

Background

Summer flounder (Paralichthys dentatus) are a commercially and recreationally important flatfish. Data collected from the commercial and recreational landings and discards provide crucial information that helps inform management on the status of the fishery. However, little is known about the recreationally discarded flounder in the Mid-Atlantic. This project aims to better understand the population of summer flounder in New Jersey by examining the age composition of the recreational catch.



Research Questions

- 1. Are male and female summer flounder reaching the minimum landing size (MLS) at the same age in New Jersey?
- 2. Is there a regional difference in length-at-age?
- 3. Does the mean age of fish change throughout the fishing season?

Field Sampling



- Landed and discarded fish were sampled on for-hire fishing vessels from NJ ports from June-September 2016.
- Sex and length measurements were collected for the entire catch.
- Scales were collected from the anterior caudal peduncle of all discarded fish. Sex- and region-specific age-length keys developed by Morson et al. (2015) were used to age landed fish.

Age Composition of Male and Female Summer Flounder in New Jersey's Recreational Fishery

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Lab and Statistical Analyses

- Eight scales were cleaned and pressed per discarded fish.
- Scales were aged under a microfiche by identifying and counting annuli.
- A blind re-aging test with NEFSC resulted in 87 percent agreement with a mean absolute error of 0.13.
- Multinomial loglinear models were used to evaluate differences in growth by sex and location.
- Von bertalanffy growth models were fit to length-at-age data by sex.

Results

MODEL	AIC	DELTA AIC
Length, Sex, Port	1930	Ο
Length, Sex	2020	90
Length	2189	259

Table 1. Akaike's information criterion (AIC) for three potential multinomial loglinear models describing the probability that a summer flounder was a given age based on length, sex, and port where the fish was captured. Delta AIC represents the difference between the best performing model and the specified model.



Figure 1. Length-at-age of male (M) and female (F) summer flounder in the New Jersey recreational fishery in 2016. The horizontal line at approximately 46cm represents the minimum landing size (MLS) in 2016.





Figure 2. Mean age and 95% confidence intervals for summer flounder collected from the recreational fishery in New Jersey in June, July, and August 2016.

Conclusions

- years earlier than males.
- relative to June and August.

References

Morson, J., Munroe, D., Harner, R., Marshall, R. 2017. Evaluating the potential for a sexbalanced harvest approach in the recreational Summer Flounder (Paralichthys dentatus) fishery. In Press: North American Journal of Fisheries Management.

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1. Females grew faster than males. Since females were larger at a given age, they reached the MLS about 4

2. Growth also varied by region. Male and female summer flounder caught near Atlantic Highlands grew faster than those caught near Cape May.

3. In July there were more older fish in the catch

