

Where They're at Is Where It's at!

by Mike Voiland, Sea Grant Specislist
in Brockport

Although much excitement has stemmed from the successful introduction of trout and salmon into Lake Ontario, most observers admit the resulting fishery to date is mostly a seasonal phenomena. In the spring, with brown, lake and rainbow trout hugging the warmer southshore of the lake, fishing success is almost too good to be believed. Likewise, come fall, trout and salmon are again easily available in nearshore and stream spawning areas.

Unfortunately, it's been during the summer boating, fishing, vacation and tourism season that the salmonids, particularly the attractive rainbow, coho and chinook, have been toughest to find and catch. With some 7,500 square miles of open water to roam and with a preference for deeper, cooler strata during the warm-weather months of June, July and August, successful trout and salmon fishing is still very much a hit-or-miss guessing game — a game played even by the very best and skillful charter captains and expert anglers. Most private businessmen and public officials involved in the lake's fishery development believe that, once summer catches of all salmonid species become more consistent, sport fishing along the lakeshore will blossom into a full-fledged industry.

In January 1981, the Sea Grant Institute awarded a research grant to Dr. Jim Winter of SUNY Fredonia and Dr. Jim Haynes of SUNY Brockport. The objective of their investigation was to determine the summer whereabouts of Lake Ontario trout and salmon. The hope was to enhance the summer harvest of salmonids by

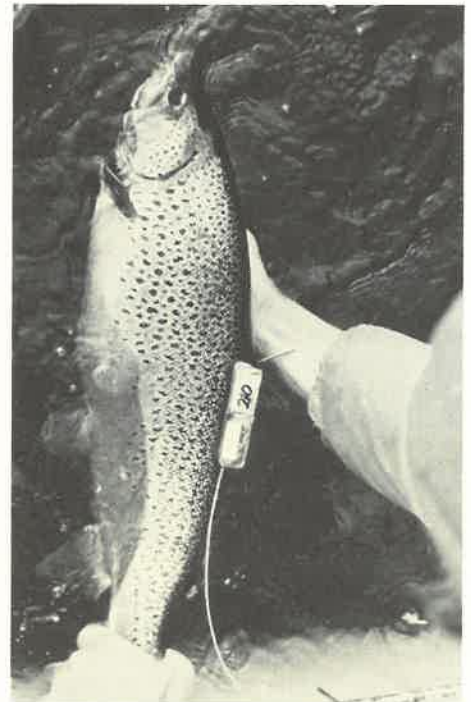
anglers and, consequently, to improve lakeshore economic development through increased sportfishing activity and tourism.

Over the last 20 months, Haynes, Winter and a small group of graduate and undergraduate students have waged a "battle" for salmonid locational information on land, at sea and in the air. The researchers have tracked fish tagged with radio transmitters in spring, summer and fall using trucks, boats and airplanes. In addition, a systematic vertical netting program has been carried out to gather locational and habitat preference data that radio-telemetric work cannot inventory.

Although field work will be ongoing through the end of the year, the researchers had added significant pieces to the salmonid location puzzle by this past summer. These contributions, which are leading to greater angler understanding and harvest of salmonid species, are outlined below:

- **Late spring movements:** The project determined that browns and rainbows remain relatively close to shore until specific nearshore surface temperatures are reached in late spring. According to Haynes, these species exhibited long-distance, nearshore movements. "Fish would easily move miles in a single day. One pair of rainbows, a male and female, moved from a tagging site in Hamlin, west to Wilson, and then up the Niagara River — a total distance of some 70 miles in 18 days," said Haynes.

- **Thermal bar effects:** The researchers found that the thermal bar — a surface water zone in which spring water temperatures drop sharply down to a dense, 39 degrees (F.) — acts as an attractant to rainbow trout. "Our observations and data suggest that rainbow trout migrate offshore in the spring only as the bar does," said Dr. Haynes. "The density and temperature difference at the bar seems to act as a 'corral' behind which



A Lake Ontario brown trout, with radio transmitter mounted just below the dorsal fin, is lowered for release into lake waters.

rainbows seem to stack. In June, when the bar moves further out and dissipates, rainbows break through to the range of the open lake." Many anglers informed of the thermal bar effect by the researchers and extension specialists improved their catches in late spring of 1982.

- **Thermocline tendencies** — The study confirmed that brown and lake trout were most often found at the thermocline, or zone of rapid temperature drop in the water column. But Haynes said that their work indicated the lake trout preferred the lower reaches of this zone, while brown trout showed no real affinity for any one part of it. "The data suggests that anglers should find the zone where the thermocline intersects the lake bottom and fish appropriately for the species they seek.

