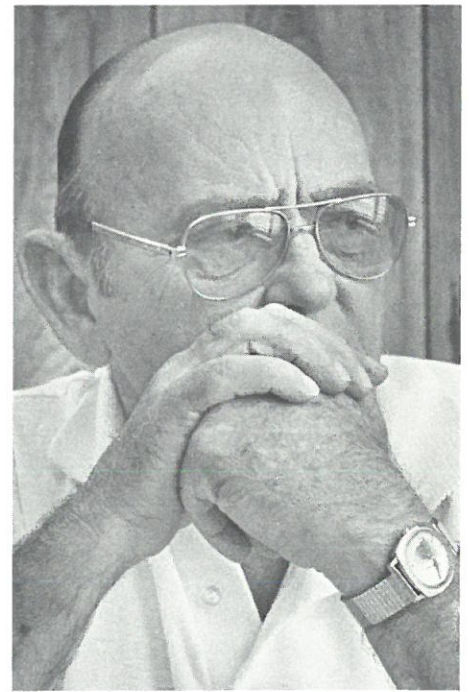
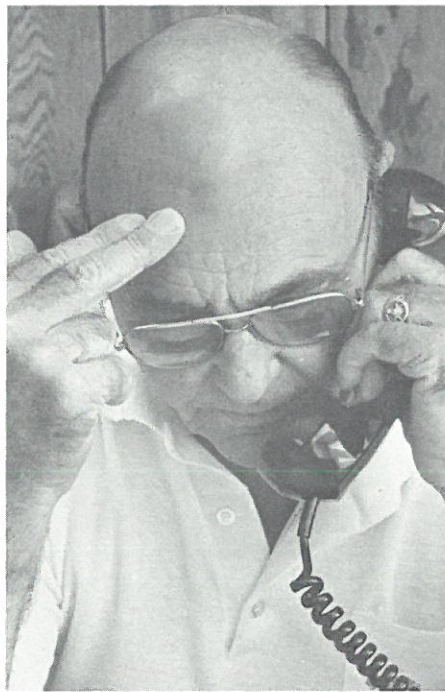
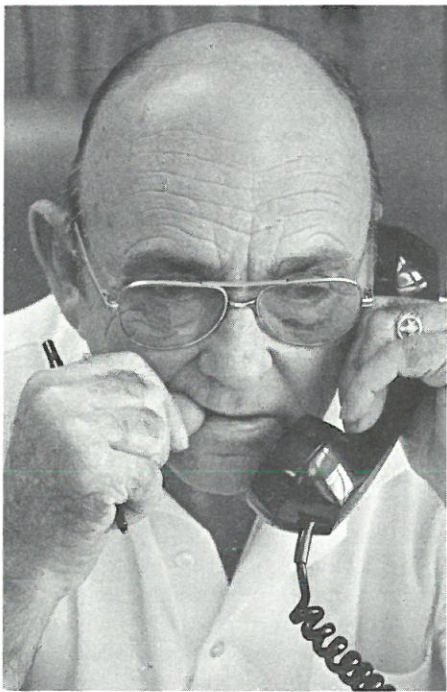




COAST WATCH



Reaching a New England fishery, Tillett inquires about squid, comes up empty, and ponders his next move

'Captain Hughes' Tillett: advice seasoned with salt

By 10 o'clock on Thursday morning, after two hours of telephoning up and down the East Coast on a wild-goose chase for squid, Hughes Tillett has the telephone in a stranglehold.

He spins another number, honeys his voice to a secretary somewhere in New England, states his business, gets nowhere, and hangs up with another number to jot down.

"Everybody gives me somebody else to call," he grumbles.

Now hold on. Any fisherman who has known Tillett since he worked a boat out of Wanchese, fishing the waters from Ocracoke to Currituck, can tell you there's something cock-eyed about this scene.

Since when did Hughes Tillett need a telephone to hunt squid? They've always been the ten-armed, saucer-eyed "trash" that you hauled up when you went floundering—hardly worth the effort to box.

"Fishing in North Carolina has changed," he argues, poking his pen at a notepad. "There were always good years and bad years, but there wasn't all this new gear to keep up with, and there wasn't as much competition as there is now. Now that there's getting to be a market for these squid, they might turn out to be something these guys can work, so that everybody doesn't have to work the same species."

