

# FISHING

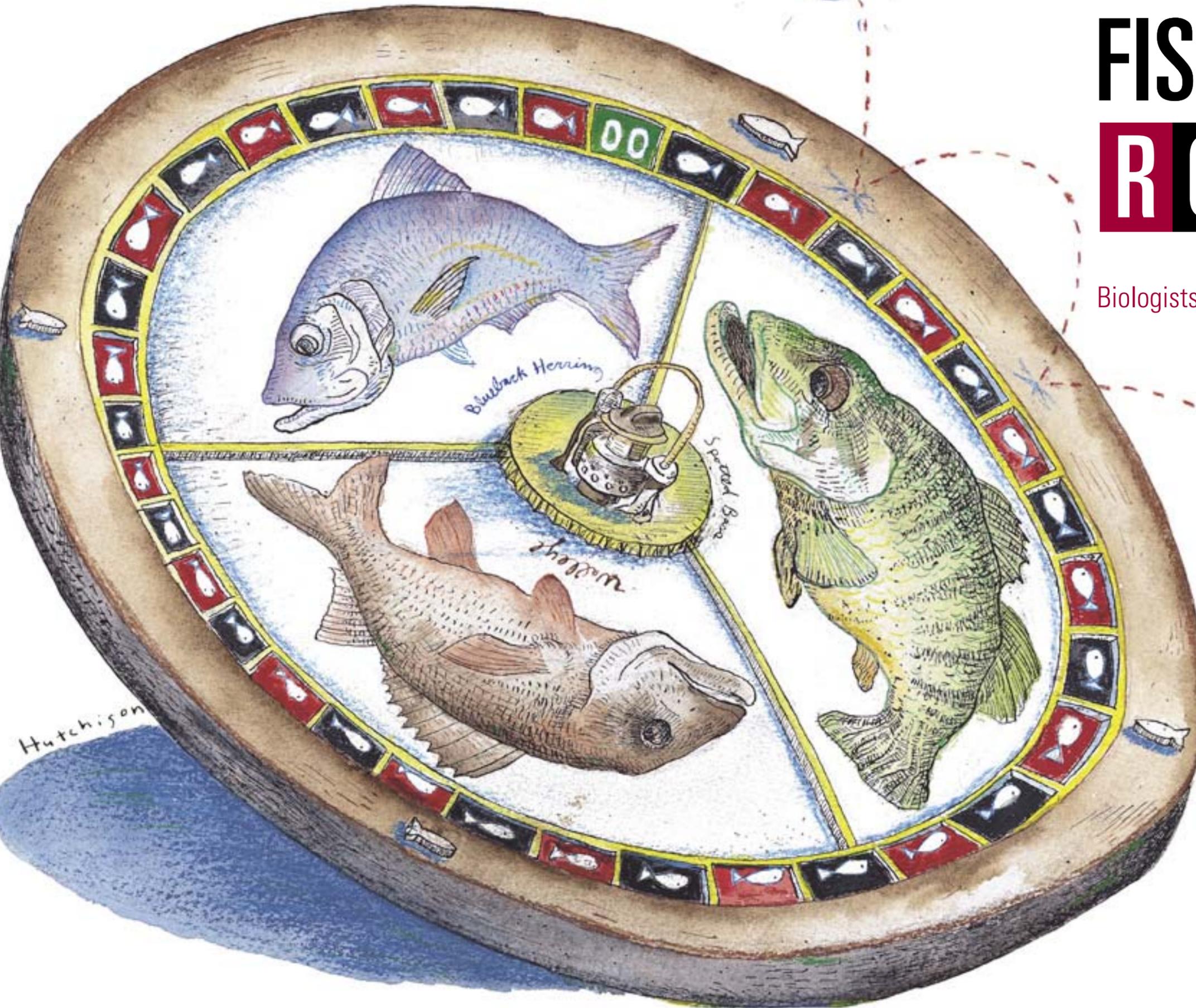
# ROULETTE

Biologists urge anglers to leave fish stocking to the pros.

written by Dan Kibler  
illustrated by Thomas Hutchison

There are few ways for a fish to change its address. Once spawned in a stream, about the only thing a fish can do is keep moving downstream into larger streams and finally into a river, a bay or the ocean. As for moving upstream, that's the specialty of migrating fish such as salmon. If a fish is spawned in a lake, it's there to stay, unless it sweeps over the spillway in a flood or figures out how to survive a trip downstream through a dam. And then there's the human fish mover.