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Fishery Managers Consider Future of Lake Trout

by Mike Voiland, Sea Grant Specialist in Brockport

State and federal fishery managers have begun sending a signal to Lake Ontario anglers about the future harvest of lake trout. The message is clear and to the point: catches may have to be restricted if management goals for lakers are going to be met.

Unlike the other four species of trout and salmon stocked in Lake Ontario, lake trout are grown in federal hatcheries and made available to the state for stocking. The motive behind this "generosity" is simple: the U.S. Fish and Wildlife Service (FWS), as well as the U.S.-Canadian Great Lakes Fishery Commission, is committed to restoring the Great Lakes with a large, healthy, self-sustaining (reproducing) population of this once abundant fish. In a recently issued policy statement, FWS encouraged Great Lake state resource agencies to take all necessary steps to insure the building of a sizable brood population in the lakes.

Biologists are concerned, however, that the excellent catches of lake trout now commonplace along the entire lakeshore may be working counter to restoration efforts.

"Fishermen must understand that the lakers are there in the first place because of a national and international policy to rehabilitate this native species in Lake Ontario," said Dr. Joe Elrod, of the FWS Oswego Research Station. "Rehabilitation may mean having up to one million adult lake trout living and breeding in the lake, which we hope will result in significant natural reproduction."

State Conservation Department (DEC) biologist Cliff Schneider said that the management goals for lake trout are quite different than those for other salmonids. "Whereas other trout and salmon species are primarily stocked in the lake to grow fast and be fully and quickly harvested by sportfishermen, lakers are planted to grow, survive six to 10 years, reach sexual maturity, spawn, reproduce themselves, and then naturally support excellent fishing," stated Schneider.

Both Elrod and Schneider suspect that probably 90 percent of all lake

Lake Ontario Reef Needs More Rock

by Bruce M. Kantrowitz, Assistant Director for Communications in Albany

Fishermen on Lake Ontario want to finish building an artificial reef to enhance recreational fishing, but report they need contributions of fill and fill transport.

New York State Electric and Gas has donated rock and started building an experimental reef in the lake near Olcott. With donations of enough acceptable fill to finish the job, fishermen can benefit from improved fishing and John Gannon and Ron Scudato, fisheries biologists from State University College at Oswego, can complete their Sea Grant study of the reef to see just how effectively the reef attracts which kinds of fish.

International experience has shown that artificial reefs improve fishing. This kind of reef, too, is one solution for Lake Ontario's particular access problems: On the lake, terrain, facilities, and land rights often bar anglers from the best fishing grounds, according to Michael Voiland from the Sea Grant office in Brockport. Since fish gather around reefs, these structures may solve the problem by bringing the fish to the fishermen.

Fishermen in the region had hoped that the entire reef could be made from construction blastings from New York State Electric and Gas Company's new coal-fired power plant at Somerset. Subsequent construction plans, though, called for

less costly coring rather than blasting and will not free up enough material to finish the reef. Skip Hartman from the Niagara County Fisheries Development Board says contributions of rock or labor to move rock are still needed.

Bill Shepherd, New York State Department of Environmental Conservation, Region 9, holds the five-year permit for building the reef from NYSEG rock. If donated rock meets EPA standards, he says, the permit can be amended, the reef completed, and fishing improved.

DEC has stocked the lake with trout and salmon since 1968. "To enable anglers to catch more of the stocked fish," he says, "and to give anglers accessible places to fish, we need to provide places like this reef for the fish to congregate and spawn."

"It is important," says Gannon, "to understand how these reefs affect the environment and sport fishing in general before building them large-scale." Completion of the reef will enable Gannon and Scudato to complete their monitoring study and provide the information needed for building future reefs.

For information on how to help, contact W. N. (Skip) Hartman from the Niagara County Fisheries Development Board in Olcott at 716-439-2472 or 778-7167 evenings.

trout now being caught in lake waters have probably not yet spawned for the first time. Schneider reported that the chances are great that even fish as large as seven pounds are still "pre-spawners". "And increasing catches of immature fish can definitely slow or endanger the restoration effort," said Schneider.

