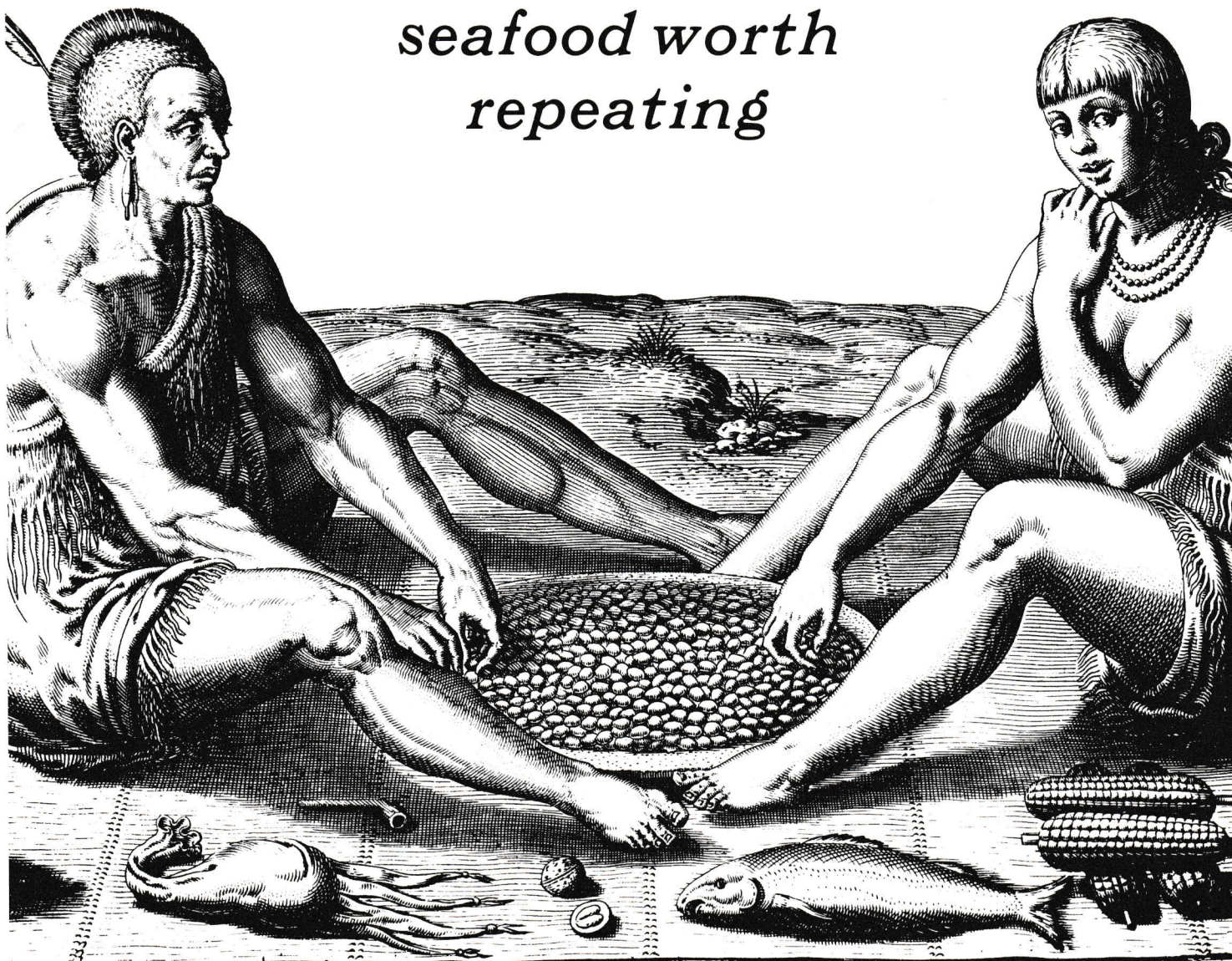


# COAST WATCH

*Go where there's fish in the kitchen all year. Find out how they cooked it in the Indians' days, the settlers' days, the good-ol' days. Hunt up one of those cooks who can stir today's conchs into chowders rich as history. Inside,*

*seafood worth  
repeating*



An old engraving of one of John White's drawings



# For coastal cooks, it's conch chowder and crab stew

In kitchens from Currituck to Calabash, coastal Carolina cooks dish up seafood with a pinch of time-honored tradition. Coastal cooks have been stirring up hard crab stew and downeast clam chowder as long as anyone can remember.