Say you've got a lake or river that's your "home" fishing hole. You occasionally venture out to another body of water, and you find a fish you really enjoy catching that doesn't inhabit your home waters. Boy, wouldn't it be nice to catch that fish in your own lake or river? So, you collect him—and a few of his girlfriends—where they live, put them in your boat's live well or bait bucket, proceed home and release them into your local honey hole. Then, you've got the best of all worlds. What could be better?



Biologists cringe at the thought of anglers introducing non-native species in lakes and streams — either game fish or forage fish. An overwhelming percentage of the time, the introduced species doesn't take hold, and it disappears quickly from its new home — evicted, as it were. But sometimes, when a species is introduced into a lake where it doesn't belong, it leaves the home waters forever altered.

"People can bring in fish by the thousands, and nine of 10 times, it doesn't hurt or help anything, but that tenth time, it ruins everything," said David Yow, a fisheries biologist for the N.C. Wildlife Resources Commission who oversees reservoirs fisheries in the western third of the state. "When people move fish around without regard to the consequences on other fisheries, all manner of complications can result."

During the past dozen years or so, commission biologists have had to deal several times with species showing up, unannounced, where they don't belong. Most were brought in and introduced by well-meaning fishermen. The results, on the whole, have not been great.

In the early 1980s, spotted bass appeared in Lake Chatuge, a 7,500-acre reservoir along the Georgia-North Carolina border in Clay County near Hayesville.

The lake had a great population of hybrid bass and walleye (the state record fish for both species are from Chatuge), as well as a healthy black bass fishery made up of smallmouth and largemouth bass in about a 2-to-1 ratio. Apparently, a lot of fishermen liked the spotted bass that nearby reservoirs such as Georgia's Lake Lanier offered. So they brought them to Chatuge in their live

wells, in good numbers. Those fishermen wanted spotted bass for their tough fighting nature. But bass fishermen who preferred smallmouth bass for many of the same reasons didn't get any choice in the matter. And in 10 or 12 years, most of the smallmouth bass were gone.

"Gradually, the spots became more numerous, and they were pretty much occupying the same habitat the smallmouths were. There was competition in feeding and reproducing, and spots are a little more tolerant of a variety of conditions. They probably had a little advantage over smallmouths," Yow said. "Now, the largemouth bass have maintained

population in Hiwassee Lake in Cherokee County near Murphy. In the late 1990s, numerous blueback herring, a species of river herring, appeared at Hiwassee. Biologists believe they were introduced from Nottely Lake, a north Georgia reservoir that's upstream from Hiwassee.

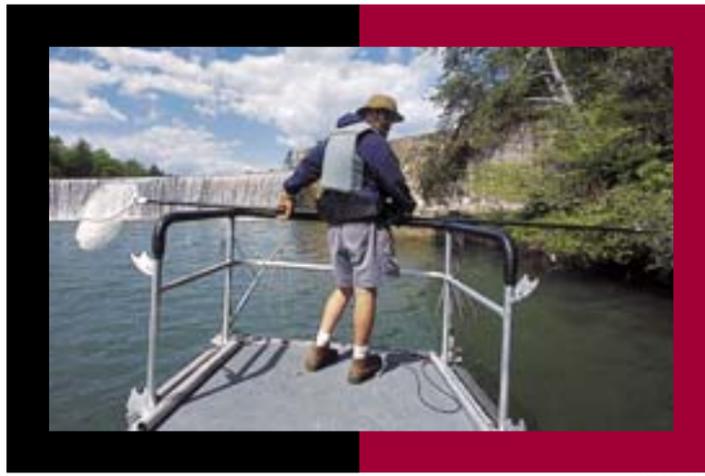
In 2000, Yow began a survey of the walleye population in Hiwassee. He found plenty of one-year and older fish but no young-of-the-year hatchlings. In 2001, there were two-year-old fish but no one-year-olds or young-of-the-year. In 2002, there were three-year-old fish but no two-year-olds, one-year-olds or young-of-the-year.

The connection between the introduction of herring into Hiwassee and the failure of three straight years of walleye spawning was not lost on Yow. "In the Tennessee Valley, most places where river herring showed up, state agencies had to start stocking walleye, because they found there were reproduction problems in their walleye population," he said. "We're growing walleye at Table Rock [hatchery] to make at least an attempt over the next three years to restore the population of young fish."