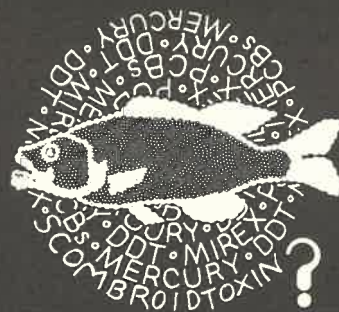
Currently, DEC is exploring all options by which it can nurture the development of a viable lake trout population not dependent upon annual stockings. "These would include increased control of the sea lamprey parasite, improving spawning habitat, stricter control of inadvertent commercial catch, stocking different strains of fish and, of course, limiting angler catches," said Schneider. "If or when we determine that laker sur-

vival is not what it should be, we'll think seriously about implementing one or more of these options."

Schneider explained that DEC is open to questions and suggestions on the future management of lake trout. He mentioned that before any new creel restrictions go into effect, the department will bring proposals before the angling public and concerned groups.

Those interested in making input into future lake trout management approaches in Lake Ontario can contact regional DEC fisheries personnel. To receive a copy of the new federal lake trout policy statement, send a self-addressed, stamped envelope to: "LAKERS", Sea Grant Extension, Morgan III, State University College, Brockport, N.Y. 14420.

FISH POISONING — An Unwanted Surprise



Good health requires some level of consciousness to maintain. As a sports fisherman, it's your responsibility to deliver quality fish free of fish poisoning. One type of poisoning that can occur in the New York area is scombroid fish poisoning, a foodborne illness that follows ingestion of infected fish. Symptoms consist of intense throbbing headache, burning mouth sensation, nausea, vomiting, cramps, diarrhea, dizziness, facial swelling, flushing and rash. All symptoms may not be found in one affected individual. The poisoning is preventable.

The key to prevention of scombroid food poisoning is proper handling of fish. Particular care must be taken with fish because it decomposes faster than other protein sources such as beef and poultry. This is true of more active swimmers or pelagic fish that have highly vascularized muscle tissue that decomposes more rapidly than it is of bottom feeding or benthic fishes. The muscle tissue of the active swimmer has a reddish or grey appearance as compared to the white appearance of the less active bottom feeders. Also included are dark meat fishes of the family Scombridae (suborder Scombroidei) which includes tuna, mackerel, bonito, skipjack and albacore, among others. Related illness has also followed ingestion of bluefish, mahimahi, called blue dolphin or dolphin fish, and saury fish.

Scombroid fish poisoning is not isolated to a body of water. Outbreaks have been reported in New York, Connecticut, New Jersey, Michigan, Hawaii and Japan. Whenever these fish are improperly handled following their catch, the possibility of "scombrototoxin" formation exists.

Scombrototoxin is a chemical mixture of histamine, saurine and other related products. In Japan scombroid fish poisoning is associated with the dry fish delicacy, saury, hence the chemical name saurine. Scombroid fish contain a large amount of histidine in skin and muscle tissue. Histidine is not the culprit, however. Histidine is one of the naturally occurring amino acids in our bodies. Histamine is formed by bacterial action on histidine. Histamine at low levels exists in our bodies, but larger amounts are released by our body in association with allergic phenomena. The symptoms related to scombroid poisoning have some allergic features such as facial swelling and flushing, urticaria (hives) and itching. Scombroid poisoning is not an allergic reaction. An allergic reaction would involve the release of histamine by the body. In this case a toxic dose of histamine and related compounds is being ingested.

Although scombrototoxin is not present to a toxic level in fresh fish, improper handling of fish allows certain marine bacteria, particularly *Proteus* species, to multiply and break down histidine to scombrototoxin. Normal levels of histamine average around 3mg/100 mg. Samples of fish from cases reported to the Nassau and Suffolk County Departments of Health had histamine levels ranging from 64mg/100 mg. to 300mg/100 mg.

To date there have been no reported fatalities related to scombroid poisoning. The symptoms usually occur within one hour after fish consumption. The affected fish may have a sharp peppery taste. Without treatment, symptoms usually disappear in eight to 10 hours. There are antihistamine medications (which

require a prescription) that have relieved symptoms within half an hour.

Refrigeration, either mechanically or by icing, is the most important factor in preventing the formation of the toxin by inhibiting the growth of the bacteria.

To safeguard freshly caught fish, keep them iced down in a drained insulated fish box, ice chest or similar insulated container. A slush of ice and sea water is another good refrigerant. If you don't have an insulated container, use ice with any covered container. As a last resort if you don't have any ice, keep the fish covered with a constantly moistened cloth and out of the sun. The quality of the fish will be better if just kept moist and not in water.

Another factor in keeping quality fish is the gutting of fish soon after it is caught. Many bacteria reside in the intestinal tract of fish and contamination of the flesh can occur particularly if a gaff is used. The sooner the fish are gutted, the better they will keep.

