



Coastwatch

UNC SEA GRANT ■ APRIL 1990



Photo by C.R. Edgerton

River Herring. Like droves of blackbirds, the herring come. They converge, funneling through the sounds and into the rivers. They've fostered the economy, health and traditions of many coastal communities. But the herring's days seem numbered. The annual spawning run of this fish is dwindling. Who or what is to blame? This month, *Coastwatch* takes an in-depth look at the river herring fishery in North Carolina.

Where have all the herring gone?

B Y K A T H Y H A R T



Murray Nixon

Murray Nixon knows river herring. He knows how to stake a pound net just off the shore to get a herring to “play into” the lead, the heart, the tunnel and finally the “crib,” where it’s as good as in the frying pan.

He knows what it is to eat herring three times a day and be happy that he could put meat in the bellies of his young ‘uns.

And he knows that the herring fishery, the source of much of that meat for several generations of Nixons, is dying a slow death.

Nixon has lived a lifetime about a mile from the Chowan River. He’s fished herring commercially, sold it at his fish house and now helps manage it as a member of the N.C. Marine Fisheries Commission.

As he rakes his hat back across his salt-and-pepper crew cut, he talks about the fish he knows.

“They would come in like droves of blackbirds. . . play along the shoals into millponds and ditches, roll around among the cypress and spawn,” he says.

But no more.

“Last year was the sorriest year we ever had for herring,” Nixon says bitterly.

River herring catches plummeted during the last 15 years, bottoming out in 1989 at a little more than 1.4 million pounds. In its heyday, this Albemarle fishery netted more than 40 million pounds of river herring.

“It’s the runoff from farms, manufacturers and septic tanks,” he says. “And there’s more people living on the waters.”

As evidence of the pollution, he describes the mats of blue-green algae that have coated the Chowan River “like paint” during the summers since the 1970s. The algae, he claims, cuts off the oxygen supply to eggs and young fish.

“You got to hatch ‘em to catch ‘em,” he says with a note of finality.

And he’s right.

Charles Manooch, a research biologist with the National Marine Fisheries Services in Beaufort, has studied the river herring and other fish of its kind, striped bass and shad.

They’re anadromous fish. They live as adults in the ocean but move to fresh water to spawn. Like herring, the spring runs of striped bass and shad have also waned.

Manooch believes the herring’s instinctual return to the rivers to propagate may be its roadblock to survival.

The Chowan and Roanoke, the core rivers of the North Carolina herring fishery, show the signs of human intervention and abuse.

Dams and other water projects have altered the natural flow of these rivers, Manooch says. Spring floods now last for weeks instead of days, changing key environmental signals for these fish of inbred habit.

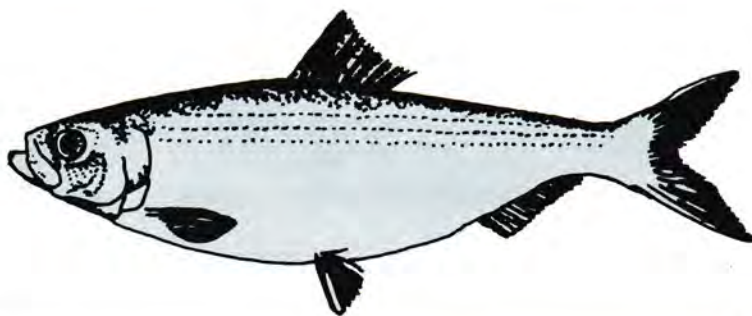
These instincts also drive herring to

Photos by C.R. Edgerton



A pound net in the Cashie River awaits the annual herring run.

RIVER HERRING



return to their waters of birth.

"Herring seek shallow fingers of waters—ditches, millponds, creeks with sometimes only two to three inches of water," Manooch says.

But often the fish find access to these natal streams cut off by bridges, highways, building projects and beavers.

And what man hasn't altered, he's polluted, Manooch says.

The discharge from industries and waste treatment plants and the runoff from farms, forests, city streets and backyards funnel nutrients into the sluggish Chowan and swifter Roanoke.

During sultry North Carolina summers, the nutrients trigger blue-green algal blooms that choke the Chowan River. The blooms, Manooch says, are sometimes toxic to the fish. Other times they rob the river of needed oxygen or crowd out tiny plants the herring find more edible.