To hear cooks like Eloise Pigott of Gloucester and Nellie Myrtle Pridgen of Nags Head tell it, you'd think there was nothing special about their ways of cooking seafood. They can hardly believe you're asking about their recipes—the recipes that were passed along from a neighbor or relative and are as much a part of coastal tradition as boatbuilding and netmaking.

The recipes for clam chowder and cornmeal dumplings aren't written in fancy cookbooks or touted by gourmets. But that doesn't mean the end result fails the test of good eatin'. It doesn't. Most coastal folks had rather pull up a chair to a bowl of conch chowder or a plate of steamed shrimp than liver pate or beef Wellington.

Most of the recipes for coastal

favorites are stored in the heads of the cooks who prepare them. Each cook has his or her own version of clam chowder, adding a "nickit" more of this or that.

Landlubbers tend to think coastal cooks fry all of their seafood. "Tourists and people from outside the area think all we know how to cook is fried fish, fried cornbread and fried potatoes," says Eloise Pigott, a Gloucester native. "That's a myth. Fried food is good and some things are best fried, but we do know how to cook seafood other ways."

Coastal cooks bake, broil, boil, stew and roast their seafood. And coastal natives like their seafood best if it's as fresh as the day it was pulled from the net.

Marlene Hieronymus, a Wrightsville Beach cook, says to check a fish's freshness by checking the gills. "If the gills are a nice red color and smell like the ocean, then the fish is fresh," she says. Hieronymus says the age-old method of testing a fish's freshness by

the clearness of the eye may not always be accurate. Many times the eye will be damaged in handling the fish, which doesn't mean the fish is not fresh, she says.

Nellie Myrtle Pridgen—Nellie Myrtle to those who know her—is a Nags Head resident and Outer Banks native, who says she cooks seafood the simplest way possible. "My father and brother were fishermen and I learned early on not to destroy the taste of seafood with a lot of batters and seasonings, she says.

Nellie Myrtle says she boils her fish in "a tiny bit of bacon grease and butter." She dresses her clam chowder with tomatoes, potatoes, onion and green peppers. If left with a few small (two to three inches) hard crabs in a catch, Nellie Myrtle cleans them, rolls them in cornmeal and a little seasoning, and fries them. "You can eat the crab whole, shell and all, if you have your own teeth," she says.

Soft crabs have long been a favorite along the Outer Banks, Nellie Myrtle



## Downeast Clam Bake

To a cheesecloth bag, add pieces of cut-up fryer chicken, a carrot, an onion, potatoes (sweet or Irish), an ear of corn and 1/2 dozen (or more) cherry-stone clams. Allow one bag per person. Add water to bottom of a steam cooker. Put tied-off bags in top section of steamer. Cook three hours.

Bill Pigott

## Conch Chowder or Soup

*meat from 7 to 8  
conchs  
2 to 3 potatoes, diced  
1 small onion, sliced  
or chopped  
chopped rib-side pork  
pat of butter or  
margarine  
thyme  
salt and pepper  
1 1/2 quarts of water*

After tenderizing conch in pressure cooker, chop in small pieces. Place chopped conch in pot, add water, pork and butter. Salt and pepper to taste. Simmer two to three hours. Add potatoes and onions 30 minutes before chowder is done. Also, sprinkle with thyme. Add cornmeal dumplings during final 15 minutes.

Bill Pigott

## Downeast Clam Chowder

*1 quart chopped clams  
2 quarts water  
2 medium onions,  
chopped  
3 to 4 slices salt pork or  
bacon drippings  
6 medium potatoes,  
cubed  
salt and pepper  
cornmeal dumplings*

In a large pot, combine first six ingredients. Some Carteret County cooks fry the bacon before adding to chowder; others don't. Still others use bacon drippings. Cook the chowder until the potatoes are tender (approximately 30 minutes). Drop cornmeal dumplings on top of chowder. Cover tightly and simmer for 15 minutes.

Adapted from  
combination of recipes

## Oyster Fritters

*chopped oysters  
(about 1 cup)  
1 egg, beaten  
flour  
salt and pepper*

Mix together chopped oysters, beaten egg and seasonings. Add just enough flour to hold together. Drop by spoonfuls into hot grease. Fry until golden.

Eloise Pigott

## Crabmeat Cakes

*crabmeat  
cracker crumbs  
dab of mustard*

Mix crabmeat, cracker crumbs and mustard. Shape into cakes. Fry in butter.

Nellie Myrtle Pridgen



says. She remembers when you could buy them for 10 to 25 cents a dozen, unlike the \$10 to \$20 price tag they carry today. "There's only one way to cook soft crabs and that's fried," she says.

