

COASTWATCH

Photo by Joel Arrington



Whirly birds took these largemouth bass from Currituck Sound

Gone Fishing

Anglers — not an easy group to characterize. They're the fishermen who drop a line from a bridge for tonight's dinner. They're the sportsmen who pay hundreds of dollars for a chance to fight a marlin. They're the anglers who seek the competition and big purse of tournaments.

Although a varied lot, their goal is always the fish at the end of the line. And the lure of that fish brings millions of dollars into the state's economy. It also unites fishermen to take a stand for recreational interests — ample stocks, habitat preservation and saltwater access.

This month *Coastwatch* will examine the impact of sport fishing on the state's economy and the political pressure anglers are exerting on management boards. Next month, we will focus on how recreational fishing can remain a viable sport for the future.

Buoys, bait, boats—big business

To most people, big business in North Carolina means textiles, tobacco and three-piece suits. But to others, it's fishing poles and waders that are making the economy's wallet bulge. The state reeled in about \$193 million from recreational fishing in 1980, says the U.S. Department of Interior. And few doubt the sport will prosper in the years to come.

Thousands of anglers travel to the Carolina coast each year to take advantage of the huge inventory of fish. They come equipped with boats and tackle, but often need food, fuel, other supplies and a place to stay. The spending quickly adds up for towns like Manteo and Hatteras and keeps North Carolina one of the nation's leading saltwater fishing states.

Despite the widespread economic impact of recreational fishing, statistics on saltwater anglers in North Carolina are sparse. The diversity and mobility make it difficult to compile reliable data.

Most of what we know comes from experts in the business. Research provides the rest. Such information would benefit the fisheries, new businesses and coastal management, says UNC Sea Grant researcher Jeff Johnson, an anthropologist at East Carolina University. Knowing how anglers spend their money could give merchants an idea of what to stock. And knowledge of incomes may help the policymaker decide if a proposed saltwater fishing license is affordable.

One widely known fact is that North Carolina shares its waters with fishermen from all directions. The majority of them are North Carolinians, but others come from Virginia, Florida, Ohio, Pennsylvania, Maryland and other Eastern states.

The reasons they fish here are many, says Joel Arrington, outdoor editor of the N.C. Division of



Photo by Joel Arrington

Charter boats add thousands of dollars to the state's economy

Travel and Tourism. They're lured here year-round by the Outer Banks, the closeness to the Gulf Stream and an extensive system of estuaries and sounds.

Just as the state's location entices fishermen from different areas, it attracts both Northern and Southern species of fish, says Arrington. In the winter, saltwater anglers put out their hooks and lines for striped bass and gray trout. During the summer, they fish for larger species like tarpon, pompano and Spanish mackerel. Flounder, perch and bass are popular game in the sounds.

To catch these fish, most fishermen in the state use small boats or

fish from banks, piers and bridges, says Charles Manooch of the National Marine Fisheries Service in Beaufort. But the big money rides on the waves of the wealthy offshore fishermen.

It comes in on boats of different sizes, too, according to Jim Bahen, a Sea Grant marine advisory agent in the Wilmington area. More specifically, three types of anglers fish off our coast, he says.

The first group owns the boats you gawk at in marinas — the 30- to 60-foot ones that cost from \$30,000 to \$1 million. "Somebody that could afford a boat such as that is in his late 30s or 40s, has a good income and is established," says

Bahen. He or she probably makes \$80,000 or more a year.

A second group includes the young executives whose annual salaries range between \$50,000 and \$90,000. They frequently fish in tournaments, as many are geared specifically to them.

Families with smaller boats make up the third category of sport fishermen. With salaries of \$25,000 to \$40,000, they use their boats to travel to the Outer Banks or teach the kids to ski, Bahen says. And when there's the chance, the fishermen in the family puts out a net or line.

The inshore fisherman has different characteristics, says Johnson. During a two-year study, he compiled information on fishermen from six regions of North Carolina's sounds. His work examines bank fishermen, who fish from banks, piers and bridges, and boat fishermen.

The typical sound fishermen are white males in their early 40s who have enjoyed recreational fishing for over half of their lives. Each year, they spend an average of 40 days on the water, waiting for croaker, trout, bass, or any other edible species to bite their bait.

