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COASTWATCH

UNC Sea Grant College Program 105 1911 Building NCSU Raleigh, N.C. 27650

The 200-mile limit: slowly but surely taking hold

It's been about two years since the Fishery Conservation and Management Act (FCMA) went into effect. In that time, the concept of 200 mile fishery conservation zones has become an accepted international standard. In the United States (US), the act's major effects have been two-fold:

—Foreign fishing within 200 miles of US shores has decreased by 27 percent, according to John M. Murphy, chairman of the House Merchant Marine and Fisheries Committee. In fact, on the East Coast, foreign vessels have taken catches well below their allocations.

—Domestic fishing, according to Representative Murphy, has increased by 8 percent. Observers say the increase in domestic fishing will be

gradual because some of the fisheries must rebuild.

But fewer than 10 of the more than 70 fishery management plans being developed by the eight regional management councils around the country have actually been implemented. As those plans go into effect, domestic fishermen are coming under regulations ranging from mandatory catch reporting to gear restrictions. (Preliminary management plans were drawn up to exclude or reduce foreign fishing in jeopardized fisheries.)

The plans, which are drawn up to manage fishery resources for individual species, affect recreational as well as commercial fishermen. Seven plans are being drafted by the South Atlantic Fishery Management Council, which

has jurisdiction from North Carolina to the east coast of Florida. "Most of them are really going to affect recreational fishermen," says Ed McCoy, of the North Carolina Division of Marine Fisheries and a member of the South Atlantic council.

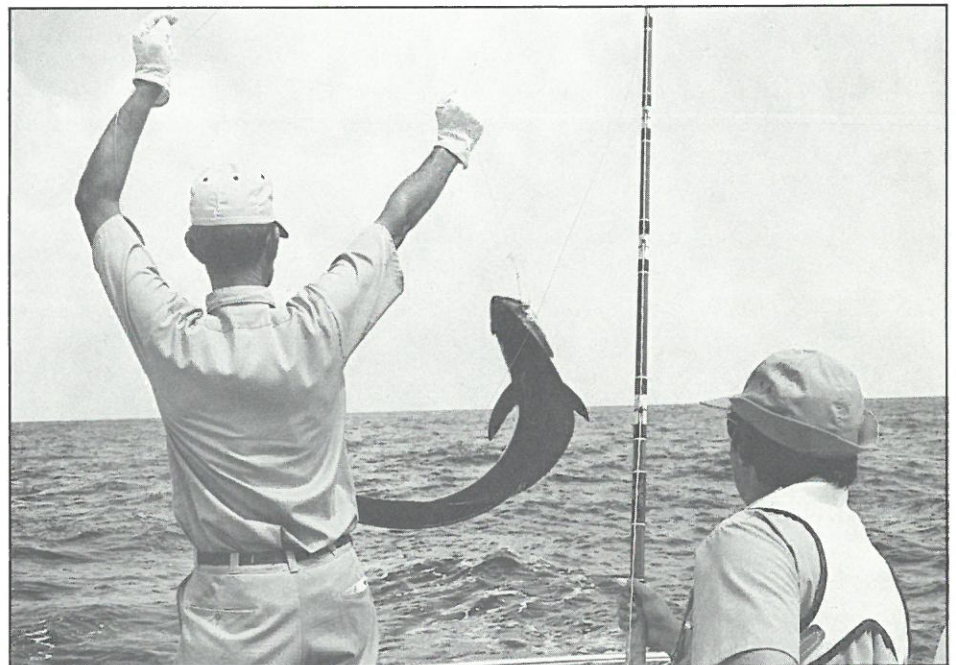
Many fishery resources are at or near full exploitation, according to Ernie Premetz, executive director of the South Atlantic Fishery Management Council. The stocks for which there is most concern are billfish, swordfish and some species in the snapper-grouper and mackerel complexes. Those fisheries are primarily recreational.

With the exception of the billfish fishery, there has been little foreign ac-



Hey look at us. We're still the Sea Grant College newsletter, but we've made a few improvements. We've given ourselves a name, *Coastwatch*, which says in a nutshell what we're all about. We've redesigned the newsletter to make it more readable and attractive. And we've added a new section "The Back Page" which will keep you informed of progress in Sea Grant research, marine education, recreation, advisory services and publications. We hope you'll approve. Be sure to let us know what you think of our new format.