Tillett is one of Sea Grant's marine advisory agents. Advising coastal residents, especially fishermen, requires a lot of legwork and a downright pig-headed determination to get the facts. That's why he spends a lot of time on the telephone.

He's hunting squid because Malcolm Daniels called him last night, woke him up and asked him for help. Daniels, a fisherman in Wanchese, has rigged a brand-new trawler just for squid. It even has an on-board freezer, the first Tillett has seen in the Outer Banks area.

The Japanese, it seems, are offering

Continued on next page

a good price for squid, so long as it's frozen almost as quickly as it's hauled aboard. In Japan, squid are known as a high-protein, delicately flavored seafood, not as trash.

After a test run, the "Captain Malc" is ready for serious squidding. But nobody can say where the beasts are all holed up. The Point Judith Fishing Cooperative in New England doesn't know, even though, in August, most of the squid are likely to be somewhere in northern waters. And the out-of-state fisheries people and Sea Grant agents don't know either. At ten-thirty, Tillett gives up and rocks back in his chair.

"The squid is an under-utilized species," he explains. "People in this country just don't know much about them."

Around the docks and fish houses, Tillett peppers his conversation with enough ripe expletives to make the tatoos on a sailor blush. Nobody raises an eyebrow. But "under-utilized" sticks out like a gin bottle at a deacon's meeting.

It's the buzz-word these days. Under-utilized sources of energy, under-utilized species of fish. It's about the only bit of bureaucratic jargon to sprout in Tillett's vocabulary since he took his "government job" with Sea

Grant in 1974. As a matter of fact, there's nothing very official about "Captain Hughes." Sure, he drives a car with state plates and uses an office in the N. C. Marine Resources Center on Roanoke Island. But he still lives in Wanchese, spends his spare time fishing, and insists that his home phone number be printed on his business cards.

He believes it's his job to support the sort of initiative it takes for a fisherman to give up some of his old habits and re-rig his mind and equipment for a different catch.

"If they don't find something new to work, it's going to be the fishermen who are under-utilized," he says.

Leaving a few messages with agencies that might hear something about the squid, Tillett climbs into his car for the drive to a sometime fisherman's house in Manteo. The man and his sons need help stitching a line into the tail bag of their shrimp net.

"We get all kinds of requests from people," he explains. "There are a lot of people, young people, moving into the area, wanting to know almost everything about the coast."

The backseat of his car is stacked with publications, and he uses them to answer many of the requests for information. They cover almost everything from eel fishing to storms. But if neither Tillett nor the booklets can answer a question, he refers the person to another agent or researcher who can.

Helping a seasoned pro—the guy whose livelihood depends on the vagaries of weather, water and fish—is not quite so simple.

"They told me, when I came to work with Sea Grant, to just work my forty hours a week, and that was enough. But I knew when I took the job that I was going to get a lot of calls at home. When else is a fisherman, who works all day in a boat, going to call you?"

To have the answers when the calls do come, Tillett combs the industry publications for news about gear, processing and fishing techniques.

"A fisherman who goes out and works all day long, and gets home after dark, a lot of the time, he's just too tired to read and keep up with everything," he says. "They call me, when they've got a problem, and I try to do their reading for them."

But the problems of the fisherman are more than just technical or trade problems, these days. People, politics



Tillett spreading word about hydraulic gear

and pollution have seeped steadily into the coastal area in recent years, taxing the region's resources and the patience of its natives. To keep up with the influx, Tillett attends meetings and conferences, asking what, if anything, can be done to protect the fishermen and the resources on which they depend.

If you're looking for a calm, private lunch, don't go out to eat with Hughes Tillett in Manteo. No matter which joint he takes you to, it seems as if he knows everybody with a sunburn more than three weeks deep. The restaurant owner's son comes by the table to say he's bought a new trawler. A brace of tanned fishermen report on the scallop catch. In return, everybody hears about the "Captain Malc" and its new freezer.

Before long, it's pretty obvious that he intends to work right through lunch. But that's part of his style—work tucked away in a large measure of socializing.

"Hello here," he calls, "what are you up to, you old lazy so-and-so?"

The fisherman grins, returns the compliment, and by the time the waitress comes for the order, the miseries of this year's shrimp season have been compared to the worst in memory.

