trap sand; and are the only source of nutrients available for plant growth on the foredunes. Also, beach campfires leave unsightly scars and pose a fire threat to surrounding vegetation in this dry habitat.

Dunes can recover from overuse, as long as the right conditions exist. However, along some stretches of our Lake Ontario sandy beach, nature no longer provides sufficient sand for damaged dunes to be rebuilt to their present extent. As a result, it is very important that our dune areas be used in ways that do not contribute to their destabilization.

The New York State Legislature created a variety of laws that protect our dunes from destabilizing uses. These laws regulate what we may legally do on the Lake Ontario sand dunes. The operation of vehicles on foredunes; the disturbance of bird nesting and breeding sites; foot traffic heavy enough to cause foredune erosion; and development of surface-level foot trails across foredunes is prohibited.

Planted beach grass. Photo by Julie Zeidner

This article is drawn from Our Lake Ontario Sand Dunes: A Resource Notebook, by Dave White, a New York Sea Grant specialist and Sandy Bonanno, a New York Sea Grant Scholar. The notebook includes facts sheets, brochures and activity worksheets relating to the sand dune ecosystem along the eastern shore of Lake Ontario. It is available from New York Sea Grant for $10.

CURRENTS

Flatfish Culture Workshop for Scientists, Managers and Aquaculture Operators

Wild stocks in the Northeast ground fisheries are seriously depleted, and aquaculture is increasingly being viewed as a tool to enhance these wild stocks or provide an alternative supply of high quality fish products. Flatfish culture is being considered in several areas, yet little is known locally about it.

At a Flatfish Culture Workshop co-sponsored by the New York Sea Grant Institute and the National Coastal Resources Research and Development Institute in October, national and international technical experts working in the field of fisheries sciences and aquaculture gave presentations summarizing "state-of-the-art" technical knowledge available on flatfish culture to help local and regional businesses, coastal, and ocean resource managers make sound business and management decisions, and establish a research and implementation agenda to help guide future development of this industry. A workshop report will be available from New York Sea Grant for a nominal charge.

Two Biotechnology Projects Funded Under New Federal Initiative

The National Sea Grant College Program has awarded New York Sea Grant $300,000 in September 1994 in support of a new national initiative on marine biotechnology.

The federal marine biotechnology initiative will provide funds over the next year for two projects. The recently discovered marine natural product discodermolide will be studied by Dr. Jon Clardy of Cornell University and Dr. Stuart Schreiber of Harvard University. By establishing how discodermolide identifies its cellular target and the structure of the drug-receptor complex, this project will provide valuable insights that could lead towards the design of better immunosuppressive drugs used to facilitate organ transplants and potentially treat such autoimmune diseases as insulin-dependent diabetes and rheumatoid arthritis.

The other project, led by Dr. Glenn Prestwich of the State University of New York at Stony Brook and co-investigator Jim Hayard of Collaborative Laboratories, Inc., a private biotechnology firm, will investigate the juvenile growth hormone methyl farnesoate, which is thought to play a role in the maturation of shrimp reproductive systems. Prestwich's study could lead to a commercially viable technique for increasing egg production in shrimp. This work is being conducted jointly with researcher Hans Laufer at the University of Connecticut under a separate grant to Connecticut Sea Grant.

Is the Long Island Sound Getting Better or Worse?

Marine scientists and resource managers gathered to discuss the role of research in assessing the status of the Sound Sept. 30 at the second annual Long Island Sound Research Conference.

During the one-day forum at the State University of New York at Stony Brook, some of the country's leading researchers presented papers, and discussed some of the most pressing environmental problems facing the Sound including hypoxia, contaminants, and the status of its marine resources. The theme of this year's conference was the role of scientific research in determining whether the Sound's condition is improving or not, and how research efforts can gauge this.

After nine years of effort, state and federal officials in September signed an ambitious plan to cleanup Long Island Sound that will cost as much as $6 billion. The Long Island Sound Research Conference represented a timely follow-up in understanding the way current research will contribute toward understanding the environmental challenges facing the Sound, and solutions for its improvement.

For a copy of the conference abstract book (now available) or conference proceedings (available early next year) contact New York Sea Grant.