We'd like to thank those of you who responded to the survey we sent out (one out of five readers was randomly chosen to receive it). Many of your suggestions are incorporated in the changes you see here.



Sport fishing off Morehead City, North Carolina

JUN 18 '79

tivity in the South Atlantic fisheries. According to Premetz foreign fleets have been inching their way south as stocks to the north dwindled. The FCMA, he says, put constraints on the development that might have occurred.

"The south Atlantic area (has) a very high concentration of recreational fishing," according to Ben Hardesty, chairman of the South Atlantic council. "Indications are that the recrea-

tional fisherman is taking a bigger percentage of snapper-grouper and the mackerel and also the billfish than commercial interests are."

While it is difficult to say how many commercial or sports fishermen fish off North Carolina, it is generally agreed that recreational fishing accounts for a significant portion of the catch. Certainly, in terms of numbers of people involved, recreational fishermen far outnumber commercial fishermen.

Gene Huntsman, of the National Marine Fisheries Service in Beaufort, reports that last year 134 charter boats (which usually carry small, private fishing parties) made 9,755 trips for a total of 58,530 angler days. About 1.85 million pounds of fish were landed. Huntsman suspects that those 58,530 angler days represent almost that many individuals. Add to that the 22,661 angler days spent on head or party boats and the unknown number of salt-water fishermen in private boats and the numbers really mount up. While the FCMA won't drastically affect all offshore recreational fishermen, it will bring some changes. Among the new regulations will be minimum catch sizes for some species and mandatory reporting on a sampling basis.

As for commercial fishermen, the FCMA involves restrictions, of course, but it also offers the hope of more fish to catch and sell. For example, the Mid-Atlantic Fishery Management Council (Virginia to New York) is drawing up management plans for butterfish and squid which are intended to encourage development of those fisheries.

While the FCMA's effect on North Carolina commercial fishermen has been minimal, the industry is expanding, according to observers. The value and volume of the state's catch have been steadily increasing for the last eight years and there has been a gradual upgrading of the fleet.

Construction has begun on the seafood park at Wanchese and there's been talk of similar parks elsewhere in the state. Efforts to export more fish—particularly underutilized species—from the region seem to be broadening. According to Chuck Oravetz of the National Marine Fisheries Service, Nigeria and Egypt are interested in mullet from the south Atlantic.

Sea Grant advisory agent Skipper Crow reports that 21 steel-hulled boats 80 feet or longer are being built for North Carolina fishermen right now. The larger boats will enable fishermen to fish farther offshore. There are some signs that fish houses may be expanding and enlarging their own fleets. McCoy says fishermen are seeing they have "got to be able to go where the fish are. You can't necessarily do that within sight of land."



FCMA and commercial fisheries—restrictions, and the hope of more fish to catch

Plans include recreational fisheries, too

The South Atlantic Fishery Management Council has seven plans in the works right now. But it looks as though it may be next spring before any of the plans takes effect.

The Fishery Management Plans being developed are for: the snapper-grouper complex, king and Spanish mackerel, billfish, swordfish, precious corals, spiny lobster and calico scallops. Work will begin late this summer on a rock and royal shrimp plan. Once plans are completed, they face public hearings and a 200- to 300-day waiting period for completion of federal procedures.

The one regulation common to all the plans under consideration is mandatory reporting of catch. Some form of reporting likely will be required for all species for which there is a plan. While no final decisions have been made, it looks as though full reporting of catch will be required for commercial and commercial recreational vessels such as head or charter boats.

In the case of recreational fishing, the reporting likely will involve sampling. A portion of those recreational fishermen who indicate at the time of licensing that they fish saltwater will

FCMA's building blocks

FCMA—Fears of stock depletion led Congress to pass the Fishery Conservation and Management Act of 1976. The act authorizes management of fishery resources from three to 200 miles off the US coast. It states that US fishermen will get first crack at allowable catches within that zone and that surpluses may be allotted to foreign vessels.

FCZ—The Fishery Conservation Zone is the area covered by the act. It includes the waters three to 200 miles out at sea. Not included is the territorial sea which is the area within three miles of shore where individual states have jurisdiction.

Regional fishery management

be required to report their catches for a given period. While the licensing or permitting details have not been worked out, Jackson Davis of the South Atlantic council staff says the

councils—Eight regional councils are charged with implementing the FCMA. Representatives from each state in a region include mandatory state and federal officials as well as appointed members. The Secretary of Commerce has final approval of the Fishery Management Plans which the councils draw up. Plans are drawn up to manage individual species within each region.