Of the two types of sound fishermen, those who fished from boats were most like offshore anglers. They were more educated, worked in white-collar jobs and had higher

incomes. On fishing trips, boat parties of two or three people spent an average of \$212 in 1982, while bank fishermen averaged \$238. Most of their expenses were for lodging, food, fuel, bait and tackle and boat maintenance.

Other than expenditures for goods and services on a fishing trip, tournaments and charter boats are big moneymakers for the state. In the off-season, billfish and mackerel tournaments attract hundreds of saltwater sport fishermen anxious to hook the biggest fish or catch one of the prizes.

Tournaments "have a great economic impact in a limited area for a short period of time," says Arrington. Some effects are documented in a 1979 survey of 1,060 saltwater tournament fishermen by Sea Grant researchers Leon Abbas and Peter Fricke. They found that fishing parties spent an average of \$978 for each tournament entered. This included all expenses but entry fees. They also noted that the average fisherman was 42 years old, had a college education and made about \$70,000 a year.

Rich Novak, a Sea Grant marine recreation specialist, recently completed another study of participants in a drum tournament in Hatteras last fall. From a sample of returned surveys, he found that most of the money spent by fisher-

men was for lodging, meals, groceries, gas and beverages. Since the event was on the Outer Banks, the men and women tended to stay in the area for a few extra days, and brought along a few friends.

North Carolina's economy also benefits from the use of 100 or more charter boats or headboats. For \$300 to \$550, six people can hire a large fishing vessel for day or half-day trips. But this pleasure may be on the decline, says Bahen. Many of the charter boats are staying closer inshore to save on fuel costs.

When gas is expensive, the big ticket items like charter boats do feel a pinch, says Arrington. But he feels the greater affect is on tourism. "The fishing's not cut back, but travel is. People don't travel as far to fish."

So if you want to go offshore and don't mind fishing with a few more folks, you can take your tackle aboard a headboat. They take about 100 people, and it costs about \$30 to \$45 a day, says Bahen.

Although the price of saltwater fishing is rising, merchants and businesses associated with the industry need not worry. Sport fishermen will keep casting their lines as long as there are fish to catch. And that's good news for North Carolina's economy.

—Sarah Friday

Photo by Steve Murray



The promise of tranquility and fish lure many anglers to North Carolina waters

Hooked on fishing

Photo by Jim Bahen



Jay and John Banner

Sherry Banner says her husband, John, isn't a typical recreational fisherman — he's a fanatic. John admits that, weather permitting, he spends almost every weekend fishing 20 to 30 miles off Wrightsville Beach or Southport.

He primarily slow trolls with bait for king mackerel. But he also "plugs" (casts with artificial bait) for speckled trout in the fall and winter.

John says he has always been interested in recreational fishing — saltwater and freshwater. But his family's move to Wilmington five years ago turned him from an occasional fisherman to a hardcore angler. He admits to already clocking 400 hours on the 22-foot Mako he bought last April.

What draws John to bait a hook and cast a line? He enjoys matching wits with fighting game fish and the taste of freshly caught fish hot out of the oven.

But he stresses that fishing for the Banners "is a family affair." Sherry and son, Jay, often accompany John on his offshore trips. "It has really given me a lot of one-on-one time with my son," John says. "And Jay's become such a good fisherman that he's almost to the point where he's teaching me."

And a good offshore angler is one with experience to his credit, sturdy tackle in his hand and good equipment on his console, John says. John's boat, Whiskey-Jack, is equipped with a VHF radio, LORAN-C and a chart recorder.

"I rely on electronic equipment quite heavily," he says. "It helps you to find underwater structures, ledges or wrecks where game fish congregate, and it allows you to go back to those same spots time and time again."

But electronic equipment, a good boat and sturdy tackle can amount to a hefty bill for the offshore fisherman. John estimates that a boat like his, light tackle (20-pound class) and a few electronics could easily cost a

recreational fisherman \$20,000 to \$22,000.

And then there's the matter of gasoline and oil for each trip. John uses about 60 gallons of gasoline per trip, costing him from \$65 to \$85. But John often pays for his gasoline by selling his catch to local fish dealers. (Recreational fishermen must buy a license to sell their catch.) And he catches his own bait with a 12-foot cast net.

Each year John puts his fishing skills to the test during five to six king mackerel tournaments. "I enjoy the competition, the friends you make and the chance to make some pretty good money." (Tournaments award cash prizes for the largest catches, and a participant jackpot, called the Calcutta, is divided among the winners.)