Niagara Plume Study Tapped for EPA Effort

In order to understand how the Niagara River impacts Lake Ontario, a Sea Grant project led by Dr. Joseph Atkinson of SUNY Buffalo will model the river's plume, which accounts for about 80 percent of total inflow to Lake Ontario, and is the single largest source of contaminants and sediments to the lake. The effect of the Earth's rotation on the plume is being modeled through the use of a specially-designed rotating table, which is providing insights into the transport and spreading characteristics of associated sediments and contaminants. The Environmental Protection Agency (EPA) recently tapped into the information being generated by this effort for use in a larger, Great Lakes-wide modeling program. Water quality and hydrodynamic models are being linked in a GIS (Geographical Information System) framework for application to Great Lakes issues. The Sea Grant study provided input for evaluating the impact of the Niagara River discharge as part of a hydrodynamic model for Lake Ontario that will be fed into the EPA's GIS system.

New York Sea Grant Awarded More than $453,000 for Zebra Mussel Research and Outreach

The National Sea Grant College Program has awarded the New York Sea Grant Institute more than $453,000 over the next three years in support of three zebra mussel research projects and two outreach projects. Of the 66 zebra mussel research and outreach proposals submitted nationwide, only 24 were accepted for funding. Five of these approved proposals were from New York — the most from any state.

- Concern about the ecological impact of the zebra mussel's filter-feeding activities that shift the carbon (or energy) flow in the food web, which impacts fish populations, will be the focus of a study by Drs. Edward Mills and Lars Rudstam of Cornell University. Their research will combine field observations, laboratory and field experiments, modeling and analysis of a 36-year database for Oneida Lake (before and after the invasion of zebra mussels) to predict the effects of zebra mussels on fish populations.

- In another zebra mussel project, Drs. Marc Fischer and Sandra Nierzwicki-Bauer of the Renssalaer Polytechnic Institute will try to develop a genetic tool to study the veliger ecology (distribution, transport, and mortality) of the zebra mussel. Key to the management of zebra mussel infestation and protection of pristine environments from zebra mussel invasion is a rapid and accurate detection method of the planktonic form of the mussel. Reliable and simple methods for the detection of zebra mussel eggs and veligers in the water column do not currently exist.

- The Susquehanna River Basin Commission, resource users in the Susquehanna region and those concerned with the freshwater tributaries of the Chesapeake Bay, need to know whether zebra mussels will be a serious threat to this system. Dr. Willard Harman of the State University of New York College at Oneonta will study why an apparently optimal habitat like the Susquehanna River, chronically exposed to veligers, does not support viable colonies of adults. This research could help determine what other systems may be immune to zebra mussel infestations.

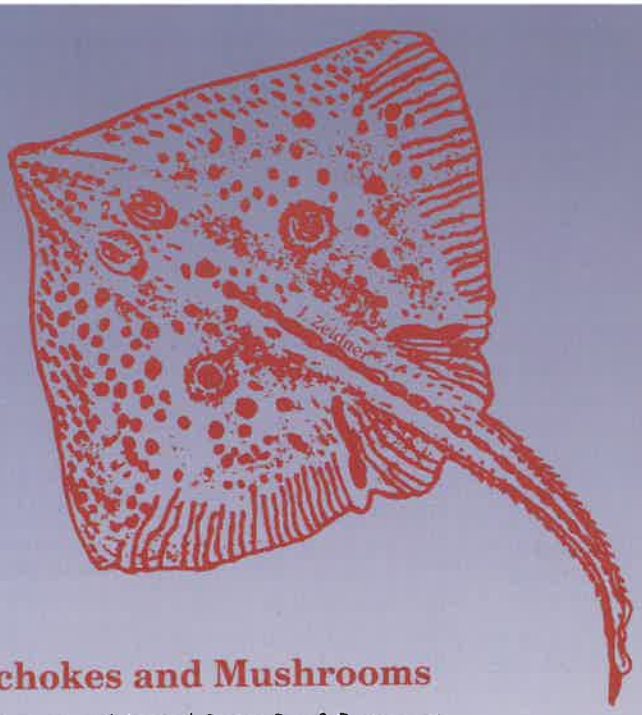
- Two New York Sea Grant outreach efforts on the zebra mussel — one ongoing project and one new project received funding from the National Sea Grant College Program. The National Zebra Mussel Information Clearinghouse, which collects, archives and disseminates information gained about zebra mussels since 1990, has received funds to continue and expand its operations so that the National Oceanic and Atmospheric Administration, other federal/state agencies, and impacted groups are kept abreast of progress made in zebra mussel control research.