Optimum yield—The quota that the council arrives at after considering biological, socio-economic and ecological information on a given fishery is the optimum yield. It is the crux of the Fishery Management Plan. Optimum yield is then allotted to domestic and sometimes foreign fishermen.

council can require permits for any vessels fishing in the Fishery Conservation Zone.

Additional requirements may apply to both commercial and recreational fishermen and may include: size limitations on catch; gear and season limitations; and quotas. Where quotas are set, according to Ernie Premetz, executive director of the South Atlantic management council, they generally maintain the status quo and do not limit existing fishing effort. But when the quota or optimum yield is reached, a fishery may be closed for the season. Size limitations will affect current fishing practices somewhat, Premetz adds.

Besides being affected by the actions of the South Atlantic Fishery Management Council, fishermen from the region who fish off the coasts of other states will be subject to the regulations of other councils. For example, the New England council will be developing a sea scallop plan and the mid-Atlantic council a river herring plan. North Carolina fishermen participate in both those fisheries to the north. In addition, the mid-Atlantic council is considering drawing up a bluefish plan. Hearings will be held on that subject this spring.



Thousands of pounds of fish are caught aboard head boats yearly



Size limits, reporting are part of plans

Here are some specifics on the tentative plans which are closest to completion in the South Atlantic council. In some cases the full council has approved the measures and in others they are simply committee recommendations. All are subject to change as the plans are developed. The council has jurisdiction from North Carolina through the east coast of Florida.

Mackerel—While king mackerel, Spanish mackerel and cobia are included in the plan, Premetz says that the king mackerel is under the greatest stress now and will be subject to more

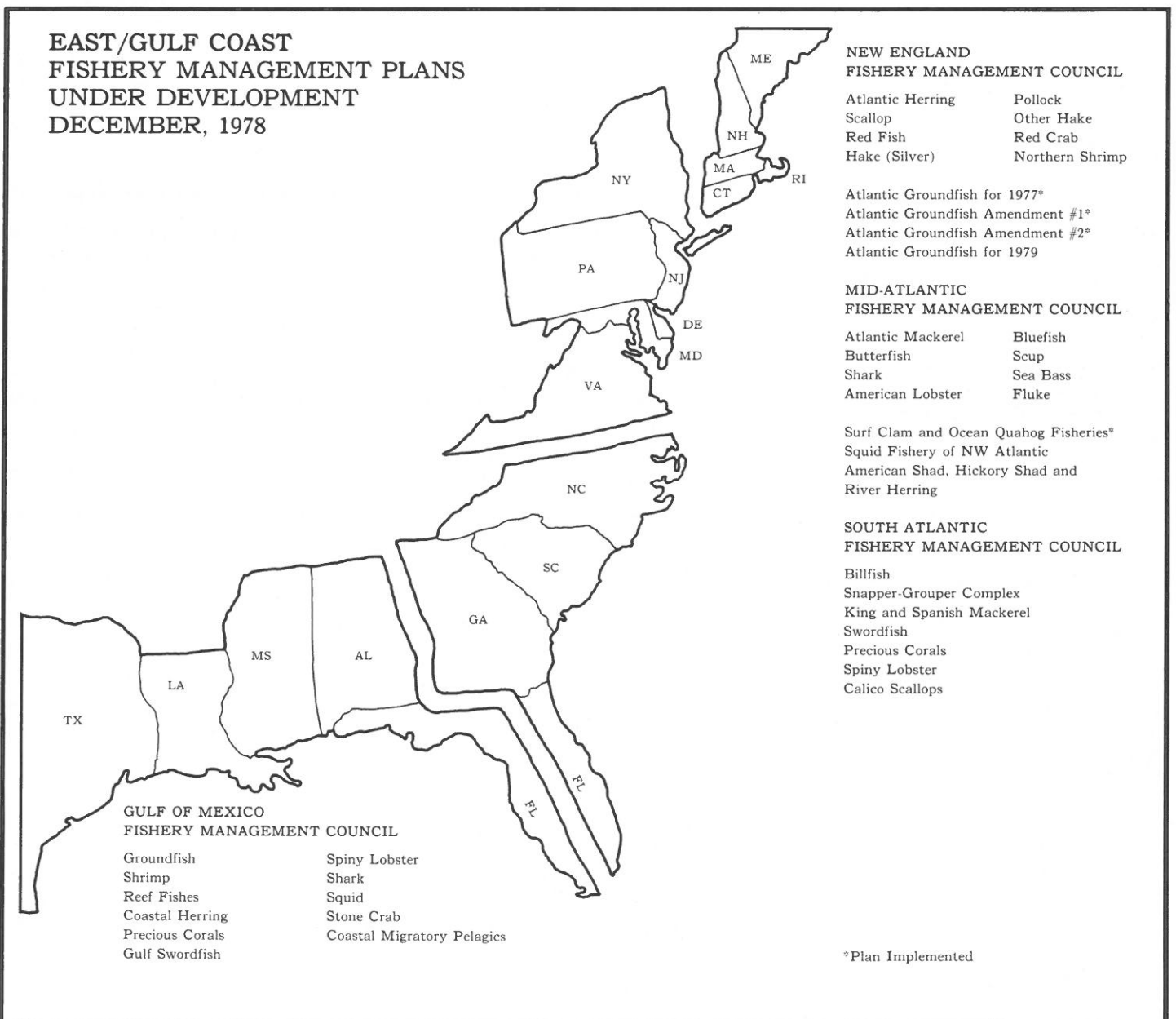
regulation. A final draft of this plan is expected in April or May, according to Premetz.

