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Contact: Shelley Dawicki
508-495-2378
Shelley.Dawicki@noaa.gov

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NOAA and Fishermen Cooperate on Research into Monkfish Migration
$500 Reward Offered for Returning Whole Tagged Fish

Researchers are working with commercial fishermen to put electronic tags on hundreds of monkfish (*Lophius americanus*) in the waters of southern New England and the Gulf of Maine to track where the commercially important fish goes during its lifetime, and to answer other questions about its biology.

"Although monkfish is the highest valued finfish in the northeast U.S., aspects of the fish's basic biology and behavior are poorly understood, such as their migration patterns, what depths they live in and how they use habitat," said Anne Richards, one of the study's lead investigators and a monkfish expert at NOAA's Northeast Fisheries Science Center (NEFSC) laboratory in Woods Hole, Mass.

Information from the tagged fish could also help determine whether there is one monkfish population throughout the northwestern Atlantic Ocean or distinct northern and southern stocks, she said. "This is a critical question that has proven very difficult to answer. It's important not only for understanding the population's biology, but also important for managing the fisheries that harvest monkfish."

Richards, NEFSC colleague Larry Alade, and researchers at the Gulf of Maine Research Institute (GMRI) and the University of Massachusetts – Dartmouth began the tagging project last year. Two commercial gillnet boats, the *F/V C.W. Griswold* with Captain Tim Caldwell from Scituate, Mass. and the *F/V Gertrude H* with Captain Ted Platz from Newport, R.I., are collaborating to capture monkfish for the study.

"This study is going to give us a much better understanding about monkfish migration patterns, and that's a great thing," said Caldwell, who said the new archival tag will provide much more data than the previous tags he has worked with. "Just getting a few tagged fish returned will give us a huge amount of information."

"As members of the monkfish advisory panel, Tim and I see firsthand the difficulty associated with managing a data-poor stock like monkfish," said Platz. "This tagging study is a perfect example of the value of cooperative research as a means for obtaining species specific information to aid the fisheries management process. Ultimately, fisheries management can only be as good as the science upon which it is based."

"The longer the tagged fish remain at sea the more data will be collected, so we hope tagged fish will be returned to us over the next several years," Richards said. "We need the whole fish with its tags, and details about where and when it was caught, in order to get the most information we can from each fish." The reward is $500 if these conditions are met.

Working with Crista Bank of New Bedford, Mass., a graduate student at the University of Massachusetts-Dartmouth's School for Marine Science and Technology, the team has already tagged 150 monkfish and hopes to have the rest of the 190 available archival tags on fish in the near future.

The electronic tags, about the diameter of a AAA battery but half as long, are surgically implanted under the skin and record water temperature, depth and time every 10 minutes. The tags can record data for four to five years, and will work in water depths up to 2,000 meters (about 6,500 feet). A pair of conventional plastic t-bar tags, like those used to attach the price tags on clothing, are also attached externally around the monkfish's tail and carry instructions on how to report a tagged monkfish.

"We try to minimize the time the fish is on deck, so the tagging process only takes about five minutes," said Larry Alade, a fisheries biologist at NEFSC. "We tag fish that are about 16 to 20 inches long, or roughly four to five years old and most likely mature. On our last trip we tagged 54 monkfish, some of which were up to 28 inches long. "

Data recovered from the tags can help researchers learn more about how migration patterns differ between males and females and with maturity state, where monkfish spawn, and how ocean currents and tides affect monkfish activity. The study will improve understanding of the age and growth of monkfish and the validity of methods used to estimate a monkfish's age.

Monkfish, also known as goosefish, was not a target of commercial fisheries until the late 1980s, but since the mid-1990s has been the highest valued finish in the northeastern U.S., surpassing traditional groundfish species like cod, haddock and flounders.

The scientists plan to expand the study to include monkfish in the mid-Atlantic region down to Cape Hatteras, considered the southernmost extent of their distribution in the northwest Atlantic.

Funding is being provided by the NOAA-supported Northeast Consortium and by the commercial fishing industry through its research set aside program for monkfish.

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Related links:
Cooperative Monkfish Tagging Study:
http://www.nefsc.noaa.gov/read/popdy/monkfish/Survey2009/taggingstudy.htm
Status of the Goosefish/Monkfish Stock: http://www.nefsc.noaa.gov/sos/spsyn/og/goose/
Fisheries of the United States – 2008: http://www.st.nmfs.noaa.gov/st1/fus/fus08/index.html