The above factors apply to all fish, not just those involved in scombroid intoxications. The fresher or better preserved the fish, the better it tastes when eaten. Think back to the times you've eaten fish you left in a bucket in the sun. That strong fishy taste is not the fault of the fish but the mishandling of perfectly fine tasting fish. In addition you could get an unwanted surprise in the form of a scombroid intoxication.

Editor's Note: Our thanks to Randy Berger, M.D., an intern at SUNY Stony Brook Medical Center and Michael S. H. Young, M.S., M.P.S., with the Nassau County Department of Health for submitting this article to **Coastlines**.



Holiday Seafood Traditions from around the World

by Linda O'Dierno, Sea Grant Specialist in New York City

In many countries seafood is the focal point of the Christmas meal and dinner on Christmas Eve is the principal family celebration. The custom stems from fast-day regulations of the Catholic Church which for many centuries prohibited eating meat on Christmas Eve. In ethnic communities in the United States where traditions have held firm, there is a strong demand for specific types of seafood during the holiday season.

In Scandinavian neighborhoods, lutefisk or lye fish is an integral holiday tradition. White fish, usually split and dried cod, is soaked in a strongly alkaline solution of potash for many days. Originally this procedure was a precaution against bacterial contamination but also allows for greater penetration of water into the dried fish. The fish is then well rinsed. Since the rinsing procedure takes at least a week, preparation is begun in early December. With its gelatinous consistency, even its admirers concede lutefisk is an acquired taste.

In Poland, carp was always served on Christmas Eve as part of a 13-course meatless dinner. To eliminate the muddy flavor of this freshwater fish, a live carp was purchased and allowed to swim in the family bathtub

until time for preparation! According to German traditions, each member of the family sharing the Christmas carp saves a large scale to bring luck in the coming year.

Eels are almost compulsory Christmas eating in parts of France and Italy. Neapolitans eat them stuffed and fried. Steaks of skinned and filleted eel are flattened and stuffed with a mixture of hard-cooked egg yolks, butter, parsley and onion all bound together with raw egg yolk. The steaks are then tied to hold the stuffing in and fried in butter and lemon juice. When they are cooked, the threads are untied, and the pieces of eel are dipped in batter and fried in oil until golden brown. In Rome, eels are most likely to be stewed with peas. In Provence, France, the eels are stewed with tomatoes, garlic and black olives.

Other traditional Italian favorites are baccala (dried salt cod), scungilli (conch) and squid (calamari). All of these can be prepared either as salads with a vinaigrette dressing or as hot dishes depending upon the locality in which the tradition originated.

In Spain, bonito and sea bream or porgies are traditional holiday fare. The Basques grill porgies over a wood fire with lemon juice, olive oil and

garlic. In Asturias, they are cooked in a casserole with white wine, garlic, pinenuts, olive oil, lemon, onions and parsley.

Other Christmas specialties include baked sturgeon or pike with tarragon sauce originally served in Hungary. Because cod fishery has played such an important role in the Canadian economy, "cod sound pie" has become a traditional favorite in Newfoundland. In France, the "reveillon", a traditional meal that followed midnight mass always contained some of the more expensive fish and shellfish. Of course, no respectable English goose would be stuffed with anything other than an oyster stuffing. Many a Russian Christmas Eve meal features a "kulebyaka" or fish pie. A filling of fish, butter, onions, hard boiled eggs and parsley is encased in a loaf-shaped envelope of yeast dough. The fish is usually sturgeon, salmon, tuna or halibut. Some variations also include "vyzaiga", the dried spinal cord of a cartilaginous fish such as the sturgeon. In Russia, it is sold as a delicacy and enhances the flavor and texture of the fish filling.

If you are not daring enough to try lutefisk or kulebyaka, you might consider some of the less exotic recipes listed below for your holiday entertaining.

Cod Vicentina (Baccalà alla Vicentina)

This traditional Italian Christmas recipe features salt cod, a dried fish that can be found in supermarkets and seafood stores. If the 24-hour soaking period necessary to make Cod Vicentina the traditional way does not appeal to you, try this recipe with fresh or frozen cod or hake fillets. It's delicious either way.

2 lbs. salt cod, cut into 4-inch squares and soaked (2 lbs. cod or hake fillets can be substituted)

6 tbsp. grated Parmesan cheese

¼ cup olive oil

2 cloves garlic, chopped

1 small onion, chopped

4 anchovies, chopped

3 tbsp. parsley, chopped

¼ cup dry white wine

½ cup milk

4 tbsp. butter or margarine

Preparation Time: 1 hour. If using salt cod, allow 24 hours for soaking prior to preparation.