"Anadromous fish populations are declining because they must come upriver to spawn and this deeply connects them with man," Manooch says. "And man has not been kind to rivers."

Lee Wynns, co-owner of Perry-Wynns Fishery Co., once the nation's largest herring processing plant, also speaks disparagingly of the quality of the Chowan water that runs beneath his shoreside plant.

"Herring are just like you and me," he says. "If we're traveling, we'd rather stay at a clean place than a dirty one."

But once the herring return to the ocean, they have faced another problem: fishing pressure created by fleets of huge factory ships capable of netting and processing enormous catches. Foreign fleets scooped up tons of the fish during the late 1960s and early '70s.



Fishery managers blamed these factory ships for the initial, sharp decreases in North Carolina landings later in the decade. Seeing the effects of the high sea heists, state and federal managers restricted offshore fishing.

But by then the damage was done.

Perry-Wynns' vats no longer brimmed with pickled and salted herring. The days of million-pound processing were gone. Now Wynns counts himself lucky to cut and salt a million pounds of the bony fish in a whole season.

With the drop in available fish also has come a decline in consumer demand, Wynns says.

Herring costs too much now to be the poor man's fish that once fed the multitudes of eastern North Carolina. And, with the push for healthier, quick-fix foods, people no longer hunger so much for herring slow-fried to a crispy brown.

Workers process imported Canadian herring at the Perry-Wynns Fishery in Colerain.

So, what does tomorrow hold for the herring fishery?

An upstream battle.

Between fishing pressures and poor water quality, it may just be a matter of "whether the herring can hang on," Manooch says.

Murray Nixon shakes his head sadly. "The fish just keep going away," he says in a gravelly voice. "And people ain't going to eat herring anymore anyway. There's too many bones, and they don't have time to fix 'em."

But the bony fish don't stick in Nixon's craw. "I love to eat 'em, love to smell 'em and love to work in 'em," he says. ■

"A million herring in one night . . ."

BY CARLA B BURGESS

It has been said that the foundations of Amsterdam were laid on herring bones. A little digging in coastal North Carolina history shows that the community timbers there, too, rest on the bony fish.

"In the bygone days, it was essential that everyone have a barrel of herring," says Phillip Cecil "Tee Wee" Blount of Jamesville. "It depended on how many you had in the family as to how many herring you needed."

Salt herring fed the masses, without regard to class or wealth. The fish, high in protein and calories, were a cheap and abundant source of food and a cog in the region's economic wheel.

"It was one of the few foods we could get that was cheap," he says.

In those days most of the herring caught ended up on the table. Today it's used mainly for fish bait and animal feed.

"We sold fish to anyone who would buy them," says Murray Nixon, a commercial fisherman in Edenton. He recalls that he and his father would count out 200 to 300 herring in a "washed-out fertilizer bag" at \$5 per thousand. "All the families would come down to the river and buy their fish for the year."

Nixon says his family kept two or three barrels in a smokehouse for their own use, each containing about 3,500 herring. The fish were preserved in various ways—pickled, dried or "corned," meaning cut and salted.

Nixon said his father drove a mule and cart down to the river to fish and would send the animal to and from the house throughout the day, the flat bed laden with herring each trip.

"I started out fishing with my father and as the years progressed got my

own rig," says Nixon, whose youngest son Ricky now heads up the fishery operation.

The fishing scene in and around the Albemarle Sound is rich in history. The further back one goes, the more lively the picture.

Reporter and adventurer Porte Crayon, in an 1857 spring issue of *Harpers New Monthly Magazine*, describes the shores of the Chowan as "teeming with life and activity." At Colerain, "busy crowds composed of whites, blacks and mules wage unceasing war upon the shad and herring," he wrote.



N.C. Division of Archives and History

Porte Crayon's view of women "cutting" herring in 1857.

The Belvidere Fishery, Crayon wrote, was a protrusion of sheds and buildings, toward which the fishing boats would approach, the dotted cork lines of their seines enclosing the beach in a semicircle.

He described the tremendous hauls—sometimes negotiated by teams of mules—which landed as "a wriggling mass . . . ten or 15,000 voiceless wretches, whose fluttering sounds like a strong rushing wind among the leaves . . ." They were scarcely landed before they were "beheaded, cleaned and salted away."