Nellie Myrtle is famous for her fish cakes, but she won't divulge her recipe. She does say that when choosing fish for any recipe she always chooses a female fish. "They're shorter, fatter and tenderer," she says.

Seafood prepared in restaurants doesn't fare well by Nellie Myrtle standards. "I'd as soon eat a snake as eat in a restaurant," she says. "I never follow a recipe when I cook. I cook according to what I have and the number of people I'm cooking for."

In Wrightsville Beach, shrimp top the list as everyone's summer seafood favorite. Steamed shrimp are heaped in mounds before hungry crowds in traditional "shrimparoos". Marlene Hieronymus says she steams her shrimp with the heads on. "The heads add flavor," she says.

"You steam the shrimp in a small amount of water until they turn pink," says Hieronymus, who provides seafood recipes and tips once a month on "The Jim Burns Show," which is aired on WECT-TV in Wilmington. "Be careful not to overcook shrimp. They become tough. If you're preparing large quantities for a shrimparoo, be sure to turn the shrimp in the pot so they'll cook evenly."

Hieronymus says she heaps the shrimp in a big bowl on the picnic table and lets everyone dig in. To eat the shrimp, guests pop off the heads and peel the shell away.

Hieronymus serves lots of whipped butter, lemon juice and cocktail sauce for dipping the shrimp. And as side dishes, she prepares roasted corn in the husk, hush puppies and lemonade.

In Carteret County folks eat their seafood "downeast" style with cornmeal dumplings and gravy. Audrey Fulcher, who has cooked at Captain Bill's Seafood restaurant in Morehead City for twenty years, says conch chowder is a Carteret County classic. There's even a saying that goes along with this dish, Fulcher says. "If you ever eat conch chowder in Carteret County, you never leave." The conch, which is more accurately a whelk, has a strong flavor that some say is an acquired taste.

Fulcher says Captain Bill's serves

Photo by Neil Caudle



Albert Cowan and Audrey Fulcher in the kitchen

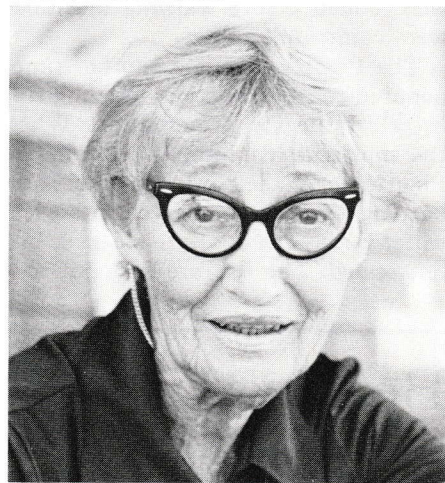
Photo by Hilda Livingstone

up conch chowder every Wednesday for a loyal following of locals. Fulcher won't reveal the exact recipe for the chowder, but she says the ingredients are ground conch, water, potatoes, onion, meat grease, salt, pepper and cornmeal dumplings.

Head cook Albert Cowan, who has spent 21 years in the kitchens of Captain Bill's, adds another ingredient to the conch chowder—Worcestershire sauce. Cowan says the conch chowder recipe is his own, derived by varying the ingredients until just the right taste was achieved. Cowan smiles and politely refuses to give out his recipe. After all, he wants to have plenty of customers on conch chowder day when he stirs up about 20 gallons of this Carteret County favorite.

Bill Pigott, Eloise's husband, says making conch chowder requires some extra effort, but the results are worth it. First you should freeze the conch. Bill says freezing the mollusks makes the meat easier to pull from the shells when they're thawed. Once you've removed the meat, keep only the cream-colored foot. Brush away the black coating with a brush, Bill says. To tenderize the meat, either pound it or place it in a pressure cooker. Once tenderized, the conch is ready for the pot (see recipe, page 2).

Using similar ingredients, Carteret



Nellie Myrtle Pridgen

County cooks also prepare a water-based "downeast" clam chowder. "We use no tomatoes and no milk," says Eloise. The chowder is flavored with bacon grease or pieces of bacon, potatoes, onions, salt and pepper. The chowder broth or gravy does turn milky as it cooks, but Eloise emphasizes that no milk is added.

The aroma of hard crab stew, another traditional coastal offering, frequently fills Carteret County kitchens when blue crabs are in season. Eloise says she leaves the hard crabs whole, removing only the hard back shell before cleaning the crustaceans.