The plan, which is being developed jointly with the Gulf of Mexico Fishery Management Council, sets an optimum yield or total maximum allowable catch of 37 million pounds for king mackerel. It will be illegal to sell any king mackerel under 25 inches in length. A minimum mesh size for gill nets of four and three-quarters inches stretch will be required.

The greatest allocation of king mackerel, 28 million pounds, goes to recreational fishermen. Commercial

fishermen are allotted 9 million pounds. As the optimum yield is approached, Premetz says management measures would include bag limits for recreational fishermen, closed seasons by area and time for both commercial and recreational fishermen, pound or haul quotas for commercial net boats, and daily catch limits for commercial hook and line fishermen.

The council also is considering excluding purse seines from the fishery because, according to Premetz, "they are reluctant to open the fishery to any new highly efficient gear without determining the impact." A study has



been initiated on that question.

For Spanish mackerel, the optimum yield probably will be 27 million pounds. A 12-inch minimum length has been recommended for catches in both the commercial and recreational fisheries. Premetz says there seems to be no need for allocation now, but the purse seine issue is being considered for Spanish mackerel too.

For cobia the council is considering a minimum catch size of 33 inches for both the commercial and recreational fisheries. Premetz says that a minimum length in any fishery is a size which the council believes allows maximum yield per fish. The fish has an opportunity to spawn at least once and perhaps twice.

Snapper-grouper—This group is divided geographically into four management units: black sea bass in the northern range; and three distinct species complexes, one north of Cape Canaveral, one south of Cape Canaveral and one in the deep water farther offshore. The draft plan for this commercial and recreational fishery is expected this summer.

The two problem areas, according to Premetz, are the black sea bass and the complex which is found south of Cape Canaveral, Florida. Included in that group are mangrove snapper, yellow tail snapper, mutton snapper, lane snapper, inshore groupers, grunts and porgies. Premetz says in both cases there is gross overfishing with under-sized fish being taken.

The quota for black sea bass is 1.6 million pounds. A minimum size of 9 inches for black sea bass will be imposed in both the recreational and commercial fisheries.

For the area south of Canaveral, the quota is 8.9 million pounds. Premetz says that once more information is compiled, minimum catch size also should be set for species in the south Florida area.

The area north of Canaveral supports fisheries for gag, scamp, red porgie, red snapper, vermillion, grunts, hind and trigger fish. That quota is 4.1 million pounds. The quota for the deep water complex is 1.5 million pounds. Premetz says that fishery, which includes snowy grouper, yellow-edged grouper, black tile fish, golden tile fish and red porgie, still has considerable room for expansion.

Winner: times have changed

Skippy Winner of Wilmington has spent most of his 44 years on boats. Along with his family he operates half a dozen head and charter boats for recreational fishing. Twenty years ago, Winner says, the boats didn't have to go out of sight of land to fish. "You could catch all the fish you wanted. . . Now nobody slows down till they get out of sight of land. So the fishing has greatly declined.

"There are less fish of all species. Black (sea bass) fishing is nowhere like it was."