Tillett gives the waitress a hard time about the menu, which is written to catch the tourist's eye.

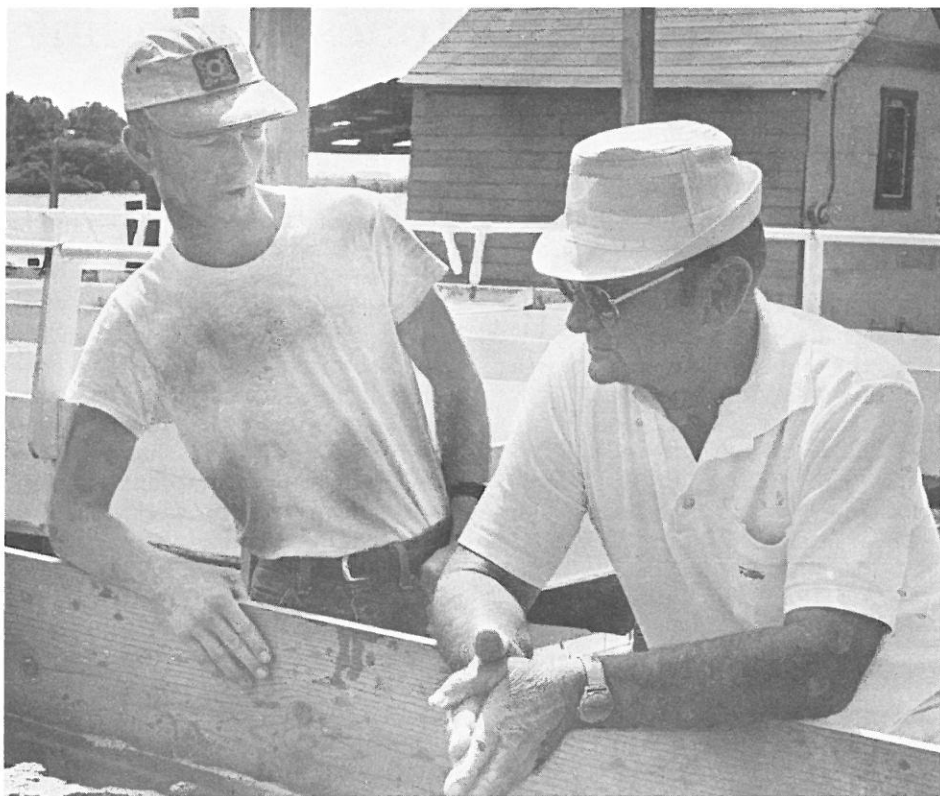
"The special is popcorn shrimp," he reads. "Now what in the world are popcorn shrimp? I never heard of that species."

Maybe the obvious question to ask him is this: Do we really need Hughes Tillett, marine advisory agent? Why not let the fishermen and coastal residents look out for themselves?

The question makes him grin.

"That's what those fishermen are always riding me about," he says. "Some days, I'll go down to see some of them, and they say, 'Are you down here loafin' on our tax money again?' But let a little time pass before I go back, and the next time I'm down there, they're saying, 'Hey, Hughes, what good are you, if you don't come around to help us?' It's just their way of kidding me."

But the question has occurred to him before, and he sums up his answer this



Mike Cox fills Tillett in on success of new aerator in peeler-crab trough

way:

"Fishing just isn't as simple as it used to be," he says. "And unless the fishermen get some help, they're going to have a hard time making it."

A few years ago, he explains, fishing in North Carolina was stalled back where agriculture was in the first part of the century: dwindling resources, antiquated methods, and youngsters who tended to desert the family business for more promising careers. Extension work made the new methods and technology available to farmers. Tillett thinks Sea Grant is, at last, providing that service for fishermen.

But he thinks no advice at all is better than the wrong kind, or the right kind from the wrong person. The idea of an outsider coming down to the docks, set on changing things overnight, is enough to make him chuckle.

"If they don't know you, they're not going to have a damn thing to do with you," he says. "It's hard enough when they know you."

They all know Captain Hughes. He grew up in Wanchese, helping his father work long-net trawlers, and has never stayed away from the area any longer than he had to.

"I enjoy working with fishermen because I've been one," he says. "I

came here in the first place because I saw a chance to help fishermen."