Preheat oven to 350°F. Place fish, in single layer, in a large, buttered baking dish. Sprinkle fish with Parmesan cheese. Brown onion and gar-

lic in olive oil. Add anchovies, parsley, and wine. Simmer for 5 minutes. Add 1 tbsp. butter and the milk. Bring sauce slowly to boil. Once boiling, pour sauce over fish. Dot fish with remaining butter, and bake about 25-30 minutes, or until the fish has absorbed the sauce. Serves 6.

Swedish Herring Salad

4 fillets of salt herring
4 scallions
6 radishes
2 tomatoes
1 green pepper
1 cup shredded lettuce
¼ cup cider vinegar
3 tbsp. salad oil
1 tsp. sugar
¼ tsp. paprika
¼ tsp. freshly ground black pepper.
Preparation Time: 20 minutes

Cut herring into half-inch slices. Slice scallions and radishes; quarter tomatoes; dice pepper. Toss ingredients together with lettuce. Mix vinegar, oil, sugar, paprika, and black pepper separately, and pour over salad. Chill and serve. Serves 6.

Oyster Stuffing from England

Although technically not an appetizer, oyster stuffing can be used to complement any holiday fish or fowl dish. This recipe will fill a 4-5 lb. fish. For a 10-lb. turkey double the recipe, and for a 15-pounder, triple the recipe.

1 cup oysters, chopped (save liquor)
3 cups bread cubes or day-old bread torn into pieces
2 tsp. salt
dash pepper
¼ tsp. sage
¼ tsp. thyme
¼ tsp. basil
3 tbsp. butter or margarine
¼ cup green pepper, chopped
1 onion, chopped
1 clove garlic, minced
2 tbsp. fresh parsley, minced
½ cup celery, minced
½ cup mushrooms, sliced
Preparation Time: 20 minutes

In a large skillet, saute oysters in their liquor, for about 5 minutes. Drain and save liquor. Add bread cubes, salt, pepper, sage, thyme, and basil. In another skillet, saute green pepper, onion, garlic, parsley, and celery in butter until tender, approximately 5 minutes. Add mushrooms, and saute another minute. Combine oyster mixture with bread crumbs.

German Fish Dish for New Year's Day

This zingy fish dish is an overwhelming Italian favorite and is reputed to cure a hangover. Don't be fooled by the ingredients; this dish is a delight!

4 tbsp. butter or margarine
2 lbs. flounder fillets, cut into serving pieces
2 tbsp. lemon juice
½ tsp. salt
2 medium onions, sliced and separated into rings
3 tbsp. tomato paste
1 tbsp. beer
1 tsp. horseradish
2 medium dill pickles, cut into thin wedges
Preparation Time: 45 minutes

Preheat oven to 375°F. Butter baking dish or casserole large enough to hold fish in a single layer. On wax paper, spread fillets and sprinkle with lemon juice and salt. Let fillets marinate for 10 minutes. Melt 2 tbsp. butter over moderate heat. Saute onion rings in butter for about 5 minutes until soft and transparent. Arrange fillets in baking dish. Beat tomato paste, beer, and horseradish together in a bowl. Spread mixture evenly over the fillets and scatter onion rings and pickle wedges on top. Cut remaining butter into small pieces and dot fish. Bake about 15 minutes until fish flakes easily. Serve at once. Serves 4.

Italian Stuffed Squid

6 large squid (about 1 lb.)
¼ cup bread or cracker crumbs
2 tbsp. minced parsley
1½ tbsp. grated Romano cheese
2 tsp. minced garlic
1 egg, beaten
¼ cup salad oil
salt and pepper
2 garlic cloves, sliced
½ cup peeled, chopped tomatoes
¼ cup dry white wine.
Preparation Time: 1½ hours.

Clean according to diagram. Chop tender parts of the tentacles (be sure to remove hard beak). Mix tentacles, crumbs, parsley, cheese, 1½ tsp. of minced garlic, egg, and 1 tbsp. salad oil. Blend well, adding salt and pepper to taste. Spoon equal amounts loosely into each squid body, and sew up opening. Add remaining oil to skillet large enough to hold squid in single layer. Heat oil and cook sliced garlic until golden brown. Discard garlic. Arrange the squid in oil and brown all sides lightly. Add tomatoes, remaining minced garlic, wine, and salt and pepper to taste. Cover tightly and cook 20-30 minutes. Remove threads from squid and serve whole or sliced, alone or with pasta. Serves 3 or 4.

