

THE STAR

1789-2018

DEMOCRAT

News

Price: Not enough small preyfish for striped bass

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Published: Monday, March 9, 2009 6:51 AM CDT

Editor's Note: This is the first of two stories concerning Jim Price's study on the relationship between striped bass and Atlantic menhaden in the Chesapeake Bay.

OXFORD After five years of examining striped bass' food consumption, Oxford resident Jim Price believes his research decisively demonstrates that the dwindling numbers of preyfish in the Chesapeake Bay can no longer adequately support the large striped bass population.

Starting in 2004, Price and other volunteers examined the stomachs of more than 5,000 striped bass (also referred to as rockfish) caught by recreational anglers in Maryland, Virginia and North Carolina as well as by commercial fishermen in Maryland.

Price believes his data shows that with the menhaden reduction industry still allowed to remove up to 240 million pounds of menhaden from the Bay annually, and with the minimum size for striped bass upped to 18 inches following a moratorium on the fishery, there aren't enough small preyfish in the Bay.

With some funding provided by the U.S. Fish and Wildlife Service, the Maryland Department of Natural Resources, East Carolina University and the Chesapeake Bay Ecological Foundation (which Price runs), he examined the stomachs of striped bass year-round at Harrison's Sportfishing Center in Tilghman since he started the project, and his wife Henrietta recorded what fish were consumed at what time of the year. Ellsworth Haddaway cleaned fish for sport fishermen and saved the carcasses for Price, then Jerry Tyler took over after Haddaway suffered a stroke. Gillnet fishermen also helped Price out, and he spent a good amount of time catching his own fish as well.

Price found that smaller striped bass (from 6 to 16 inches) tend to feed on Bay anchovy, mid-size striped bass tend to feed on menhaden in between 3.5 and 9 inches, and large striped bass (larger than 24 inches) tend to feed on menhaden 10 inches in length or greater. Migratory striped bass in the mid-Atlantic of more than 28 inches like to feed on menhaden that are 12 inches in size or greater.

When striped bass of 16 to 24 inches inhabit mid-Bay waters from late spring through early fall, however, they have little prey to feed upon, according to Price's study. Price and his collaborators believe this is due to ecological depletion of anchovy and young menhaden in the Bay. Young menhaden typically live in tributary nursery areas until they're large enough to migrate along the coast, but biologists agree that their numbers have fallen in recent years. Older menhaden still seem to find their way into the Bay.

"The Chesapeake Bay forage base for striped bass 6 inches to 24 inches has collapsed due to poor recruitment of Bay anchovy and menhaden since the mid-1990s in conjunction with increasing predation by high populations of striped bass, continued over-harvest by the menhaden purse seine reduction fishery (large scale harvest of fish for processing into products such as fish oil and meal) and a management policy that has resulted in the ecological depletion of Atlantic menhaden," Price wrote in a position paper.

"During years of low menhaden recruitment in the upper Bay the average weight of striped bass approximately 18 inches in length caught in the Choptank River during the fall can be less than 70 percent of their historical weight. The striped bass recovery following initiation of the moratorium is now threatened by the ensuing imbalance between prey and predator populations." Recruitment refers to the number of fish added to the stock in a given year.

Price also found that striped bass larger than 24 inches were healthier than smaller fish. He found larger menhaden in their stomachs year-round, even at times when smaller menhaden weren't found. He believes the lesions that begin showing up a few years ago on stripers are related to malnutrition.

"Sampling detected that a portion of the striped bass population, which historically migrated from summer habitat in New England waters to winter feeding grounds off Virginia and North Carolina, has migrated into the upper Bay each fall since 2006 and remained through the spring spawning season a previously undocumented event," Price wrote.

Price said this indicates menhaden are less available on their historical feeding grounds within coastal waters, although larger menhaden can still be found in parts of the Bay and off-shore. This year's annual tagging survey by the U.S. Fish and Wildlife Service located a record low number of striped bass in Atlantic coastal waters, which Price believes reflects their necessity to travel farther out to find preyfish.

DNR biologist Jim Uphoff said he's entering Price's study into a database so that it can be analyzed further.



Jim Price and Jerry Tyler examining a large female striped bass at Harrison's facility in Tilghman 8

"It's very much along the lines of some concerns I have from doing other analyses," Uphoff said of the "trophic bottleneck." "If the food supply isn't abundant, then you start to see problems," including the larger striped bass going after prey that smaller striped bass would normally feed upon.

"It's something that certainly makes sense and something that should be of concern to management," Uphoff said, though he said it may not be an overriding factor in management decisions.

Whereas the food chain has become fundamental to management of contained freshwater bodies, that's not yet the case for the larger saltwater bodies, Uphoff said.

"We're at least in the stage where it's in our consciousness and we're starting to do it," he said. "There is no ecosystem-based management book for dummies out there."

When a five-year moratorium helped restore the striped bass population in the 80s, the assumption was there would be enough food to handle the population, Uphoff said. Recent modeling has shown increased demand for forage, and menhaden in particular.

Next: The menhaden debate

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