

## Collection of Sex-Ratio Data for Summer Flounder Landings: Commercial and Recreational - R/6010-0012

**Dr. Eric N. Powell**  
**Haskin Shellfish Laboratory**  
**Rutgers, The State University of New Jersey**  
**856-785-0074 x 4039**  
**eric@hsrl.rutgers.edu**

**Dr. Ken Able**  
**Rutgers Marine Field Station**  
**Rutgers, The State University of New Jersey**  
**609-296-5260**  
**able@marine.rutgers.edu**

### *Research Summary*

Summer flounder, *Paralichthys dentatus*, is an important commercial and recreational fishery along the northeast coast of the United States from North Carolina to Massachusetts. Highly sought after by consumers of seafood, it accounts for a substantial fraction of angling trips by Mid-Atlantic Bight anglers. Summer flounder was seriously overfished in the late 1980s to early 1990s and, as a result, a stock rebuilding program was implemented. In 2004, the spawning stock biomass returned to historically high levels and the most recent benchmark assessment in 2008 determined that the stock was found to be in a non-overfished state. However, while the stock is thought to be on a rebuilding trajectory, final rebuilding goals have not yet been met and the 2008 benchmark assessment identified a number of continuing limitations in data resources and biological information available for the summer flounder assessment. One of the primary



**Removing otoliths through the gills. Once a fish has been measured and sexed, scales and, for fish larger than 60cm, otoliths, are removed for subsequent aging.**



**Identifying the sex of a summer flounder by examining the gonad on an already filleted fish. The exposed orange ovary in the photo identifies the fish as female.**

research needs identified was obtaining sex-at-age data from recreational and commercial landings. Sex-specific differences in the population dynamics of summer flounder, such as natural mortality and growth rate, require that a sex-structured model be employed in an assessment. Sex-specific data needed to run such a model are available for the federal survey, however, no sex data are collected on recreational and commercial landings.

This research project will test a survey design to obtain information on sex-at-length keys for commercial and recreational landings in New Jersey; evaluate the adequacy of survey sex-length keys for application to landings through the comparison of state and federal survey data with directly-obtained data on sex-at-length for commercial and recreational landings; and evaluate the effectiveness of minimally-invasive alternatives to obtaining sex-ratio data in comparison to the standard method requiring dissection.