

Understanding Sex-Specific Distribution Patterns of Summer Flounder Relative To Fishing Effort

By: Jason Morson

A recent stock assessment review of summer flounder (*Paralichthys dentatus*) identified the need to account for sex-specific fishing mortality. Sex-specific models can be data-intensive and require some knowledge or assumptions about the sex ratio of the stock and catch (both landings and discards). Some of the sex-specific information for summer flounder is collected annually by the National Marine Fisheries Service's (NMFS) trawl survey. Sex composition of the catch, however, is not monitored regularly. To determine whether the sex ratio collected on the NMFS survey could be applied to the catch, a team of scientists from Rutgers and Cornell Universities has been working to collect biological samples from the commercial and recreational fisheries.



Jason Morson (left) and Eleanor Bochenek (right) sampling summer flounder at a commercial fishing dock.

The results of an initial two-year effort to estimate the sex composition of the recreational and commercial summer flounder landings was published in a recent

issue of Marine and Coastal Fisheries¹. A key finding from the cooperative research demonstrated that the recreational fishery lands a disproportionate number of females at a given length, relative to what is observed on the NMFS trawl survey. The recreational fishery operates inshore during the summer, while the NMFS trawl survey is conducted offshore in the spring and fall. Therefore, the difference in sex-ratio between the recreational fishery and the NMFS survey could possibly be a result of sex-specific movement and habitat use. However, the data collected to date are insufficient to address this question.

This summer, the Munroe lab at Rutgers University, in cooperation with partners from Cornell University, will lead a new cooperative effort to better understand the sex-specific distribution of summer flounder across the full range of sizes. Scientists will accompany recreational fishing boats on trips from New Jersey to Rhode Island to survey sex and length of landed and discarded summer flounder. The information collected will be used to identify whether female fish spend more time inshore in the summer than males and will be immediately incorporated into a sex-specific stock assessment model already under development.

¹ Morson, J. M., E. A. Bochenek, E. N. Powell, E. C. Hasbrouck, J. E. Gius, C. F. Cotton, K. Gerbino, and T. Froehlich. 2015. Estimating the sex composition of the summer flounder catch using survey data. *Marine and Coastal Fisheries* 7: 393-408.

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