Although John is an avid angler, he also is concerned about conservation. He feels that many stocks are overfished commercially and recreationally. "I think it is time that we had more controls — net sizes, catch quotas, licenses — on recreational and commercial fishing. There's got to be some compromises on both sides."

John favors a saltwater fishing license if the money from the license is funneled back into the recreational fishery through better regulations, more enforcement and development of artificial reefs. "A saltwater license would show just how many saltwater fishermen there are out there," he says. "I think people will be surprised at that number."

John believes most recreational fishermen favor a license. A license would offer anglers an opportunity to provide input into regulations that are inevitable, he says. "With increased catches and better equipment and boats, it's hard for a fish to find a place to hide," he says. "That's why I think we have got to have better conservation."

—Kathy Hart

Casting for political clout

It used to be that a fishing club was a social club. Members gathered to talk tackle, rods and reels and to swap tall tales of fish caught — or almost caught.

Today's recreational fisherman is a different breed. He's more likely to talk of coastal habitat, nursery areas, and access to salt water. He wants tighter regulations on some species. He wants a bigger say in policymaking decisions.

In the political arena, anglers are demanding attention. Little wonder folks are beginning to listen. Estimates of the number of saltwater sport fishermen in the state range from 350,000 to 800,000. Whichever figure you choose, the numbers add up to clout. (See story, p. 2 for the economic value of the sportfishing industry.)

To add strength to their numbers, sport fishermen are banding together. They've found that even though they're a diverse lot, they have common causes.

In 1983, with the help of Sea Grant marine recreation specialist Leon Abbas, the N.C. Saltwater Fishing Federation formed. Comprised of club and individual memberships totaling over 1,400 anglers, the federation is "a voice for the recreational fisherman in North Carolina," says Bob Stryker, federation president. Through the federation, recreational fishermen are raising a unified voice.

Frequently anglers' interests are at odds with those of commercial fishermen. Often they fish for the same species, but their motivations differ. Anglers claim commercial fishermen are overfishing stocks. The latter protest they are only earning a living, that recreational fishermen fish for sport instead of income.

Recreational fishermen claim the commercial fishermen have had the advantage of representation on policymaking boards such as the N.C. Marine Fisheries Commission. People like Stryker would like to see more of their own on the commission, representing



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—Bob Stryker

the recreational interests.

"Historically the recreational fishery has never been recognized as an economic factor," says Stryker. But as recreational fishermen pump more dollars into the state's economy, that excuse has faltered.

"I think the marine fisheries division is beginning to realize that the recreational fisherman is a viable, active source of political pressure," he says.

N.C. Division of Marine Fisheries Director Bob Mahood says, "We've had an ongoing recreational program. The artificial reef program has been the main thrust of our efforts. . . . But everything we've learned about finfish pertains to the recreational as well as the commercial catch."

In the past, lack of money has been the biggest limiting factor for recreational fishery programs. But recent legislation expanding the Dingell-Johnson Act may change that. Enacted in 1950, the bill allocated the

proceeds of a 10 percent federal excise tax on certain items of fishing tackle for state fisheries agencies. The funds have been available to freshwater fisheries for years and have been used by the N.C. Wildlife Resources Commission for projects such as inland boat ramps.

The latest bill expands the excise tax to include additional taxes on fishing equipment and makes funds available specifically for saltwater projects. In March, the division will hold a series of public hearings to find out how anglers want the money to be spent. The meetings will be held on the coast as well as in some inland cities since that's where most of the recreational fishermen live. (For a list of dates and locations, see the "Back Page" section of *Coastwatch*.)

Mahood estimates the tax could generate \$100 million of new money nationwide. For North Carolina, the bill could mean as much as \$200,000 to

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\$450,000 for saltwater projects.

Mahood says the first priority for the new funds will be a study to find out how many recreational fishermen there are, how much money they spend and how they impact the fisheries.

Stryker says the federation is in favor of a saltwater fishing license. The only recreational fishing license now issued by the state is administered by the N.C. Wildlife Resources Commission, which handles items relating to freshwater fishing. In the Southeast, Louisiana, Texas and Alabama require saltwater fishing licenses. In addition to generating more money, a saltwater license would give managers a more accurate idea of the number of saltwater fishermen in the state.

