Fluke sexual dimorphism in Rhode Island state waters

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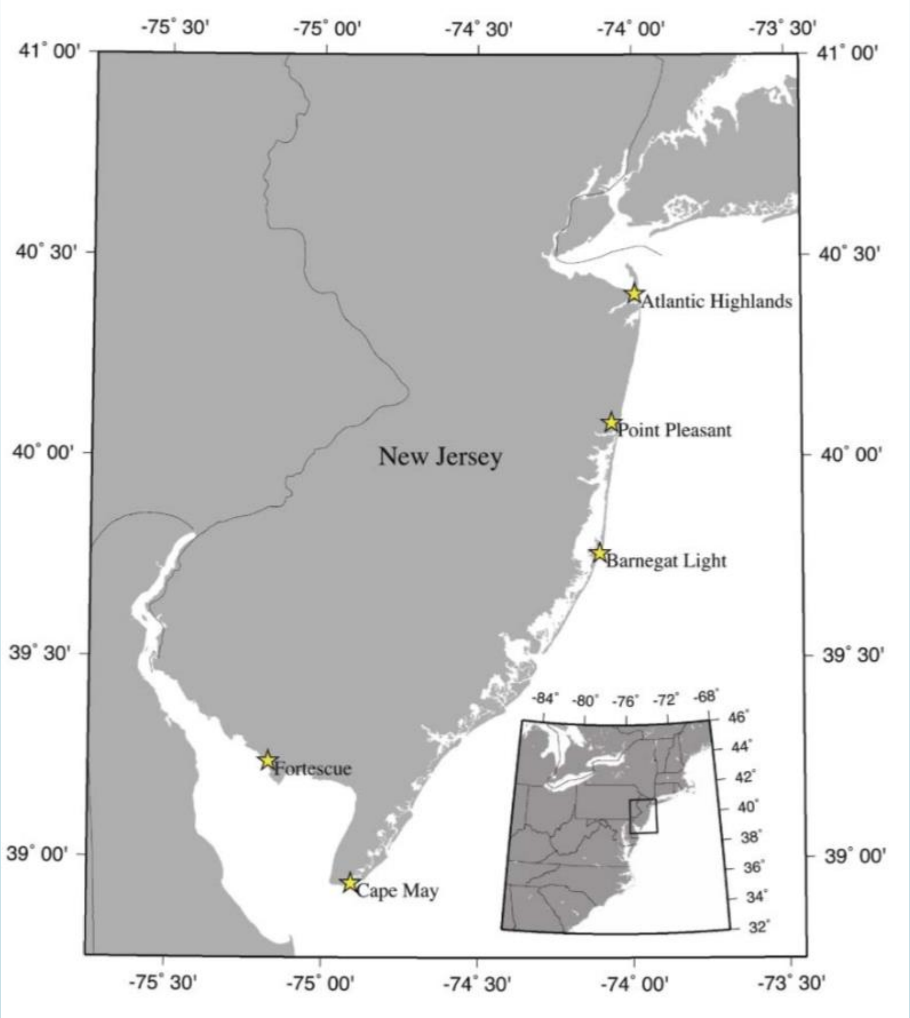
Undergraduate Involvement

- 2016 SURFO Project
- No external funding
- Sampling opportunities from existing URIGSO and RIDEM surveys
  - RIMFI collaboration
- Idea from fishery-dependent research in NJ