He also came, he adds, because fishing is just too tough on both body and soul. Murderously tough. He believes that one way he can help fishermen is by replacing some of the back-breaking, hand labor with modern equipment that saves time and muscle. When he came to work as Sea Grant's second advisory agent in 1974, hydraulic and electric pot-pullers and net-winders were rare. Now, they are common.

"Fishermen have changed a lot from the way they used to be," he says. "When I first started working with those pot pullers, fishermen were real slow to try it. They were slow to put their hard-earned dollars into things like that. You just have to keep chipping away. You get one to try it, and maybe help him put it on his boat, and then he saves himself some trouble, and the others start asking, 'How can I get one of those?'"

Back at the office, Diann Jones, the secretary and inboard motor of the Sea Grant office in the Center, has a fistful

Continued on next page

of notes for Tillett. A crabber from Cape Hatteras wants to know how he can borrow money to buy equipment. Somebody is looking for eel pots, and somebody else wants to buy a net. Tillett takes the notes back to his desk and studies them. He reads one twice: "On a good day, eight boxes." Translated from Diann's shorthand, it means that up North, they're getting eight boxes of squid on a good day.

It's not a very encouraging report. When the squid drift into North Carolina waters during the fall, flounder fishermen often catch enough in a single day to fill 100 boxes.

Tillett calls Bob Hines, Sea Grant's newest advisory agent, at his office in the N. C. Marine Resources Center on Bogue Banks. Hines has had experience with squid, and may have some contacts Tillett doesn't. Together, they go to work on the problem of how to steer a crew of North Carolina fishermen toward a decent day's work.

Whatever their working styles, all the Sea Grant advisory agents and specialists have a goal in common: They are trying to take the best available ideas and the latest research and put them to work solving problems.

—Like Hughes Tillett, Jim Bahen (N. C. Marine Resources Center/Ft. Fisher, 458-5498) works with commercial fishermen. Bahen also advises sport fishermen and conducts classes.

—Sea Grant's newest advisory agent, Bob Hines (N. C. Marine Resources Center, Bogue Banks, 726-0125), is confronting problems at several levels of the seafood industry: fishing, processing and marketing.

—Dennis Regan (N. C. Marine Resources Center/Roanoke Island, 473-3937) is an agent concentrating on recreation and tourism.

Sea Grant's advisory service also includes the NCSU Seafood Lab in Morehead City (726-7341); the eel farm near Aurora (322-4054); marine education specialist Lundie Mauldin in Raleigh (737-2454); economist and recreation specialist Leon Abbas in Raleigh (737-2454); and coastal engineering specialist Spencer Rogers at Ft. Fisher (458-5780).

Jones expanding advisory service

Advice. J. C. Jones has been in the business of giving it long enough to know that a "babe in arms" like Sea Grant will have a tough time getting everybody's attention.

Jones is a 23-year veteran of the Agricultural Extension Service, and he's watched it become a fixture in the state's communities. But he's an Ag man whose roots have found water—he's been both a captain in the Navy and the director of the state Office of Marine Affairs. He is shaping from those experiences a plan for Sea Grant's own extension work.

"I think it's already working well," he says of the marine advisory services. "But there are things we've got to do. Sea Grant got its start partly because of the success of Agricultural Extension. In a lot of ways, we can follow their lead."

Hoping to make Sea Grant's imprint on the coast as indelible as Agricultural Extension's on the farmlands, Jones spells out three goals for the advisory services program:

—More agents. Jones would like to triple the number of Sea Grant field agents from four to 12.

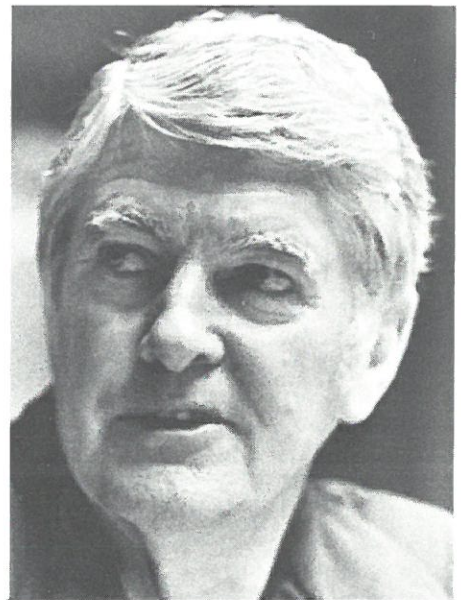
"I'd like to see at least one person who is strong in marketing and economics," he says, "and we need some additional fisheries expertise. There are some counties that could support agents of their own. Carteret, for example, could support an agent just for that county."