The annual herring run, crucial to the wealth of the region, was "a subject of as general conversation and all-absorbing interest to the inhabitants as is the yearly overflow of the Nile to the Egyptians," Crayon wrote.

A seine of that time—2,700 yards long and 24 feet deep—was laid upon platforms on the sterns of two heavy 10-oared boats and could involve more than two miles in aggregate length, the reporter said.

Commercial fishing in the Albemarle region pre-dates Crayon's account.

The first fisheries on the Chowan River date back to the early 1700s, and seine fishing was reportedly taking place by 1765. Products of the fishery were exported—the higher grades of salted and pickled herring to Portugal and Spain and lower grades to the West Indies.

A German immigrant, John Penrose Hettrich, was credited with introducing "pound" nets—a stationary trap of stakes and net—in the region after coming here from fishing the Great Lakes in 1869.

The pound net afforded greater hauls with less manpower. In 1890, one pound-net fisherman reportedly caught a million herring in one night.

Even further back, herring are prominent in the history of the early colonial settlements. Herring and other abundant fish were used as money and bartered for sugar, spirits, coffee and other goods.

When asking about the heyday of the herring, one may hear references to the rivers running black with herring and to the flipping and splashing of the silvery fish along the shoreline during spawning.

The fishery in Chowan County was



In the early years of this century, herring nets were hauled in by boats with steam engines.

reportedly yielding a billion herring a season by 1880. Fisheries and wildlife officials determined in the 1960s and 70s that in good years, more than a million herring were taken by recreational fishermen using dip nets.

As recently as the 1950s, Perry-Wynns Fishery Company in Colerain—once considered the largest freshwater herring processing plant in the world—saw seasons with as much as a million pounds of fish per day processed there.

“Every bit of that was right out of

this river,” said co-owner Lee Wynns, whose herring processing now is closer to 25,000 pounds per day and is not heavily dependent on local catch.

The herring themselves, as well as the demand and labor force, continue to decrease in numbers.

Changing eating habits, accompanied by a changing economy, have lessened the role of herring in today’s society of convenience, the old-timers say.

“Anybody 50 years old and down ain’t going to eat too many herring,”

says Nixon. “Everybody now has got too much money to eat herring.”

Still, during spring, the driveway down the hill to the Cypress Grill and nearby River’s Edge in Jamesville is lined daily with cars as visitors crowd inside for the crisp-fried herring and a taste of nostalgia.

Outside along the riverbanks there’s a hint of sadness in the faces of some of the fishermen and onlookers over the fish’s decline. But from his grocery in town, Blount—who has a small supply of corned herring for sale up front—just accepts it.

“The Lord knows what we need,” he says, “and when we needed herring they were here.” ■

Hard times for herring fishermen

B Y C . R . E D G E R T O N

Guy Cox sits on the hard clay bank of the Roanoke, munching on a river herring fried so brown you can’t tell where the fry ends and the meat begins.

“May as well sit here and eat ‘em, I sure can’t catch any,” says Cox, the 23-year-old son and grandson of fishermen-farmers.

The familiar white rubber boots of the river fisherman are pulled midway his calfs. His jeans are muddy and his

face carries the pink trademark of windburn.

The coffee-with-cream colored river is cold and swift. It runs high and heavy with silt.

Cox has been on the water since early morning, doing everything the way his daddy taught him years ago.

Plow your boat upriver about 500 feet. Coax your gill net to flow evenly out the front of your wide-bodied john boat. Allow it to drift as you float

about a quarter of a mile downriver. Then swing your boat back around to the southside of the churning river and pull the net in, sliding the herring into the boat as you pull.

But this morning the fishing has not been what it once was, when he and his daddy happily lugged in as many fish as the small boat would hold.

“I didn’t catch nothing worth talking about today,” says Cox, an industrial electrician who fishes commercially



Guy Cox

only during the annual herring run in March and April.

"Five or six the first drift and maybe seven the second. That's nothing compared to what people used to catch on this river."

He's younger than most Roanoke River fishermen—he was initiated into this annual rite of spring at four years old—but he remembers when fishermen would catch 100, maybe 200 herring in a single drift.

"I could get out there with my daddy, and we'd have so many fish in the net we'd have to haul them in real fast so the boat wouldn't sink before we got to shore," he says. "It certainly ain't like that now."