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How to Clean Squid

1 Thaw squid if frozen.

2 Hold the tube-like body (mantle) in one hand and twist off the head with the other. The intestines will pull right out with the head.

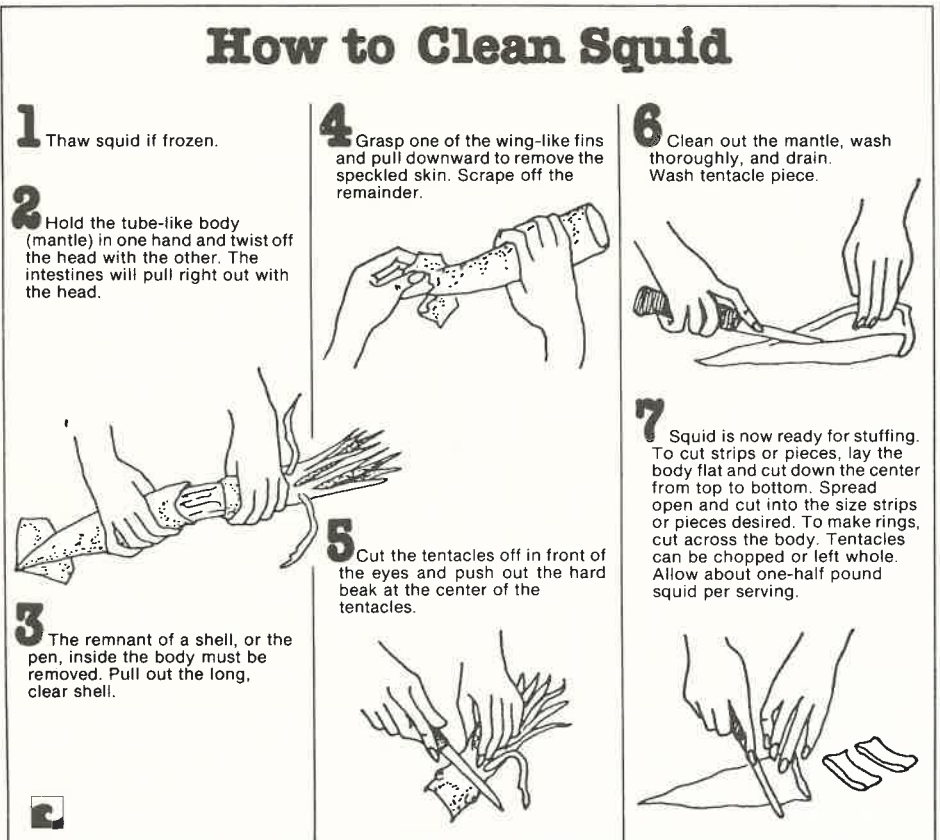
3 The remnant of a shell, or the pen, inside the body must be removed. Pull out the long, clear shell.

4 Grasp one of the wing-like fins and pull downward to remove the speckled skin. Scrape off the remainder.

5 Cut the tentacles off in front of the eyes and push out the hard beak at the center of the tentacles.

6 Clean out the mantle, wash thoroughly, and drain. Wash tentacle piece.

7 Squid is now ready for stuffing. To cut strips or pieces, lay the body flat and cut down the center from top to bottom. Spread open and cut into the size strips or pieces desired. To make rings, cut across the body. Tentacles can be chopped or left whole. Allow about one-half pound squid per serving.



Holiday Seafood Traditions From Around the World continued from page 5

Italian Style Eel

2½ lbs eel, skinned and cut into 4-inch pieces
½ cup olive oil
1 small onion, sliced
½ lb. mushrooms, sliced
1 tsp salt
freshly ground pepper to taste
1 cup dry white wine
2 cloves garlic, minced
3 cups shelled fresh peas
1 tbsp. tomato sauce
½ cup water
Preparation Time: 1 hour

Place eels in ice water and soak for 15 minutes. Drain and pat dry. Heat oil in a large, heavy skillet, add onion, and saute until transparent. Add eel and cook until water from the eel evaporates. Add mushrooms, salt, and pepper, cook for 5 minutes longer. Add wine, garlic, and peas, cover the skillet, and cook until the wine has evaporated. Add tomato sauce and water, continue cooking for 25-30 minutes. Add more water if needed. Serves 4.