- In a new effort led by Chuck O'Neill, New York Sea Grant Coastal Resources Extension Specialist, Sea Grant and the USDA Extension Service are embarking upon a nationwide zebra mussel training initiative designed to broaden support and capability for zebra mussel outreach education and technology transfer programming by state Cooperative Extension Services and multi-agency state and regional zebra mussel task forces. It will assist states throughout the country to prepare for the arrival of zebra mussels in their regions. An Interagency Program Advisory Committee of federal agencies currently involved in zebra mussel research and technology transfer will provide program guidance and help foster interagency participation. The collaborative effort with other Sea Grant Extension Programs will lead to the development of fact sheets, identification of nontraditional audiences who may be impacted by the zebra mussel, electronic formatting of zebra mussel educational materials, planning of a nationwide zebra mussel satellite teleconference, and regional training conferences.

Ultraviolet Light to Fight Zebra Mussels

Preventing zebra mussel larvae from settling in industrial intake pipes can save enormous cleanup costs that result when colonization is allowed to occur. Dr. Linda Chalker-Scott of SUNY College at Buffalo is developing an ultraviolet radiation system that could prevent larvae from settling where they might create problems. A preliminary grant to her research team showed wide-range ultraviolet light held promise as a control method, and a subsequent grant is allowing them to further refine this technology. Recently, a new, more powerful radiation source was developed, which uses microwave energy to ionize a special mixture of gas in a quartz envelope. The gas mixture is designed to radiate at specific ultraviolet wavelengths, and is several orders of magnitude more powerful than previous sources used. On the basis of lab results, exposure times of less than a second are expected to be effective in preventing colonization.

Seafood Corner



Skates are among the most ancient of fish living today in the ocean. Like sharks, skates have a primitive skeleton that is made of cartilage instead of bones.

- Several different species of skates (members of the biological Family *Rajidae*) are common in the Northwest Atlantic Ocean. Two of these species, the Winter Skate (*Raja ocellata*) and the Thorny Skate (*Raja radiata*), are commonly used for food. Skates can be found from shallow waters along the coast to depths of 2,000 feet or more. Although they are not known to undertake large scale migrations, they are thought to move offshore during the summer and fall, and inshore during the winter and spring.
- The edible part of a skate are its two wings. Fishermen generally remove the wings at sea and ice them down before returning to shore.
- Skates prefer to eat mollusks, crustaceans, and small fish that give their flesh a sweet mild shellfish-like taste.

Curried Skate Wing with Julienne of Artichokes and Mushrooms

An original recipe by Chef Gabriel Boivin - Grand Central Oyster Bar & Restaurant.

4 Skate wings (about 6–8 oz. each)
1/2 lb. extra large mushroom caps
1 lemon
2 tablespoons butter
Salt & pepper
1/2 lb. Artichoke bottoms
2 tablespoons olive oil
Pinch of curry
Splash of soy sauce

Julienne clean mushroom caps and artichoke bottoms, add lemon juice and toss. Add one tablespoon of olive oil to a heated non-stick frying pan. Sprinkle each skate wing with a pinch of curry, salt, and pepper. Place skate wings in frying pan and saute on a high flame for about 1 1/2 minutes. Remove skate from pan.

Add the remaining tablespoon of olive oil to the frying pan and add the julienne of mushroom caps and artichokes. Saute no longer than 2 minutes. Salt and pepper. In a small saucepan, melt the butter and add a splash of soy sauce to make a beurre noisette.

Place the skate wings on a warm plate, top with the mushroom artichoke julienne and beurre noisette. Serve with steamed potatoes.

Serves 4.

Nutritional Information

(for 3.5 ounce serving of raw edible fish)*

Calories:	93
Protein:	20.3 grams
Total Fat:	0.7 grams
Saturated Fat:	0.1 grams
Omega-3:	0.2 grams
Sodium:	90 milligrams
Cholesterol:	56 milligrams

*Source: NOAA Technical Reports: NMFS 55, 1987 and NMFS F/SEC-11, 1981.

New York Sea Grant
115 Nassau 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 NUMBER: 65