Although the nonprofit Saltwater Fishing Federation is prohibited from lobbying, Stryker says members are encouraged to exert political pressure individually. At the top of the anglers’ list of grievances is the state’s handling of declining catches of striped bass. A prized recreational catch, the striped bass is known as a good fighter and even better table fare. But it’s also been an important commercial species.

The N.C. Marine Fisheries Commission set a 12-inch total length limit for striped bass in internal coastal waters and a 24-inch minimum in the Atlantic Ocean. In 1984, the commission set a closed season on striped bass from June to September.

But recreational fishermen say the commission didn’t go far enough. In other states, concern over the declining populations has led to outright bans on striped bass fishing.

By June 1985, the state must comply with the Atlantic States Marine Fisheries Commission’s management plan for striped bass or the federal government could institute a moratorium on striped bass fishing. The plan calls for closure of spawning grounds to striped bass fishing, a 14-inch minimum size limit in internal waters, a 24-inch limit offshore, and a 55 percent reduction in landings over

what would have been achieved had the state instituted the measures in 1982.

Recreational fishermen favor the plan set by the Atlantic States Marine Fisheries Commission. Stryker says the federation would like to see North Carolina enforce strict regulations on the striped bass. Commercial fishermen, on the other hand, say further regulations would threaten their livelihoods.

Stryker downplays any animosity between recreational and commercial fishermen. After all, he says, their ultimate goal should be the same. “In the federation, we’ve tried to make it known that we’re looking for an improvement on the resource and we’re not out to hassle the commercial fishermen. Anything we can do to improve the resource has got to benefit all of us,” says Stryker.

—Nancy Davis



Photo by Joel Arrington

Anglers hope stricter regulations will revive the striped bass fishery

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). For copies of publications, write UNC Sea Grant, NCSU, Box 8605, Raleigh, N.C. 27695-8605.



For teachers who want to add a tropical note to their classroom lessons, Lundie Spence has a workshop for you. Spence, UNC Sea Grant's marine education specialist, is organizing a nine-day teachers' workshop in Mayaguez, Puerto Rico, July 14 to July 22. The workshop is designed for sixth, seventh and eighth grade teachers and supervisors.

It will provide educators with environmental teaching skills for classroom and field-oriented activities. They will explore coral reefs, mangrove swamps and rain forests. And the investigative skills they learn can be applied to the temperate North Carolina coast.

The workshop also provides an opportunity for cultural and educational exchange between North Carolina and Puerto Rican educators. This will be a bilingual program, but knowledge of Spanish is not necessary.

The cost of the workshop is \$360, which includes housing and a subsistence allowance. The plane fare from Raleigh to Mayaguez is about \$600. Participants will be responsible for obtaining their own tickets.

The workshop is limited to 15 participants, and applicants will be accepted on a first-come basis. A \$100 deposit, due by May 1, will secure a spot.

Teachers and supervisors can receive continuing education credits

from North Carolina State University, gifted and talented credit, and possibly two graduate credits in education. For more information or an application form, write Spence at UNC Sea Grant, Box 8605, North Carolina State University, Raleigh, N.C. 27695-8605 or call 919/737-2454.



UNC Sea Grant is offering a marine policy fellowship for graduate study leading to a master's degree in the Department of Sociology, Anthropology and Economics at East Carolina University. The fellowship, which is administered through the ECU Institute for Coastal and Marine Resources, provides a student with a \$6,000 stipend, full tuition and fees (including out-of-state tuition), and funds for supplies, travel and other research expenses. The graduate student will work with Michael Orbach, a maritime anthropologist in the department, on marine policy issues.

Applicants should submit complete transcripts, graduate record examination scores, a statement of interest and at least three references to Orbach at the Institute for Coastal and Marine Resources, East Carolina University, Greenville, N.C. 27834. For more information, call Orbach at 919/757-6883 or 757-6779. Applications should be submitted by April 15.



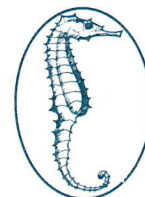
Almost every day a fisherman calls Sea Grant agent Wayne Wescott to ask about shedding crabs. How do I know when a crab will "bust?" Should I use a flow-through or closed recirculating system to shed crabs? How should I market my crabs? How much profit can I expect?

To help crabbers answer these questions, Wescott is planning a soft-crab workshop March 2 from 10 a.m. to

4:30 p.m. at the Beaufort County Community College in Washington. Experienced shedders will be on hand to tell other fishermen about their successful shedding methods. The workshop will include discussions on blue crab biology, peeler identification, harvesting methods, facility design and marketing.