Yow says that river herring — both bluebacks and their close relatives, alewives — may negatively impact walleye in three different ways. First, they may compete with walleye fry and fingerlings for food, particularly zooplankton. Second, they feed on fish eggs, possibly including walleye, and they feed on extremely small fish, including walleye fry. Third, alewives produce an enzyme, thiaminase, that breaks down thiamine, a vitaminlike substance. Biologists theorize that when female adult walleyes eat alewives, the thiaminase they digest may break down thiamine in their

their numbers somewhat, but if you sampled today, you'd probably find less than 1 percent smallmouths, and a large percentage of those would have some genetic material from spots. The rest of the portion of the fishery that used to be smallmouth is now spotted bass."

A few miles down the road, Yow has been dealing with a decline in the walleye



Fisheries biologist Kevin Hining monitors a recently introduced river herring population in Lake Hickory. Biologists fear that if these river herring are moved upstream into Lake James, the walleye fishery in Lake James will decline.

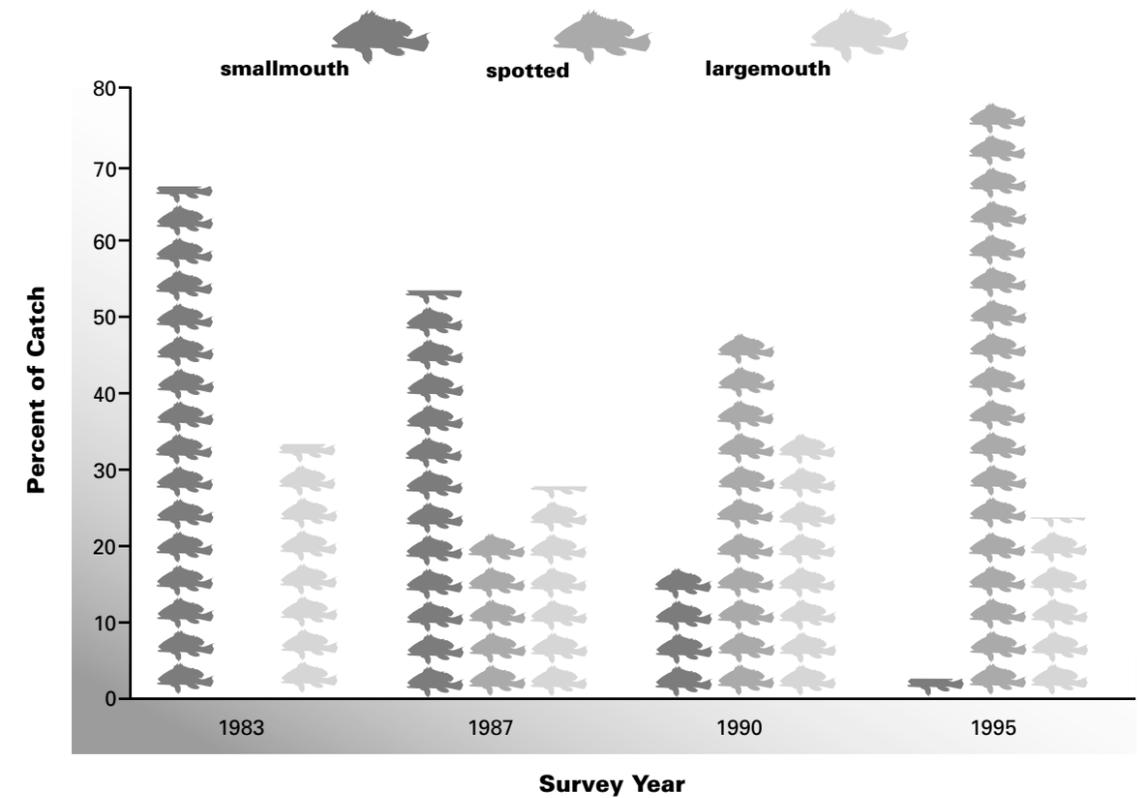
JODY DUGGINS

... sometimes, when a species is introduced into a lake where it doesn't belong, it leaves the home waters forever altered.