Continued on next page



She cooks her potatoes and onions until soft, and salts and peppers the crabs. The ingredients are layered in the pot, adding the onions and potatoes first and placing the crabs on top, Eloise says. She adds water, seasoned with crab boil, to make the gravy. After cooking the crab stew on high heat for five to ten minutes, Eloise turns the heat to simmer before adding her cornmeal dumplings.

A stew, chowder or soup just isn't complete in Carteret County unless you add traditional cornmeal dumplings to the gravy. Eloise says she makes her dumplings out of cornmeal, salt and just enough water to hold the dumpling together. "I shape the dumplings into patties or cakes with my hands," she says. "Then I drop them into my stew or chowder to simmer for about 15 minutes."

"We put cornmeal dumplings in clam chowder, conch soup and collards. We put them in everything we boil. They used to say Carteret County cooks put dumplings in the clothes they washed back when clothes were boiled before washing machines were common."

The Pigotts continue another time-honored coastal practice—corning fish in salt brine for preservation. When the spot start running in the fall, the Pigotts begin their brining process by keeping the fish they catch in an ice-water bath. The spot are cleaned, but not scaled. The fish are first put in a

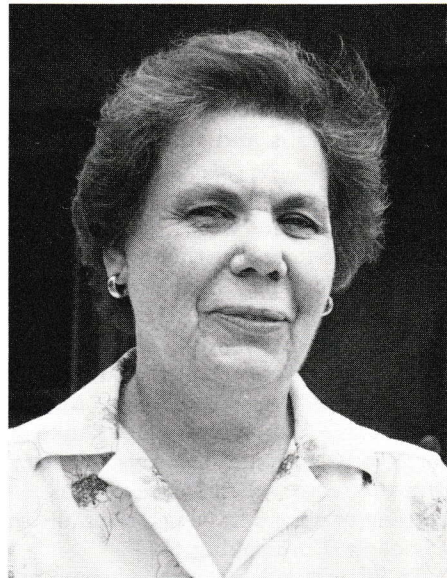
light brine solution and stored in the refrigerator for a few days, Eloise says. Then the spot are washed and placed in heavy brine in large containers.

When her family has a hankering for fish, Eloise removes the salty spot from their storage containers with a wooden spatula. Never use metal in the brine, she says. Eloise soaks the fish in water, changing it often, to remove some of the salt. Then she may boil the spot for breakfast or dinner. If preparing the fish for dinner, Eloise also boils some potatoes and onions. The spot is mashed in with the potatoes and onions on the plate and hot pepper vinegar sprinkled over the fare.

Eloise says they store the fish from season to season. "We enjoy the fish we brine," she says. "It gives us the advantage of having fish in the winter when you can't get fresh seafood."

Fish roe, the eggs found in the tubular, saclike ovaries of female fish such as mullet, menhaden, croaker and herring, are coastal Carolina's answer to caviar. The roe can be fried, baked or scrambled with eggs. To preserve the roe for year-round use, it can be dried or frozen. Eloise uses the old-timey method of drying mullet roe in the sun for a few days, turning them periodically. Mullet roe give off a strong, pungent aroma as they dry. The flavor of roe varies from species to species. "Roe are like olives, either you like them or you don't," says Eloise.

Photo by Neil Caudle



Eloise Pigott

When a gathering is called for, coastal families don't hesitate to center the gathering on food, particularly seafood. Oyster roasts, fish fries, shrimp roasts and clam bakes make a good excuse for seeing friends, gathering the church members or just plain having fun (see clam bake recipe, page 2).

But whether it's a large gathering or just family, coastal cooks like Nellie Myrtle and Eloise continue to use the recipes that they know have been tried and proven for generations.

—Kathy Hart

## Before the fish stick and Captain's Platter . . .



Boiled skate, baked turtle and roasted eel. Not the most popular menu by today's standards. But in the 18th century, such dishes were regular fare. Folks then weren't so squeamish about what they ate. While many dishes could just as well turn up on a seafood restaurant's menu today, others, such as the fish muddle, the pine bark stew and the eel stifle, might make some of us turn up our noses. Not because they're not good, mind you. They're just unfamiliar.

The old dishes had both flavor and variety, says Joyce Taylor, Sea Grant's marine advisory agent at the North Carolina State University Seafood Lab in Morehead City. This summer, Taylor has been researching and testing colonial recipes with her

team of nutrition leaders from Extension Homemakers Clubs in Carteret County. The dishes they prepared got high marks, and so did their lesson in history.