And this year, experts will discuss shedding crabs in well-water, temperature-controlled recirculating systems. Crabbers in areas plagued with poor water quality or sand and silt problems can use well water to shed crabs. And crab mortalities in these systems are as low or lower than systems that use brackish water.

The fee for the workshop is \$5 in advance or \$6 at the door. For more information about the workshop or to register, write Wayne Wescott, UNC Sea Grant, Marine Resources Center/Roanoke Island, P.O. Box 699, Manteo, N.C. 27954 or call 919/473-3937. Make checks payable to UNC Sea Grant.



Sea Grant researcher Mike Orbach, a maritime anthropologist at East Carolina University, will again offer a course on marine policy at the Duke University Marine Laboratory from July 15 to August 16.

The course introduces students and professionals to marine policy and policymaking. The history of marine organizations, legislation and issues will be traced, and their effects on local, regional, national and international arenas will be explored.

Students taking the course may receive credit from either the University of North Carolina at Chapel Hill or Duke University. The deadline for preregistration is April 15, but students may enroll until the first day of class.

For more information about the course, write Orbach at the Depart-

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ment of Sociology, Anthropology and Economics, East Carolina University, Greenville, N.C. 27834 or call 919/757-6883. For registration information, call the UNC Institute of Marine Sciences at 919/726-6841 or the Duke University Marine Laboratory at 919/728-2111.

UNC Sea Grant was awarded \$1,210,000 in federal funds for 1985 by the National Sea Grant College Program, which is part of the National Oceanic and Atmospheric Administration. This will be the first year of an approved three-year grant cycle. The program will receive an additional \$605,000 in state matching funds through the N.C. Office of Marine Affairs.

To focus scientific attention on the possibilities of marine biotechnology, UNC Sea Grant, the North Carolina Biotechnology Center, the University of North Carolina at Chapel Hill Program in Molecular Biology and the UNC-Chapel Hill Marine Science Program will sponsor a conference March 24 to 26 at the Quail Roost Conference Center.

Conference participants will identify prospects for specific, scientific applications of biotechnology to marine phenomena. For more information about the event, write conference organizer Dirk Frankenberg at the Marine Science Curriculum, 12-5 Venable Hall 045-A, UNC-Chapel Hill, Chapel Hill, N.C. 27514 or call 919/962-1252.



The Use of a Flat-Plate Current Meter in Nearshore Flows, by D.K. Hollingsworth and F.Y. Sorrell of the NCSU Department of Mechanical and Aerospace Engineering and T.B. Curtin of the NCSU Department of Marine, Earth and Atmospheric Sciences, describes how a flat-plate current meter can be used to measure currents in nearshore waters. Measuring currents by conventional oceanographic techniques is difficult and often inaccurate. This new device will make accurate measurements more easily obtainable. And the measurement of water velocity and temperature in nearshore areas can provide information useful for proper management.

For a copy of this paper, write UNC Sea Grant. Ask for UNC-SG-WP-84-5. The cost is \$2.25.

Research for Managing the Nation's Estuaries: Proceedings of a Conference in Raleigh, North Carolina includes the challenges, papers and discussion presented at the first National Estuarine Symposium last year. The 420-page book was edited by UNC Sea Grant Director B.J. Copeland and the Sea Grant communications staff — Kathy Hart, Nancy Davis and Sarah Friday. For a copy of the book, write UNC Sea Grant. Ask for publication UNC-SG-84-08. The cost is \$8.

The N.C. Division of Marine Fisheries will hold a series of public meetings to find out how recreational fishermen want additional Dingell-Johnson funds to be spent (See story, p. 5). The meetings will be held at 7:30 p.m. at the following locations: March 6, Kermit E. White Continuing Education Building, Elizabeth City State University, Elizabeth City; March 7, Willis Building Auditorium, East Carolina University, Greenville; March 12, Holiday Inn North, Winston-Salem; March 13, Room 119 in the new court facilities of the Cumberland County Courthouse, Fayetteville; and March 14, Room 302, New Hanover County Courthouse, Wilmington.

For more information, contact the Division of Marine Fisheries at 1-800-682-2632.

A reminder: The North Carolina Commercial Fishing Show will be held March 15 to 17 at the Crystal Coast Civic Center in Morehead City.

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