He recalls stories from his father and other longtime Jamesville residents who remember the haul seine that operated just across the river until World War II.

The long net would be floated to the river's south bank, then hauled back with a steam-powered winch to the north shore. Old timers saw thousands of fish per haul, he says.

Cox watches several other fishermen drift downriver, the bright yellow and orange floats on their nets creating an S on the fast-flowing current. Their boats are empty too.

He is saddened by the drastic decline in the Roanoke River herring fishery and blames man for its condition.

"If it keeps going like it is, there won't be no herring in seven, eight years," he says.

Amen, says Murray L. Nixon, a fisherman who's spent his life reaping

the harvest of the Chowan, the Roanoke's sister river. In the wider, lazier Chowan, Nixon has set as many as 24 pound nets in a single season.

Pound-net fishing is labor intensive. One net requires hundreds of yards of mesh and more than 30 hand-cut, hand-trimmed poles to form the net's unique shape and keep it stationary in water.

So, poor harvests can be especially hard on the pound-net fishermen of the Chowan, Cashie and Middle rivers.

Other methods of catching herring—such as eel pots, fyke nets, hoop nets, trotlines and rod-and-reels—don't require as much work as pound nets, but fishermen using these methods also report hard times.



Photos by C.R. Edgerton

After a third drift downriver, Cox counts 14 fish for his morning's work and quits for the day. Seventy-seven-year-old Hubert Williams watches Cox place a cloth cover over his drift net and hook his boat to a trailer.

Williams has just eaten at the Cypress Grill, a restaurant that until a few years ago still had sawdust floors. It's difficult to distinguish the grill from the weathered fishing shacks that line the riverbank.

Folks from all over eastern North Carolina gather at the Cypress Grill in March and April to eat fresh herring cooked the traditional way: fried deep brown. It is only open during the herring run.

Williams wipes his mouth with the sleeve of his flannel shirt.

"We used to use dugout canoes and drift nets," Williams says of his days as a fisherman. "The current would be so strong, and we'd have to paddle against it to get back to the landing here."

The dugouts would be full of herring, he says. "And we didn't mind the hard work."

The Jamesville riverfront grays a little as the mid-afternoon sun falls behind tall gum trees on the bluff overlooking the Roanoke.

Guy Cox drives off with his boat in tow. The crowd at the Cypress Grill thins and Hubert Williams sits on the riverbank, twirling a twig in the calm

Hubert Williams

water by his feet.

"It ain't like it used to be and won't ever be the same again," he says.

"You've got to leave some little ones before they can come back as grown ones. And that's something we just ain't doing." ■

The Cypress Grill at Jamesville



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, Box 8605, NCSU, Raleigh, N.C. 27695-8605.



Come May 1, North Carolina shrimpers will have to TED-up.

It will be time for the fishermen to sew turtle excluder devices into the tailbags of their trawl nets.

Last year the federal government saw-sawed on enforcement of the TED regulations, and fishermen balked at using the devices designed to expel endangered sea turtles from shrimp nets.

Aside from resenting the government's intervention in the plying of their trade, fishermen declared that the devices lost the very catch they worked so hard to net—shrimp.

But Sea Grant agent Jim Bahen listened to shrimpers' complaints and along with netmaker Steve Parrish did something about them.

They made modifications in the two most popular TED designs—the Parrish TED and Georgia Jumper. By making the changes, the nets now do a better job of retaining shrimp.

To learn more about the modifications, send for Sea Grant's newest Blueprint, *Reducing Shrimp Loss Through Net Modifications in TEDs*. It will explain what the modifications are and how they work.

The Blueprint also provides test data from nine trawls in the shrimp grounds off the Georgia coast.

To receive a free copy, write UNC Sea Grant. Ask for UNC-SG-BP-90-1.

Joyce Taylor fed the multitudes. The fare?

A helpin' of seafood information.

More than 800 people packed an auditorium at Elizabeth City State University during two sessions of the Pasquotank County Cooking School to hear Sea Grant's seafood education specialist Joyce Taylor.

Taylor, the featured speaker at the early April cooking school, extolled the attributes of fish and shellfish. And to prove her point, she cooked a few delectable dishes for sampling.

The cooking school is an annual event sponsored by the Pasquotank County Agricultural Extension Service and *The Daily Advance* in Elizabeth City.