Taylor says our colonial ancestors ate a wider variety of seafood and depended on it more than we do today. Seafoods were the one thing they could count on when other food supplies ran low. In 1588, Thomas Harriot wrote in "A briefe and true report of the new found land of Virginia" that the colonists were eating sturgeon, herring, trout, porpoise, ray, menhaden, mullet and flounder as well as many fish that he couldn't name. Crabs, oysters, scallops, periwinkles and turtles also were a part of the settlers' diets, he says.



Back then, cooks knew how to do more with a fish than just fry it. In her research of colonial cooking, Taylor found references to roasting, boiling, broiling and stewing seafoods. "We found many of the recipes were quite simple, but a few were very elegant, like one for baked fish with stuffed clams," says Taylor (see recipe next page).

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*"We found many of the recipes were quite simple, but a few were very elegant."*  
—Joyce Taylor

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Those were the days when recipes were handed down, generation to generation. Only one cookbook, *The Frugal Colonial Housewife*, was published in America between 1742 and 1796. That book instructed housewives in "the art of dressing all sorts of viands with cleanliness, decency and elegance." The way to boil a skate, it says, is to cut it into long strings, throw it into salt and water, and boil it for three minutes. Drain it well and serve on a platter, surrounded by broiled eel, with a butter and mustard sauce.

Eel, considered an underused species in this country today, was a frequent colonial dish. It seems the settlers, accustomed to dining on eel in Europe, brought a wide variety of recipes with them to the new country. *The Frugal Colonial Housewife* instructs cooks to prepare eel by roasting, boiling, frying, broiling and stewing. And, of course, no colonial housewife should be without a recipe for eel soup and eel pie.

A favorite recipe, published in an 1832 magazine, was the eel stifle, a combination of onions, port wine, gravy, vinegar, anchovies and spices, boiled with eel.

One of the most popular North Carolina dishes was a muddle, named so because it was a stew of fish muddled together with pork, bread crumbs, onions, mashed potatoes and spices. Potatoes, a common ingredient in colonial recipes, were often mashed, then added to a stew as a thickener (see recipe next page).

Another Carolina original was the pine bark stew. During Revolutionary War times, Carolina cooks concocted the fish stew using the tender roots of

pine trees for flavoring, along with a slab of bacon and a red pepper pod (see recipe next page).

The North Carolina tradition of seafood didn't start with the English settlers. The seafoods we eat and the way we prepare them date back to the Indians. Legend has it that the first settlers to land on the North Carolina coast were greeted by Indians, bearing

the gift of a boatload of freshly caught fish. Those native Americans didn't record their recipes, but they did leave behind something almost as valuable—garbage.

David Phelps, an archaeologist at East Carolina University, rummages through ancient Indian garbage pits, called middens, in search of clues that will tell him how the Indians lived. A list of the remains in those garbage piles reads like an Indian menu: shellfish, opossum, terrapin, fish, bear and deer.

"People have to put their garbage somewhere and the middens are where all the food remains and old utensils went. We can go back a couple of thousand years by exploring those garbage piles," says Phelps. He's found that for the most part, the Indians were eating the same things we're eating today. (Unlike the colonists, however, there is no evidence that Indians ate eel.)

"Unfortunately, we tend to think of the Indians as savages living on the

verge of starvation," says Phelps. On the contrary, those native Americans had a well-developed agricultural system, producing such crops as corn, beans, peas, pumpkin, melons, potatoes, squash, cucumbers, tomatoes, onions, and herbs and spices. Some of the crops, they stored for the winter. When the stores went down, usually in the spring, they depended on hunting and fishing to sustain them.

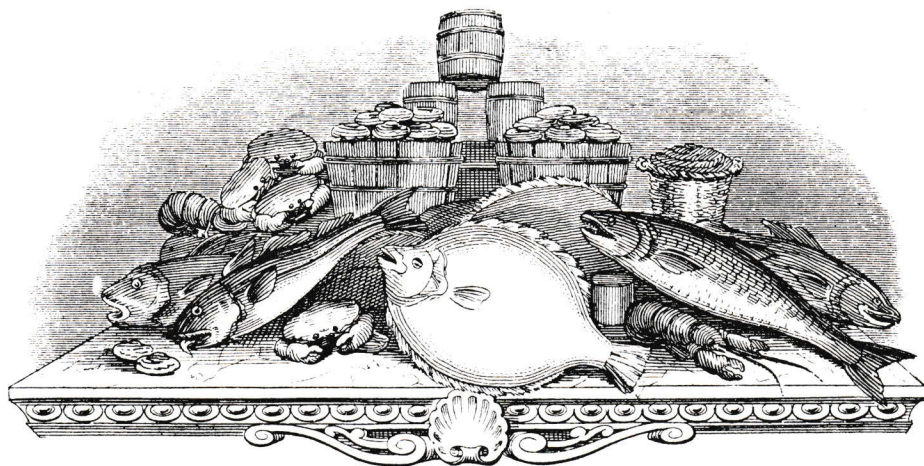
Excavations on Collington Island, on North Carolina's Outer Banks, turned up evidence that 2,000 years ago, the Algonkian Indians established fishing camps there when food was scarce elsewhere. Phelps says, "The Algonkian people knew how to get every ounce of food out of the estuarine system."