Fishing for snapper and grouper in the Gulf Stream "is just not even the same ball game."

And fishing for mackerel: "Everybody's been getting into it. There has been a decline in the king mackerel."

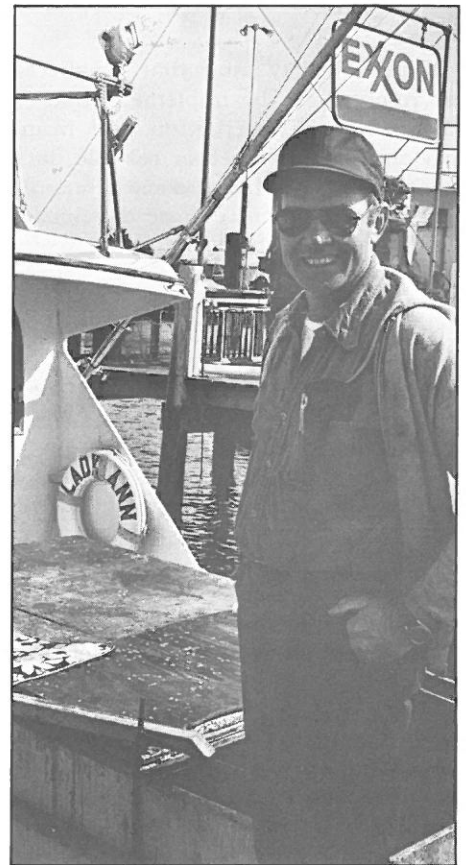
In short, Winner welcomes the regulations—even down to the detailed stipulations on fish traps in the snapper-grouper plan. Winner says fishermen often lose half their traps in a season. "They sit on the bottom and kill fish for years."

He tells of the time in the 1960s

Other restrictions being considered for the snapper-grouper fishery include regulations on fish traps. Included are limits on the number of traps to be fished by a given vessel and requirements for degradable panels in the traps. Zoning of artificial reefs also is being considered. And trawling efforts will be watched to see if controls are needed on that type of fishing.

Billfish—Included in the plan are blue marlin, white marlin and sailfish. The South Atlantic fishery council is taking the lead for five regional councils in the development of the billfish plan. The final draft is expected this month.

Under the plan, billfish will be strictly a domestic recreational fishery. Given the extent of the domestic



Skippy Winner

when he pulled up a stray trap. The wire mesh box, though finally rotting, had continued to trap fish for quite some time, Winner says. There were live and rotting fish in it at the time and the bones in the bottom of the trap were three and a half inches deep.

fishery and its economic importance, no surplus will be declared for foreign vessels.

Foreign fishermen already are excluded from the billfish fishery under a Preliminary Management Plan (promulgated by the Department of Commerce as an interim measure). However, according to council staff member Davis, the council is caught in a legal dilemma: the FCMA specifically excludes tuna from US jurisdiction within the 200 mile Fishery Conservation Zone. Japanese longliners have continued to take tuna within the FCZ and, since the billfish often are an incidental catch in the tuna fishery and since "they get a good price for them too," says Davis, it may be difficult to protect the fishery entirely.

Key issues

One of the key issues that remains to be resolved in the implementation of the Fishery Conservation and Management Act is whether reliable data on the biological and socio-economic aspects of fisheries can be developed. In determining the optimum yield of a fishery—that is setting the catch quotas—councils must consider all three factors.

But according to Ernie Premetz, executive director of the South Atlantic Fishery Management Council, "First generation plans are very weak in the area of optimum yield development. I think as time goes on that situation will change."

Mandatory catch reports may help. And studies are underway now to provide more information on recreational catches and on the socio-economic factors.

But for now, Premetz says, "What we're having to work with, quite frankly, are some really lousy statistics. And we're having to make the assumption that the fishery is fully utilized and *that* is maximum sustainable yield and optimum yield." Premetz adds "I'm hoping that the National Marine Fisheries Service (NMFS) can begin to provide useful statistics. If they don't we're just not going to be able to manage anything." Ted Rice, director of the NMFS Beaufort Laboratory, acknowledges that the act has made NMFS aware of the data it doesn't have.

While data are being developed, Premetz says, the council is attempting to maintain the status quo in the fisheries until "we can make some meaningful decisions on what will turn the fisheries around. We're trying to get all the information together first before we go willy nilly."