Aquaculture is big business in North Carolina.

And Sea Grant researchers play key roles in making sure the business expands and becomes more efficient.

Some of these researchers are featured in the winter issue of *Research Perspectives*, a quarterly magazine published by the N.C. Agricultural Research Service at North Carolina State University.

In the magazine, Sea Grant's associate director Ron Hodson talks about his work with farm-raised hybrid striped bass and zoologist John Miller explains the intricacies of fish migration.

Tom Losordo, NCSU's extension aquaculture specialist, presents a close look at the water quality requirements of farm-pond aquaculture.

Other articles deal with the creation of artificial marshes and expansion of trout farming in North Carolina's mountains.

For a free copy of the winter issue and a free subscription to the magazine, write to *Research Perspectives*, Department of Agricultural Communications, Box 7603, NCSU, Raleigh, N.C. 27695-7603.

Crawdads used to be poor man's fare in the South.

Now folks are calling them crayfish and eating them in upscale restaurants in Cajun cuisine that's as "hot" as it tastes.

To meet the increased demand, some Tar Heel farmers are raising crayfish in their farm ponds. And with production of crayfish comes the inevitable processing of these cultured crustaceans.

That's why Sea Grant's seafood extension specialist David Green is teaching producers about processing and marketing.

Green arranged an afternoon workshop for the N.C. Crayfish Association in Greenville. If you would like more information about crayfish production or processing, contact Green at 919/726-7341.



Saltwater anglers, dust off your tackle boxes.

It's fishing tournament time.

The N.C. Division of Marine Fisheries has compiled a list of 39 saltwater fishing contests scheduled along the Tar Heel coast this year.

The tournaments will be sponsored by community and regional fishing clubs and most will take place between May and October. The only exception is the North Carolina Saltwater Fishing Tournament, which lasts all year and recognizes the top angler for each species.

The contests include several tag and release events, which are encouraged by the Division of Marine Fisheries as a means of helping conserve some species.

For more information on tournament entry requirements, contact the Division of Marine Fisheries in Morehead City. The number is 919/726-7021.

If you'd rather hone your angling skills without the pressures of a tournament, attend the North Carolina State University

Sport Fishing School.

The school, reported to be the oldest of its kind in the United States, will be held in two sessions: May 12-18 at Walker's Cay in the Bahamas and July 17-22 at Hatteras. Participants may attend either session.

The program emphasizes offshore angling and includes classroom instruction. The staff is made up of biologists, marine resource managers, tackle representatives, charter boat captains and university personnel.

For more information contact Mac Currin, Department of Zoology, Box 7617, North Carolina State University, Raleigh, N.C. 27695-7617. Or, call Alice S. Warren, the fishing school's coordinator, at 919/737-2261.

If you've noticed a new name tagging the article about herring history, then you're an observant reader.

Carla Burgess is the newest writer to join the Sea Grant communications staff. She replaces Sarah Friday, who left the staff in December for *The News and Observer*.

Burgess, a graduate of North Carolina

State University, worked for *The Laurens County Advertiser* in South Carolina and *The Sun-Journal* in New Bern.

She brings to the staff a background in news and feature writing.



Gear up for The Big Sweep, North Carolina's annual waterway cleanup, in an all-cotton T with a new colorful design for 1990.

The white T-shirt shows hands pitching

in to sweep our shores free of litter. The design is trimmed in a bright border of teal, gold and rose.

To order, send \$8 plus \$1 postage and handling per shirt to Sea Grant, Box 8605, NCSU, Raleigh, N.C. 27695-8605. Postage and handling costs will be waived on orders of more than 10 shirts. Make checks payable to The Big Sweep.

The shirts are available in small, medium, large and extra-large. Be sure to specify the sizes and quantities.

Money from T-shirt sales will support The Big Sweep.

Get in the spirit and order now. And remember to mark your calendar for the Sept. 22 cleanup!

Coastwatch is published monthly except July and December by the University of North Carolina Sea Grant College Program, 105 1911 Building, Box 8605, North Carolina State University, Raleigh, N.C. 27695-8605. Vol. 17, No. 4, April 1990. Dr. B.J. Copeland, director. Kathy Hart, editor. C.R. Edgerton and Carla B. Burgess, staff writers.

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