We have to speculate on how the Indians cooked their seafood, says Phelps. But John White, a colonial historian and artist, left paintings, showing that stewing and broiling were at least two of the methods.

What we eat today is a blend of the European tradition and the Indian know-how. Oyster roasts and clam bakes date back to the earliest colonial days, probably because the Indians showed the settlers how to dig a hole in the ground, line it with hot stones, and cook seafoods in the covered pit.

Joyce Taylor says her research has shown her that modern cooks can take a few tips from their colonial counterparts. The recipes may be a few hundred years old, but they've stood the test of taste. And those skates, eels and oysters—well, they're just like the ones the colonists used. Good as ever.

—Nancy Davis



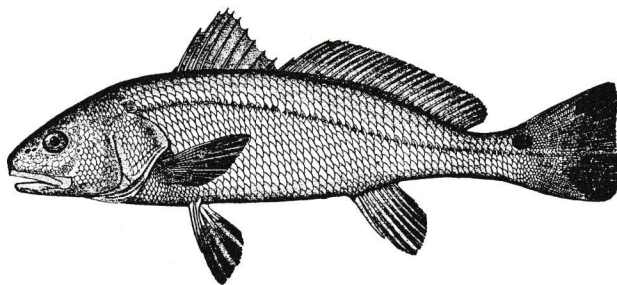


## Pine Bark Stew

*2 1/2 pounds trout fillets or other fish (you may use 2 species)  
4 bacon strips  
1 cup chopped onions  
1 1/2 cups diced potatoes  
1 quart boiling water  
2 teaspoons salt  
1/2 teaspoon dried thyme  
1/2 teaspoon dried marjoram  
2-inch piece of dried red pepper pod  
4 or 5 small tomatoes, peeled, or equivalent canned*

Cut bacon into squares and sauté over very low heat until lightly browned. Drain off all but about 3 tablespoons fat. Stir in onions and cook for about 5 minutes. Stir in potatoes, cover with boiling water, and season with salt, herbs and dried pepper pod. Simmer until potatoes are partly done, about 10 minutes. Add whole fish and continue to simmer for 10 minutes. Add tomatoes and cook for 5 to 10 minutes or more, until fish flakes easily and potatoes are tender. Remove pepper pod before serving. Serves 6-8.

Note: The modern version of this stew eliminates the original pine flavoring.



## Baked Fish with Stuffed Clams

*20 littleneck clams, scrubbed in the shell  
1 whole fish (about 3 pounds), cleaned  
1/2 teaspoon salt, divided  
1/8 teaspoon pepper, divided  
1/2 cup butter, divided  
1/2 cup finely chopped onions  
1 clove garlic, crushed  
1/3 cup fine dry bread crumbs  
3 tablespoons minced parsley  
almondine sauce  
lemon slices  
parsley sprigs*

Place clams in a large saucepan. Add water to a depth of 3/4 inch. Cover and bring to a boil; reduce heat to medium. Cook 5 to 7 minutes, or until clam shells are open. Remove clams and set aside. Add enough water to broth to make 1 1/3 cups; set aside. Preheat oven to 375°. Grease a large baking dish and place fish in it. Sprinkle fish inside and out with 1/4 teaspoon salt and

part of the pepper. Dot with 1/4 cup butter. Pour 1 cup of the clam broth into baking dish. Bake fish 20 minutes. Meanwhile, remove clams from shells. Reserve 18 half shells; place in a shallow baking pan. Chop clams finely. Sauté onion and garlic in remaining butter. Add clams, bread crumbs, parsley and remaining salt and pepper and mix well. Add enough broth to moisten. Spoon mixture into reserved half shells. When fish has baked 20 minutes, place pan of stuffed clams in oven. Bake fish and clams 25 minutes, or until done, basting fish occasionally with liquid from bottom of pan. Fish is done when it flakes easily with a fork. Transfer fish to a warm serving platter. Pour on almondine sauce. Surround with hot stuffed clams. Garnish with lemon and parsley. Makes 6 servings.