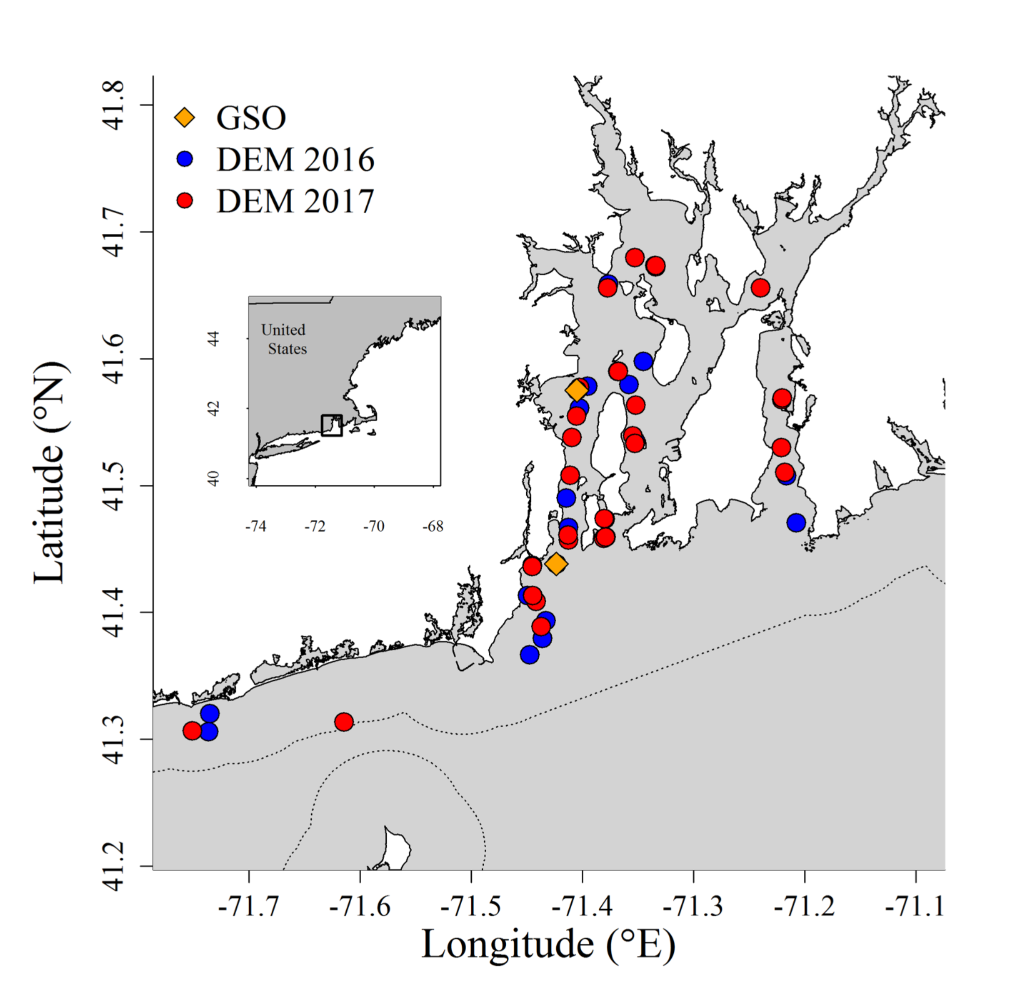
Morson et al. 2012, 2015

- Sampling of summer flounder landings in NJ exhibited differing sex ratios in each port
- Appeared to be differences with depth
- Spatiotemporal sex-segregation?
- Seasonal differences?
- Sex-specific migration timing?