—A new seafood lab. Jones has already found space for a small lab in the N. C. Marine Resources Center on Roanoke Island. Like the North Carolina State University Seafood Lab in Morehead City, the smaller lab would study new ways to prepare and process seafoods.

"I'd like to see a technician up there manning that lab by the end of the year, if we can find funding," he says. "We'll need that expertise, especially when the Wanchese Industrial Park develops."

—Stronger local support. Sea Grant agents are finding plenty to do, but Jones would like to see more support for the program from coastal communities.

"If a county gets behind a program, and supports it, then the people in the county begin to think of the program



Jones coaching advisory agents

as theirs. They take more interest. This is what Ag Extension has done. Every county provides office space and some funding for the program."

He has already directed his agents to start building that support.

"I want them to meet with the county commissioners each month, as the Ag agents do. I would like to see them develop an advisory board, made up of local citizens in each county, that would point out things that agents should be working on. Also, we must establish a clientele, a group of people the agents call on regularly."

Jones says that the extension work with farmers has, over the years, developed a well-tested model for extension work that Sea Grant agents can adopt for their work with fishermen.

But working with fishermen is only a part of the advisory agents' job. North Carolina's rapidly developing coast seems to break out with a new set of growing pains each year.

"What we have to do is help see that the growth is orderly," Jones says, "and that our fragile areas are protected."

"Our role is to provide all the research available to the people who make decisions. We do not advocate. Occasionally, we make recommendations, but this is true only after a lot of sound research has been done, and we base our recommendations on that."

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 and workshops and new publications. For more information on any of the projects described, contact the Sea Grant office in Raleigh (919/737-2454).



Spencer Rogers, Sea Grant's coastal engineer, spent September surveying the damage from two hurricanes, David and Frederick. David, which made landfall in South

Carolina, was downgraded to a tropical storm before moving into North Carolina with wind gusts up to 70 mph and a storm surge two feet above normal. Rogers said some erosion occurred at Wrightsville Beach, Topsail Beach, Yaupon Beach and Ocean Isle, but damage was no more severe than that from a northeaster.

Rogers and Sea Grant researcher Jerry Machemehl found things much different in Mobile Bay, Alabama, after Hurricane Frederick. Strong winds toppled entire pine forests and mobile homes were overturned. Machemehl noted that beachfront homes with load-bearing walls built parallel to the beach were often destroyed because the strong storm surge hit these walls broadside and collapsed them.

Rogers said that other homes were destroyed because their pilings were not deep enough. He said that in many of these cases the piling depth would have met North Carolina building codes.

After viewing the destruction from Frederick, both men warned that North Carolinians should not be lulled into thinking all storms will be like David. Rogers said even though North Carolina codes for coastal construction are more stringent than Alabama codes, the state still isn't ready for the type of hurricane that struck Alabama.

Sea Grant researcher Bobby Carlile came to the rescue of the Camden Middle School recently when Camden County health officials found the school's septic system was malfunctioning. Health officials were going to require the school to build its own small treatment plant at a cost of \$50,000 to \$70,000. But Carlile found an area in the schoolyard suitable for a modified version of his low-pressure pipe system. The system can be built at a cost of \$5,000 to \$10,000. The low-pressure system is being used more and more as an alternative to the conventional septic tank system in eastern North Carolina, where the water table is high and soils do not allow good filtration.

Carlile expects to be working with more school systems throughout the state to improve their disposal systems. He says about 600 schools must upgrade their systems to meet state and federal water quality standards.



The well-traveled cownose ray, which has been frozen into slabs and shipped to Europe, may take its next trip abroad in cans.

Technicians at the NCSU Seafood Lab in Morehead City are blending ray meat into a tomato sauce and sealing the seafood into 7½-ounce cans. So far, the product is getting high marks.