## Almondine Sauce

Melt 1/4 cup butter in a skillet over medium heat. Add 1/3 cup sliced almonds. Sauté, stirring, until almonds are golden.

(Adapted from *The Early American Cookbook* by Hyla O'Connor. Copyright 1974 by Alan Landsburg Productions, Inc. Published by Prentice-Hall, Inc.)

## Fish Muddle

*1 pound fillets  
1 pound ground pork sausage  
1 1/2 cups fresh bread crumbs  
1/2 cup minced onion  
1 egg, beaten  
1 teaspoon marjoram leaves  
1/4 teaspoon leaf thyme  
1/8 teaspoon pepper  
1 to 2 tablespoons cooking oil, optional  
1/2 cup minced onion  
1 cup water  
4 cups half and half  
1 1/2 teaspoons salt  
2 cups or more of mashed potatoes  
chopped parsley  
chopped hard-cooked egg*

Cut fish into serving size portions. Combine sausage, bread crumbs, 1/2 cup minced onion, egg, marjoram, thyme and pepper. Shape into balls using about one tablespoon mixture per ball. In a 5-quart Dutch oven brown meatballs adding 1 to 2 tablespoons cooking oil, if desired. Add 1/2 cup minced onion and continue to cook until onion is tender. Add water and bring to a boil. Cover and simmer for 10 to 15 minutes or until meatballs are done. Place fish fillets on top of meatballs. Combine 2 cups of half and half with salt. Pour over fish. Heat until fish flakes easily when tested with a fork. Combine remainder of half and half with potatoes until smooth. Heat for 2 to 3 minutes or until mixture is desired thickness. Stir in chopped parsley. Ladle into soup bowls; sprinkle with hard-cooked egg. Makes 11 1/2 cups.



# THE BACK PAGE

*"The Back Page" is an update on Sea Grant activities—on research, marine education and advisory services. It's also a good place to find out about meetings, workshops and new publications. For more information on any of the projects described, contact the Sea Grant offices in Raleigh (919/737-2454).*



It's shrimp season and no fisherman likes to find a drowning sea turtle in his shrimp trawl. He knows he loses shrimp and money every time a turtle gets tangled in his net. Trawling efficiency devices (TEDs) may offer help to fisherman and to turtles. Early evidence indicates that the devices, sewed into trawling gear, can fence the turtles and other large sea animals out. They may save lives of turtles, some of which are endangered, and allow for longer tows by trawlers.

Larry Giardina, a Sea Grant marine advisory agent at Bogue Banks, is offering five TEDs for fishermen to try out on their boats. There will be no charge for a device and Giardina will explain its use. If you're interested, contact Giardina at the Bogue Banks Marine Resources Center, P. O. Box 896, Atlantic Beach, North Carolina 28512 or call 247-4007.



For years, commercial fishermen have been catching flounder in their crab pots. That gave Etles Henries an idea. He's built a pot just for catching flounder. Henries, a Blounts Creek businessman, designed his flounder pot to be flatter and with a wider entrance tunnel than the crab pot, he says.

Henries says there's just one snag in his invention. So far, he's been unable to find a suitable bait to entice the fish into the pot. He says there's an ample supply of small fish in the sound for

the flounder to feed on, so they don't need to go into the trap for food.

This summer, Bob Hines, a Sea Grant marine agent at Bogue Banks, will be testing baits for use in the flounder pots. Henries says, "We're looking for a curiosity bait, something that will bring the flounder into the pot because he's curious about it." One possibility is a battery-powered light, placed in the pot, to draw the attention of the fish.

If he is able to find a bait the flounder like, Henries says he'll be able to sell his pots for \$8. He says a fisherman will be able to run a line of flounder pots as economically as he can set out a line of crab pots.

But Henries adds that he won't put his design on the market until he can advise fishermen on what bait to use. We'll let you know how the testing turns out.



Sea Grant has a new area specialist in the Manteo office. Rich Novak will be developing an educational program that will help recreational businesses at the coast improve their management. He'll also work with the tourism industry in analyzing the recreational needs of coastal counties and cities.

Novak comes from the Recreation Resources Center at the University of Wisconsin where he has worked as a project assistant. His other experience includes consulting for private recreational developments, teaching at the University of Wisconsin and managing recreation facilities.

Novak has a bachelor of science in Recreation and Park Administration and Business Administration from Western Illinois University, a master of science in Forest and Range Management from Washington State University, and has done post-graduate work at the University of Wisconsin in Madison.

