

Mississippi's Wadeable Streams Ignored Too Long

By Andrea Cooper

Mississippi streams do not offer the fly-fishing opportunities found in the West, but the state's wadeable streams provide good sport fishing of spotted and largemouth bass, longear sunfish and bluegill sunfish.

These streams are not the sport fishermen magnets that streams are in the highland region of the United States, so many wadeable streams in Mississippi and the Southeast are often ignored and unmanaged.

"Wadeable stream fisheries in the Southeastern U.S. typically do not receive the same amount of research and management as other regions of the U.S.," Brian Alford said.

Alford is an employee of Mississippi's Department of Environmental Quality and a doctoral candidate in Mississippi State University's College of Forest Resources. He has been conducting research on the environmental characteristics at watershed scale and along stream banks to understand how they influence recreational angling for sport fishes in Mississippi's wadeable streams.

"Wadeable streams are typically described as those shallow enough to sample without boats," Alford said.

Alford's study was part of the National Wadeable Streams Assessment conducted by the Environmental Protection Agency in 2004-2005 to assess the general health of wadeable streams in the nation. The Mississippi results can be compared with results from similar studies around the country.

He found that wadeable streams are being ignored.

"Forty-two percent of the wadeable stream length in the nation is in poor condition," Alford said.

These types of streams are a critical natural resource. They were chosen because sampling methods are well established, and they are often under-sampled during traditional monitoring.

Alford conducted his study during 2003-2005 in 13 test reaches, or segments of a stream, and 11 independent reaches. He collected environmental data such as abundance of woody structure within stream channels, canopy cover, stream bank features, water characteristics, watershed land use, land cover and organisms living on the stream bottom.

Organisms living in these streams include aquatic insect larva, crustaceans, worms and snails. Some of these organisms are more sensitive to pollution than others, so information on these organisms can be used to determine if a stream is healthy.

Fish were caught using ultralight fishing gear with chartreuse "beetlespin" lures.

"I basically got to spend my summers fishing," Alford said. "We didn't change lures because we had to keep the sampling technique as standardized as possible so that variations in catch could be explained by other factors, not by the bait."



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BRIAN ALFORD



Angler Brian Utley enjoys fishing a wadeable stream in Oktibbeha County.

Spotted bass were most associated with increased water flow, total nitrogen and the percent of gravel substrate. Largemouth bass, longear sunfish and bluegill sunfish were more closely associated with backwater pools, fine substrates and percent of watershed with pastures.

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This increase in both size and number of fishes is because watershed and riparian zones in the coastal region are covered by proportionately more forest.

"Forested riparian buffers are essential to maintain meandering channels and residual pools and mediate excessive nutrient runoff from the surrounding landscape," Alford said.

Curving, forested banks minimize deposition of sediments, filter nutrients and deposit wood in the channel to form pools and backwater areas.

"This study brought together and confirmed ecological perspectives that we have about stream management," said Don Jackson, fisheries biologist and professor in MSU's Department of Wildlife and Fisheries. "For instance, this study supports the recommendation of leaving streamside management zones, primarily composed of hardwoods, to protect waterways."

Most of the energy in aquatic systems comes from outside the water itself. When there are hardwoods along the banks of streams, their leaf litter provides organic material, and woody debris serves as cover for fish, Jackson said.

Jackson will be teaching these and other basic principles of aquatic ecology in his split-level pond and stream management class this fall.

"It's important that we have studies like this to use as teaching tools. Textbooks have their uses, but with experiments like this one, I can say, 'Look, here it is in real life, in the real world. It really works.'"

Jackson explained that part of the mission of the College of Forest Resources is to ensure that people have good relationships with natural resources. Increased interest in wadeable streams in Mississippi can lead to more protection and management of them. Many U.S. waterways have been ruined by channelization, alteration, abuse and neglect.

"If we don't take care of our water resources, we stand to lose some of the most enjoyable and the most essential aspects of our natural resources," Jackson said.

Bubba Hubbard, an avid stream fisherman and employee of the Mississippi Department of Wildlife, Fisheries and Parks, said fishing wadeable streams is not for the angler whose goal is to fill a stringer.

"The appeal of wadeable streams is the isolation, the chance to really connect with nature," Hubbard said. "When you're out there in these streams, you're reading the stream to find the fish. There are no depth finders, no gadgets, just you and the flowing water."