After sampling ray canned in several different liquids—including brine, oil and sauces—technicians rated the tomato-sauce version highest in quality. They describe the product as flavorful and attractive, with a firm texture. It is similar, they say, to other canned seafoods.

One North Carolina businessman plans to take samples to Taiwan, where he will try to find markets for the ray.

The work with canned ray is part of an extended project the lab has conducted to research and market some of

the state's under-used seafoods. Skates and rays have been considered "trash fish" by most Americans, even though the fish are delicacies in much of Europe and the Orient. Marketing the frozen ray in Europe has been difficult, technicians say, because foreign distributors feel the reddish color of North Carolina ray meat won't be as popular with their customers as the white meat of the European rays.



Researchers know that grasses planted along the shores of sounds and estuaries can help prevent erosion. But in some areas, strong or frequent waves wipe

out plantings and continue to chew away the soil. The question has been, how can anyone predict when and where the strong waves will occur?

At least part of the answer is blowing in the wind. Because wind rumples water into waves, scientists have been able to formulate ways to project, from wind speed and direction, waves of a certain size or frequency. Two Sea Grant researchers, Ernie Knowles and Bob Weisberg, have used these techniques to predict waves in several North Carolina sounds. The methods take into account not only wind speeds, but "fetch" (the distance wind blows over water), water depth and other factors. Using sophisticated wave-monitoring gear, Knowles and Weisberg have recorded thousands of waves, correlated the data with wind records, and compared the findings to their predictions.

After nine months of collecting and comparing, Knowles reports that their methods have very accurately predicted the "period," or length of time between predominant waves in the sounds. In fact, the predictions were so close that most waves only missed their projected timetables by a fraction of a second.

Continued on next page

Knowles is also pleased with the accuracy of methods he and Weisberg are using to measure and predict wave height. He believes that these forecasting techniques will help researchers compose an atlas of the state's sounds, showing areas especially susceptible to strong waves. Using that atlas, Knowles says, landowners will know better how to choose the right protection for their shorelines.



Fishermen are getting help that is out of this world—from satellites. Jim Bahen, a Sea Grant marine advisory agent in the Wilmington area, has been working with the National Oceanic and Atmospheric Administration's National Weather Service and National Environmental Satellite Service to provide fishermen information on the location of the Gulf Stream off the North Carolina coast.

Longline fishermen who fish for warm-water species like swordfish and marlin need to know the location of the Gulf Stream and its eddies. This has presented problems in the past, Bahen said, because the Gulf Stream changes location often, and fishermen spend time and fuel looking for it.

Now, through infrared satellite photography, the exact location of the Gulf Stream and its eddies can be pinpointed. The location is being broadcast to fishermen three times a week over the VHF radio and television stations.

Since the Fishery Conservation and Management Act (FCMA) went into effect in 1976, the concept of the 200-mile fisheries conservation zone has become an accepted international standard. There are now eight regional councils working on plans to manage more than 70 fisheries in the U.S. Beginning in early 1980, the public will have a chance to comment on plans being drawn up for North Carolina fisheries.

The South Atlantic Fisheries Management council has produced a 28-minute slide/tape show which explains how the 200-mile limit and the management plans work. Sea Grant fisheries agents and recreation specialist Leon Abbas have offered to show the film and discuss the FCMA with interested groups. For more information, contact Abbas in Raleigh or any of the agents at the coast.



Lundie Mauldin, Sea Grant's marine education specialist, has won the 1979 governor's award for conservation communication. The award, made by the N.C. Wildlife Federation, is presented to the organization or individual who "best creates a public awareness of North Carolina wildlife and conservation."

The awards committee cited Mauldin's efforts, through workshops, personal contacts and publications, to inform the state's educators about coastal conservation.

Mauldin has also been elected president of the Mid-Atlantic Marine Education Association, a group of educators who promote study of the marine environment. She was elected during the association's annual conference, held Oct. 5 and 6 in Manteo.



So you fish for fun. Or maybe you're trying to make a living as a commercial fisherman. Either way, you're probably interested in cutting your costs.

Hanging your own nets is one way to do it. Sea Grant has recently published a 16-page, illustrated booklet that may help. "How to Hang a Gill Net" presents step-by-step procedures for hanging a typical, efficient gill net. It's free. Write Sea Grant, Box 5001, Raleigh, North Carolina 27650.

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