If you would like to contact Novak, write him at the Marine Resources

Center, Roanoke Island, P. O. Box 699, Manteo, North Carolina 27954 or call (919) 473-3937 or 5441.

Had trouble getting a call through to Bob Hines or Larry Giardina, the marine advisory agents at Bogue Banks? The problem is not in your dialing. The telephone number for the Marine Advisory Services office has changed. The new number is (919) 247-4007.

But the agents have not moved. They can still be found at the Bogue Banks Marine Resources Center.



It was a rough year for homeowners with beachfront and soundfront property. Spencer Rogers, Sea Grant's coastal engineering specialist, says that an average of 15 to 20 oceanfront houses are threatened each year. But this year, about 150 were threatened. (A house is threatened if there is no substantial protection between it and the shoreline.) At Topsail Beach, one of the areas hardest-hit, over 60 houses were threatened.

Rogers blames the high frequency of northeasters, which repeatedly pounded the coast this winter, and the increased erosion in areas of high density. "I saw more erosion of dunes this year than has been typical in the last five to ten years," he says.

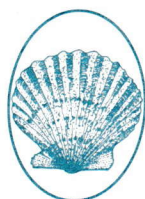
Damage wasn't confined to oceanfront property, says Rogers. "The sounds and rivers also took a beating with the worst damage on the Neuse River."

Sea Grant offers a series of five colorful 23" x 35" posters depicting erosion in four of the state's major estuaries: Core/Bogue Sounds, Albemarle Sound, Pamlico River and Neuse River. The fifth poster, "Cause and Effect," explains the reasons for estuarine erosion. For a copy of the free posters, write UNC Sea Grant. Please specify which posters you want.

*Continued on next page*



Spencer Rogers, was chosen by the Sea Grant staff as Agent/Specialist of the Year. Jim Murray, director of advisory services, says Rogers received the award for outstanding development and implementation of his extension program. Rogers developed programs that helped coastal communities solve shoreline engineering problems.



UNC Sea Grant Director B.J. Copeland says he would like to see more North Carolina researchers involved in developing the nation's ocean policy. Ocean policy involves studying the international use of our oceans and the questions of territorial rights.

Copeland has provided project initiation funds for a new North Carolina Marine Policy Fellowship Program that will be administered through the Institute for Coastal and Marine Resources at East Carolina University (ECU). The first fellowship will be awarded to a student in the ECU Department of Sociology, Anthropology and Economics under the direction of Michael Orbach, a noted ocean policy researcher.

The fellowship program will train top students in marine policy, providing leaders that will help solve tomorrow's ocean-use problems.

To keep abreast of the latest in estuarine research, the National Oceanic and Atmospheric Administration (NOAA) sponsored a national three-

day conference at the University of Delaware at Newark, June 21-23. Component members of NOAA, such as the Sea Grant Program and the National Marine Fisheries Service, provided updates on their estuarine research efforts.

B.J. Copeland, UNC Sea Grant director, moderated a session on the problems facing estuaries in the United States and the Sea Grant research being funded to combat those problems.

The conference will be followed with a National Estuarine Symposium that will be held in Raleigh next year.



Frank Thomas, of the NCSU Department of Food Science, and Sam Thomas, a Sea Grant Seafood specialist, have revised the *Technical Operations Manual for the Blue Crab Industry*. The manual is designed to help processors produce high quality crab meat. This second edition reflects regulatory changes in blue crab processing since the original edition was published. For a copy, send \$1.50 to UNC Sea Grant, Box 5001, Raleigh, N.C. 27650. Ask for UNC-SG-83-02.

It's that time of year again—hurricane season. And this just may be the year when another Hazel comes to call. Are you prepared?

Send for the new brochure, *About Hurricanes, what to do and when to leave*. The brochure tells you what to expect when a hurricane strikes, how to plan ahead, what to do if one is

forecast, and what to do after the storm has passed. The brochure also provides a large tracking map that can be used to follow the progress of this season's hurricanes.

The brochure was published by Sea Grant, the N.C. Division of Emergency Management and the N.C. Office of Coastal Management. John Sanders, Sea Grant's former coastal weather awareness specialist, acted as an advisor for the project.

For a free copy of the colorful brochure, write Sea Grant. Ask for *About Hurricanes*.

*Hurricane Emergency Planning: Estimating Evacuation Times for Non-Metropolitan Coastal Communities*, by John Stone of the NCSU Department of Civil Engineering, is written to give emergency planners in coastal communities simplified methods for estimating hurricane evacuation times. For a copy of the publication, send \$1.50 to UNC Sea Grant. Ask for UNC-SG-WP-83-2.

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