The lack of information also may affect the council's progress. Chuck Oravetz of the National Marine Fisheries Service office in Miami says that among the South Atlantic, Gulf of Mexico and Caribbean councils only one plan has so far been submitted for federal approval. But he says, "Some of the other councils have the advantage in that they have historical data that does not exist in the Southeast."

At a South Atlantic council meeting in January, member J. Roy Duggan criticized the group for not making



Fishing on "the inside"—the sound

decisions on the billfish plan sooner. Duggan, whose term expires this summer, said "I would hate like hell to have served on a council in which we didn't approve a single plan. . . We've got to determine to get this plan completed. . . It's hurting the whole image of this council."

Council chairman Ben Hardesty responded in an interview later that the council has needed time to get set up. "I think most of us are trying to do the best job we can with what is available to us. I for one would like to see these plans come on stream faster, but when you consider that there are seven national standards that we have to consider for each and every one of these plans and there are other laws and restrictions confronting the councils, this is why that long time span."

Implementation of the act also has

pointed up the need to manage those species—such as striped bass, menhaden and shrimp—which range from state to state in the territorial sea. FCMA applies to the area from three to 200 miles out at sea. The territorial sea is the three-mile stretch adjacent to the shore where states have jurisdiction.

Already there are interstate fisheries commissions, but council member Ed McCoy of the N.C. Division of Marine Fisheries says those commissions do not have the legal clout to carry out their plans. Consequently, efforts are being made in Congress to strengthen that system. McCoy says he is hopeful that such a bill will be enacted. While he agrees on the need for such a bill, Premetz suggests that the economic climate isn't too promising for yet another set of commissions.

THE BACK PAGE

"The Back Page" will become a permanent part of this newsletter's new look. This is where you can read about what's new in Sea Grant activities—in research, marine education, and advisory services. Check this page for new publication listings, too. For more information on any of the projects described, call the Sea Grant office in Raleigh (919/737-2454).



Sea Grant researcher Peter Fricke of the Institute for Coastal and Marine Resources and the Department of Anthropology and Sociology at East Carolina University (ECU) has begun a series of interviews with recreational fishermen along the North Carolina coast. His study is part of a larger effort to learn more about the recreational fishery off North Carolina.

Recreational fishing is an important activity along the state's coast. Its popularity is growing by leaps and bounds. On a typical sunny summer day, marinas and piers bustle with activity; thousands of small boats troll sounds and nearshore waters, and surf fishermen eagerly line up along breakers in pursuit of prize catches.

For the hundreds of businesses that have developed around the recreational fishing industry such growth has been a real boon. But it has also intensified pressures being placed on finite fishery resources and fueled the growing controversy between commercial and recreational fishing interests.

Specifically Fricke's study is focusing on the socio-economic characteristics of the small boat recreational fishery for pelagic species, including king and Spanish mackerel, bluefish and false albacore. The National Marine Fisheries Service estimates that this segment of the recreational fishery has doubled in the last two decades.

Through a series of interviews with recreational fishermen, Fricke hopes to find out such information as: who par-

ticipates in the recreational fishery and why, how much value they place on the fishing experience, how much money is generated by the fishery, the frequency and duration of fishing trips, what species of fish are being caught and how they are used, what effect recreational fishing is having on fish stocks, and what impact regulatory policies will have on the fishery.

This information is basic to fishery management plans being formulated by state resource agencies and by the regional councils under the Fishery Conservation and Management Act.



With the help of Sea Grant funds, three graduate researchers at the University of North Carolina's Institute of Marine Sciences in Morehead City will be looking at the effectiveness of grass transplants in revegetating sea grass meadow areas damaged by boating and shellfish harvesting activities.

The grasses that grow in estuarine and nearshore environments provide valuable habitat for many commercially important fish and shellfish. They also form the basis of the food web upon which many marine organisms depend.

Unfortunately these grasses are easily disturbed by the activities of man. Shoots are easily broken off and entire plants uprooted by whirling propellers, shellfish dredges and clam kickers. In nature it may take years for a damaged area to recover.

But researchers Mark Fonesca, Jurij Homziak and W. Judson Kenworthy believe that it may be possible to shorten the recovery time by using grass transplants. In this project they will try to transplant sea grasses into a 3.2 hectare site in Back Sound, southeast of Cape Lookout. Commercial scalloping activities in the area have completely denuded the site of eel grass cover. The researchers will monitor the area to see how well different grass mixtures work and what sort of

changes occur in populations of fish and shellfish as the area revegetates. If the experiment is successful, it could become an important management tool for the restoration of damaged areas.