## FISH INTRODUCTIONS IN TWO RESERVOIRS

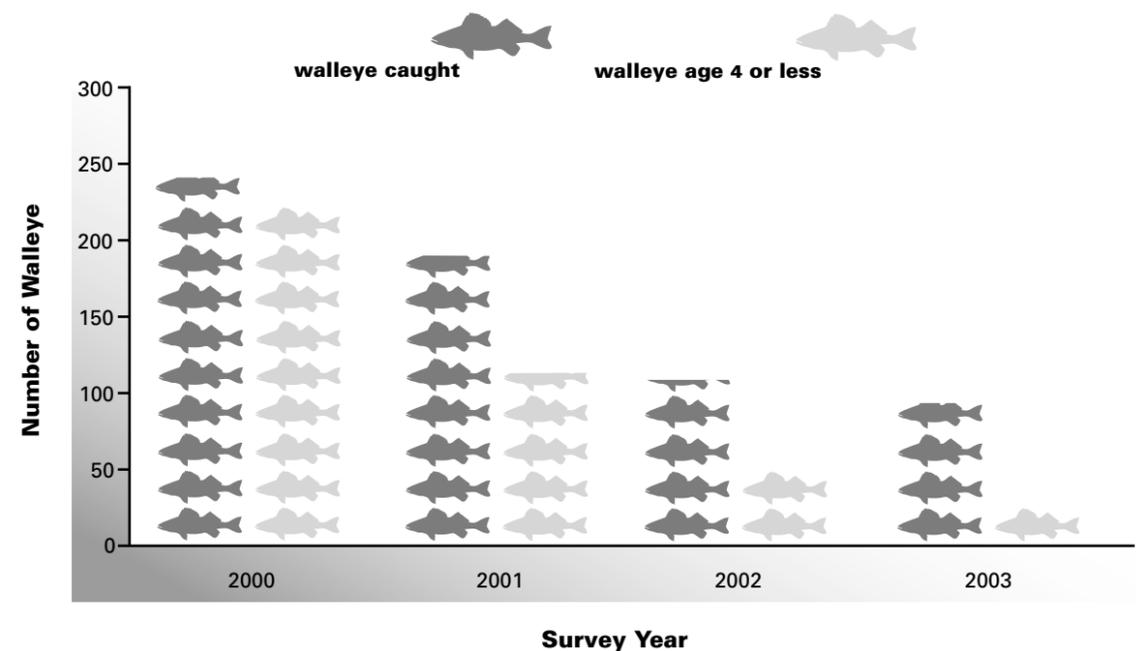
The percentage of smallmouth, spotted and largemouth bass caught at Lake Chatuge in Clay County changed drastically when spotted bass entered the lake in the 1980s.

Source: Reggie Weaver, Georgia Department of Natural Resources



At Hiwassee Lake in Cherokee County, the walleye catch is less than half what it was before blueback herring appeared in 1999. The herring feed on walleye fry.

Source: Powell Wheeler, N.C. Wildlife Resources Commission



own reproductive systems, causing problems with egg formation and viability.

What do spotted bass and river herring have to do with situations biologists are currently worried about? Both species have been introduced into the Catawba River chain: spotted bass into Lake Norman, river herring into both Lake Norman and Lake Hickory. It's common knowledge that spotted bass were caught out of lakes in South Carolina and Alabama and brought to Lake Norman in the late 1990s by fishermen who hoped to jump-start the bass fishery in 32,500-acre Lake Norman, a relatively infertile reservoir. The spotted bass did succeed at Norman, but at what cost, biologists are wondering.

Eric Weir, a professional fisherman and guide from Belmont, caught a 6-pound, 5-ounce spotted bass from Lake Norman that broke the state record from Lake Chatuge. David Cooke of Mooresville and Alvin Shaw of State Road, both professional fishermen, said the spotted bass have revitalized Lake Norman's bass fishery. "Most of the largemouth here are long and skinny," said Shaw, who had caught spotted bass in tournaments across the Southeast before ever catching one in Lake Norman. "These fish are chunkier, with nice bellies. Spots weigh more than the largemouth the same length do."