Squid and Shrimp Salad from Italy

1¼ lbs. squid, dressed
½ lb. raw shrimp
¼ cup celery, chopped
¼ cup Bermuda onion, chopped
3 tbsp. olive oil
1 tbsp. wine vinegar
2 tbsp. lemon juice
salt and freshly ground pepper
Preparation Time: 30 minutes

Wash squid well in several changes

of water. Chop up tentacles, slice body into ¼ inch rings. Cook in boiling water for 1 minute, drain. Bring 3 cups of salted water to a boil. Add shrimp, bring to a second boil, cover, remove from heat, and let stand for 5 minutes or until pink. Drain and run cold water over, shell, and devein. Combine squid and shrimp with parsley, celery, onion, oil, vinegar, lemon juice, and season to taste. Chill, then serve on lettuce leaves. Serves 6.

Black Sea Bass Baked with Fresh Mint

Black Sea bass baked with fresh mint is a light, delicate meat that seems to melt in your mouth. The mint adds a fresh holiday flavor.

2 lbs. black sea bass
½ cup vegetable oil
½ cup dry cracker or bread crumbs
1 sprig parsley, minced
½ tsp. salt
dash of pepper
pinch of basil
5 sprigs mint
½ cup dry sauterne wine
1 clove garlic, minced
Preparation Time: 1 hour

Preheat oven to 350°F. and grease a 2-quart baking dish. Clean, split, and bone the bass, and wipe inside and out with a damp cloth. Put crumbs in a medium mixing bowl, and add parsley, salt, pepper, and basil. Mix well. In a separate bowl, mix 1½ tbsp. oil and half of minced garlic; blend

well. Place half of the bass in the baking dish skin side down. Spread crumb mixture over it. Pour ¼ cup of wine over the fish. Place the other half of bass (skin-side up) on bottom half, and tie or skewer fish together at both ends. Pour oil-garlic mixture over entire fish. Bake bass for 20-25 minutes, or until fish flakes easily with a fork.

Meanwhile, chop most of the mint, saving some for garnish, and blend in a bowl with the other half of the wine. Add remaining garlic, and season to taste with salt and pepper. Use half of this mixture to baste the bass occasionally. When fish is done, pour the rest of the sauce over the fish. Garnish with fresh mint and serve hot. Serves 4.

Editor's note: Some of these recipes come from a two-page publication entitled, **Holiday Seafood Sampler**, from the Delaware Sea Grant Marine Advisory Service. Like the selections here, this collection of recipes features traditional and new seafood recipes for Christmas and New Year's. It should also be noted that while fish plays an important part in Jewish tradition, fish dishes are not typically used for Hannukah. Special thanks go to Delaware Sea Grant and Virginia Polytechnic Institute and State University Sea Grant Program which provided for many of these recipes. See I Want More to order the **Holiday Seafood Sampler**.

Marine Demonstration of a New Product

According to Chris Smith, Sea Grant specialist in Riverhead, the replacement of corroded wire rope on commercial fishing vessels constitutes a significant maintenance expense for fishermen. In 1978 Oregon State University's Sea Grant Program estimated yearly wire rope replacement costs were between \$4,000 and \$5,000 per vessel for large draggers. Using these figures as a cost basis, the expense for New York's trawler fleet would come close to \$1 million. In short, wire rope corrosion costs money.

In 1972 DuPont introduced aromatic polyamide fibers that possessed high strength, high modulus, and low elongation. These synthetic fibers, trademarked Kevlar, have found several specialized applications in the marine environment where rust and corrosion limit the lifetime of conventional wire ropes. In one application as a high rise tensioner line on an offshore drilling rig, Kevlar fibers woven into a rope provided for an estimated three times the lifetime of conventional wire rope. Laboratory experiments have shown Kevlar ropes out-perform equivalent strength wire ropes in cycle-over-sheave and break-strength tests (see **Sea Technology**, July 1981). Armed with this information and following consultation with

fishermen, a field trial of the suitability of Kevlar rope as towing warp in a commercial fishing operation was begun.

In March of this year, representatives from DuPont and Sea Grant placed 250 fathoms of 60,000 lb. break strength Kevlar rope onto each of the winches on board the 78'700 hp dragger **American Eagle** out of Freeport, New York. Five months later in August, the ropes were still in service and much has been learned. Results of this field trial will be updated in future issues of **Coastlines** and reports from New York Sea Grant.

For more information contact Chris Smith at the Sea Grant office in Riverhead.

Update

Seafood USA . . . A Better Choice

Again, October is Fish and Seafood Month, a month set aside by the National Fisheries Institute to promote the rich seafood treasures of American waters. This year's theme which **Coastlines** joins in celebrating is "Seafood USA . . . a better choice." Don't be surprised if you see colorful displays of fish and give-away recipes at your local supermarket. And if you're looking for more ways to prepare fish, check October's consumer magazines. For institutions and restaurateurs, food service trade publications will also be featuring new seafood developments.