Coastal recreation is a subject that appeals to inlanders as well as coastal residents. So for the past two springs Sea Grant's recreation specialist Leon Abbas has presented a series of lectures in Raleigh on coastal recreation. This year the series also will be presented in Charlotte. It will run four consecutive Monday nights in the North Carolina State University Faculty Club on Hillsborough Street in Raleigh and four consecutive Tuesday nights in the auditorium of the Best Western Coliseum Motel, 3024 East Independence Blvd., in Charlotte. Lectures will begin at 7:30 p.m. and are open to the public free of charge. Here's the schedule:

Pier and surf fishing in North Carolina, Robert Goldstein of Raleigh, author of *Pier Fishing in North Carolina*. March 19 in Raleigh. March 20 in Charlotte.

Sharks, Frank Schwartz of the Institute of Marine Sciences in Morehead City. March 26 in Raleigh. March 27 in Charlotte.

Shelling on North Carolina beaches, Hugh Porter of the UNC Institute of Marine Sciences in Morehead City. April 2 in Raleigh. April 3 in Charlotte.

Getting started in family boating, J. Rodney Hall of Rock Hill, S.C. April 9 in Raleigh. April 10 in Charlotte.

Also on the recreation front Sea Grant agent Dennis Regan has a hand in planning a one-day statewide scuba conference. The meeting will be held at the Marine Resources Center on Bogue Banks and will treat various aspects of diving in North Carolina—from under-



water photography to submarine armament. Regan says the workshop will be open to interested divers and dive shop owners. The final date hasn't been set, so watch "The Back Page" for further information or call Regan (Marine Resource Center/Roanoke Island, 919/473-3937).



Supplemental funds were recently awarded to biologist Don Kapraun of UNC-W to continue studies started last year on the feasibility of establishing a nori har-

vesting industry in southeastern North Carolina. Nori, a lettuce-like marine algae, is cultured and harvested in the Orient where it is used extensively as a seasoning and protein supplement. A similar species of nori (*Porphyra sps.*) is also found growing on oyster reefs in shallow tidal creeks along the southeastern section of the state.

In earlier studies supported by Sea Grant, Kapraun discovered that the unique reproductive pattern of the algae meant that as many as three crops could be harvested during a single growing season. He also found that the nutrient content of the plant (37 percent protein per dry gram) rivaled that of even the most expensive, grade A variety produced in Japan.

Kapraun believes that it may be possible to commercially harvest nori during late winter and early spring, providing North Carolina fishermen with a "back-up" industry. With the

additional research support, he will look at the standing crop of the algae in North Carolina and determine its cash value. Nick Williamson of the International Trade Center at Research Triangle Park will study the supply and demand for nori as well as price levels on both domestic and foreign markets. Because the algae thrives in polluted waters, the researchers hope that nori taken from such areas still will be safe for human consumption. As part of the study, Marvin Speck of North Carolina State University (NCSU) and Louis Adcock of UNC-W will test for bacterial, viral and heavy metal contamination of nori taken from waters closed to shellfishing.



Coastal resources and problems will be the subject of two-day marine social studies workshops later this month and in April. Secondary social studies teachers will

review the one-semester high school course which introduces the coastal environment and its multiple uses. Also included in the course are the conflicts and political solutions surrounding the use of the coastal zone.

Sea Grant's education specialist, Lundie Mauldin, is helping to put the workshops together. Teachers interested in signing up may contact John Ellington at the Division of Social Studies in the N.C. Department of Public Instruction. Workshop dates are: March 29-30, at the University of North Carolina at Wilmington; and

April 5-6 at the College of the Albemarle, Elizabeth City. Workshop sponsors are the Office of Coastal Management, the Office of Marine Affairs, UNC Sea Grant and the Division of Social Studies.



Severe deterioration is occurring in asbestos cement bulkheads located in coastal North Carolina. Jerry Machemehl, NCSU, has determined that the

failures occur in estuarine areas where the waters are acidic and contain high levels of dissolved carbon dioxide. A report describing the field and laboratory work and outlining the causes for asbestos cement sheet failures is available from Sea Grant, Box 5001, Raleigh, NC 27650. Ask for Working Paper 78-1. It's free to North Carolina residents; out-of-state charges are \$4.00.

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