Spotted bass tend to inhabit slightly deeper water than largemouths. They feed in more open water. They are more

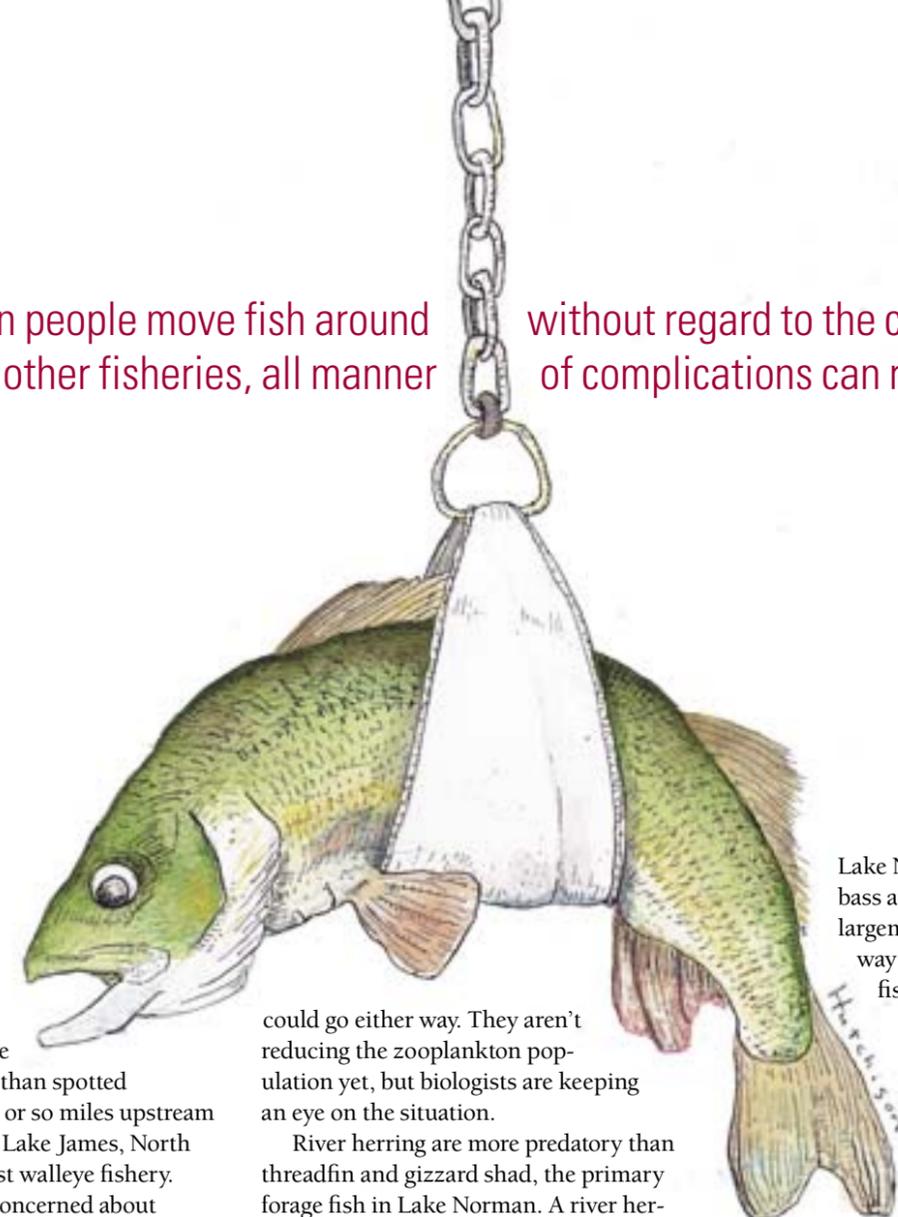
likely to be found in large pods or schools, and they generally top out at a much smaller size and weight than largemouths, at least in fertile, productive reservoirs. It's not difficult to tell spotted bass and largemouths apart. Spotted bass have markings on the white scales below their lateral lines that almost make them appear to have tiny spots. And they have a distinctive patch of teeth on their tongues. In North Carolina, the commission has stocked them in several smaller lakes, most notably W. Kerr Scott Reservoir in Wilkes County, where a 6-pound, 4-ounce spotted bass was caught this past March.

Scott Van Horn, a biologist who was the commission's Piedmont reservoir coordinator for many years, was working on Lake Norman 20 years ago when the question of stocking spotted bass was first raised. "Way back in the 1980s, the idea of putting in spotted bass was first offered," Van Horn said. "We had a biologist from Georgia, Dean Fowler...and we gave him the job, to do some research on spotted bass. His conclusion was that there are a handful of places where spotted bass do real well in reservoirs and become very popular with anglers, and other places, they don't get more than a foot long and displace the largemouth bass. They become a problem because of poor growth rates. We asked ourselves, 'Do we want to put another fish in Lake Norman, where we already have trouble growing largemouth bass?' And we decided that we didn't."