Of course, this emphasis on fish and seafood is not just an October event for Sea Grant in New York. Since its creation in 1972, an important part of Sea Grant's exten-

sion program has been aimed toward helping New York's commercial fishing industry resolve administrative and harvesting technology questions related to its annual harvest, which in 1981 amounted to over \$42 million. But let's also not forget the estimated 1.3 million New Yorkers who fish for sport, bringing in some 29.6 million pounds of edible finfish, which accounted for 54 per cent of the state's total harvest in 1979. Since the use of fish remains so much a part of New York's tradition, **Coastlines** features holiday recipes from many lands. An article by Long Island medical authorities also cautions anglers and commercial fishermen of scombroid fish poisoning, a little-known type of poisoning caused by improper handling of certain fish. Articles on how scientists and fishery managers are helping to improve the sportfishing industry on Lake Ontario are also

featured in this issue celebrating Seafood USA.

Sea Grant Week

. . . attracted over 200 persons from throughout the country to Washington, D.C. meetings in July to explore future directions and program improvements. Primarily for those working professionally in Sea Grant, separate and joint sessions were held for communicators, directors, extension leaders, financial managers, educators and others. The Sea Grant Review Panel, selected to advise the National Office on Sea Grant policies and procedures, also met that week. Mrs. Marjorie Vesley of Williamsville, N.Y. was recently selected for a second term on this prestigious group.

I Want More!

Additional information is available from New York Sea Grant. Please check the publications which interest you and send to your nearest Sea Grant Extension Office. Make checks payable to Cornell University.

- _____ **Retail Market Tests of Canned Pollack, Development of Products from Underutilized Species of Fish:** Booklet 10, R. C. Baker and C. A. Bruce, 1981, 18 pp., \$0.75.
- _____ **Minimizing Wastes, Maximizing Yields: Seafood Processing Case Histories from Cornell,** P. Hornik, 1982, 12 pp., No charge.
- _____ **Minced Fish: A Critical Examination of the Cornell Experience,** Sea Grant Reprint Series, J. M. Regenstein, 1981, 8 pp., \$1.50.
- _____ **Veterinary Medicine in Aquaculture Gains Importance as Industry Grows,** Sea Grant Reprint Series, C. G. Rickard and D. A. Abt, 1980, 4 pp., \$1.50.
- _____ **Motivations of New York and Virginia Marine Boat Anglers and Their Preferences for Potential Fishing Constraints,** Sea Grant Reprint Series, C. P. Dawson and B. T. Wilkins, 1981, 8 pp., \$1.50.
- _____ **Coastal Construction Handbook Series: Materials, First Impressions,** W. D. Hubbell and F. H. Kulhawy, 1982, 105 pp., \$3.50.
- _____ **Summer Netting for Lake Ontario Salmonids: 1981 Results.** Preliminary Research Report, D. C. Nettles, J. M. Haynes, R. A. Olsen and J. D. Winter, 1982, 6 pp., \$0.25.
- _____ **Holiday Seafood Sampler,** Delaware Sea Grant, 1982, 2 pp., \$0.25.

Where They're at!

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Attention to specific temperatures, which was an earlier guideline for anglers to follow, appears less important than finding and fishing the thermocline-bottom interface, regardless of actual temperature," explained Haynes.

• **Summer dispersal:** Although it's probably not the best of news for anglers, the researchers are coming to the conclusion that the three Pacific Ocean species — coho, chinook and rainbow — may follow their natural oceanic behavior. "These species, in our estimation, show wide-ranging, dispersed pelagic movements throughout the lake, especially in June and July," stated Haynes. "This could signal that anglers may have to accept spotty catches of these very attractive species during these months

in the future." Haynes noted that higher stocking levels might lessen the negative effects of fish dispersal, "but only time will tell."

• **August: chinook bonanza?** Evidence gathered and observation of angler catches in 1982 suggest that the entire month of August could produce excellent fishing for the lake's glamor fish, the chinook salmon, in the future. "We've seen inshore migration of sexually mature chinook occur throughout August, probably prompted by their need to search out their stocking streams for spawning. As the state increases the magnitude of its annual plantings each year, the August chinook fishery should grow proportionally and make summer fishing more productive and, of course, more exciting," offered Haynes.

The researchers plan a number of reports and articles documenting

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their research results. A copy of a report on their 1981 netting work, entitled **Summer Netting for Lake Ontario Salmonids: 1981 Results**, is available from the Brockport Office. (See I Want More).

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