Was Van Horn wrong 20 years ago? The jury is still out on spotted bass and Lake Norman, because, as Van Horn said, it takes more than a couple of years of exceptional fishing to bring a fishery to the level of a long-term success. "An awful lot of times, when we run into a new species, they'll go through a period where they do awfully well," he said. "Then, they begin to over-use the resources, and they settle back into the place where they'll stay for the long haul. The question is, if the spotted bass stays like it is and is a benefit as a gamefish, then we've got a long-term benefit for the Lake Norman fishery. But if not, how will the fishery restabilize? Is Lake Norman experiencing renewal because of a first-time blush for the spotted bass, and will it sustain it over time?"

Biologists started finding river herring in Lake Norman around 2000, and there was little doubt how they got there. In fact, one club that was organized to promote striped bass fishing trumpeted its purchase and release of more than 1,000 foot-long blueback herring into Lake Norman this past March. From Lake Norman, herring were moved to Lake Hickory, some by striper fishermen who were merely cleaning out their bait tanks after fishing trips. This past spring, the commission erected signs at boating-access areas warning fishermen not to move herring or other baitfish from one lake to another.

"When people move fish around without regard to the consequences of complications can result."



Kin Hodges, a commission fisheries biologist, helps manage both Lake Norman and Lake Hickory. His concern is focused more on the movement of herring than spotted bass, because only 20 or so miles upstream from Lake Hickory is Lake James, North Carolina's easternmost walleye fishery.

"We're definitely concerned about the river herring," Hodges said, "and not just because of the potential disaster that could occur if herring ever got into Lake James, but because of the effect of competition between juvenile bass and herring for the zooplankton that is the base of the food chain. Georgia has documented a decline in the largemouth bass populations in foothills reservoirs—Lake Burton, for example—that occurred concurrently with the introduction of blueback herring. The past two or three years, at Lake Norman, we've documented a slight decline in the abundance of largemouth bass. Everybody seems to be excited about having bigger fish, but there are fewer of them now."

Bluebacks have been shown to have a detrimental effect on bass fisheries. If they are in an extremely productive Piedmont reservoir, they may not make a difference. But in a clear mountain lake, they tend to be more of a problem. With Norman, they

could go either way. They aren't reducing the zooplankton population yet, but biologists are keeping an eye on the situation.

River herring are more predatory than threadfin and gizzard shad, the primary forage fish in Lake Norman. A river herring will feed on larger zooplankton—the big, individual zooplankton that juvenile crappie, largemouth bass and stripers feed on—and it will feed on fish larvae and eggs.

Hodges doesn't believe that spotted bass pose a great threat to the largemouth population at Lake Norman. The commission has managed W. Kerr Scott for largemouth and spotted bass for years, and the ratio between the two fish has stayed consistent, even as spotted bass have appeared to thrive in recent years. But he's worried that the spots will have an adverse effect somewhere along the food chain. "In a system or lake with a limited amount of productivity, every additional predator in there puts a dent in something else," he said. "Will that be the largemouth bass, the stripers, the crappie or the catfish?"

Yow believes that spotted bass may be exploiting the introduced river herring at

Lake Norman. He thinks spotted bass are less likely to affect the largemouth fishery negatively the way they did the smallmouth fishery at Lake Chatuge.

"Spotted bass do well in lakes with river herring; they definitely exploit the available prey," he said. "Spots seem to coexist with largemouth better than they do with small-

mouth bass. They live in largely divergent habitat. River herring tend to orient themselves to the thermocline. Largemouth bass overlap with river herring for only part of the year.

"Spotted bass have a greater amount of spatial overlap with river herring, as far as depth and water temperature. There are more days of the year when spotted bass and river herring are in the same places."

But if fishermen continue to move herring up the Catawba and they end up in Lake James, will the loss of a walleye fishery be worth the "gains" that a small group of fishermen have experienced with other species?

That's a roulette wheel biologists aren't willing to spin. ♦

Dan Kibler is an outdoor writer for the Winston-Salem Journal.

Introduction of spotted bass (left) in Lake Chatuge in the mid-1980s resulted in the virtual disappearance of the reservoir's smallmouth bass (right) within a decade.