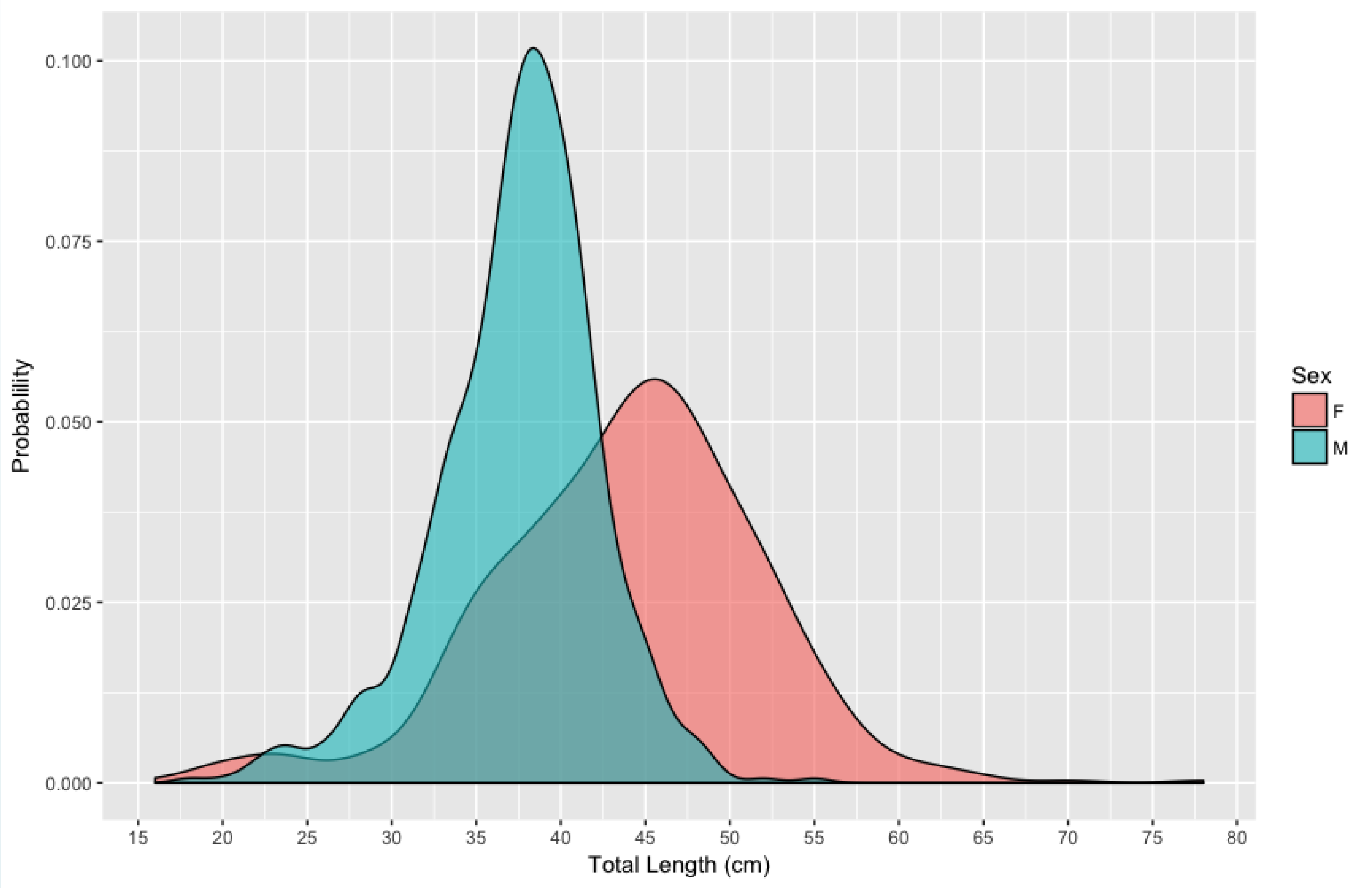


URIGSO & RIDEM Trawl Surveys: 2016-2017

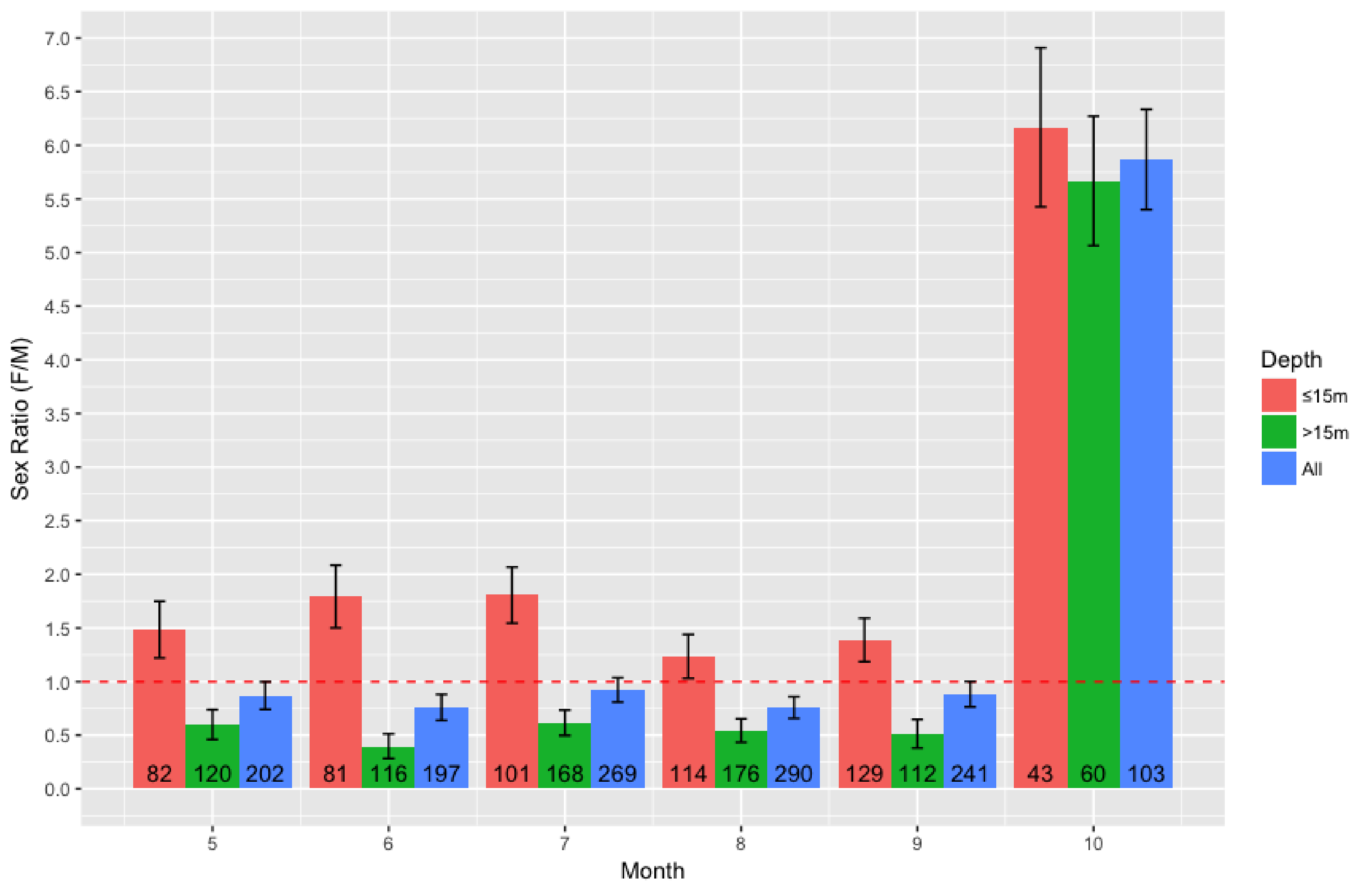
- 1328 summer flounder sampled
- May-October each year
- Recorded total length, depth, bottom temperature
- Analyzed patterns in the size frequency and sex ratio



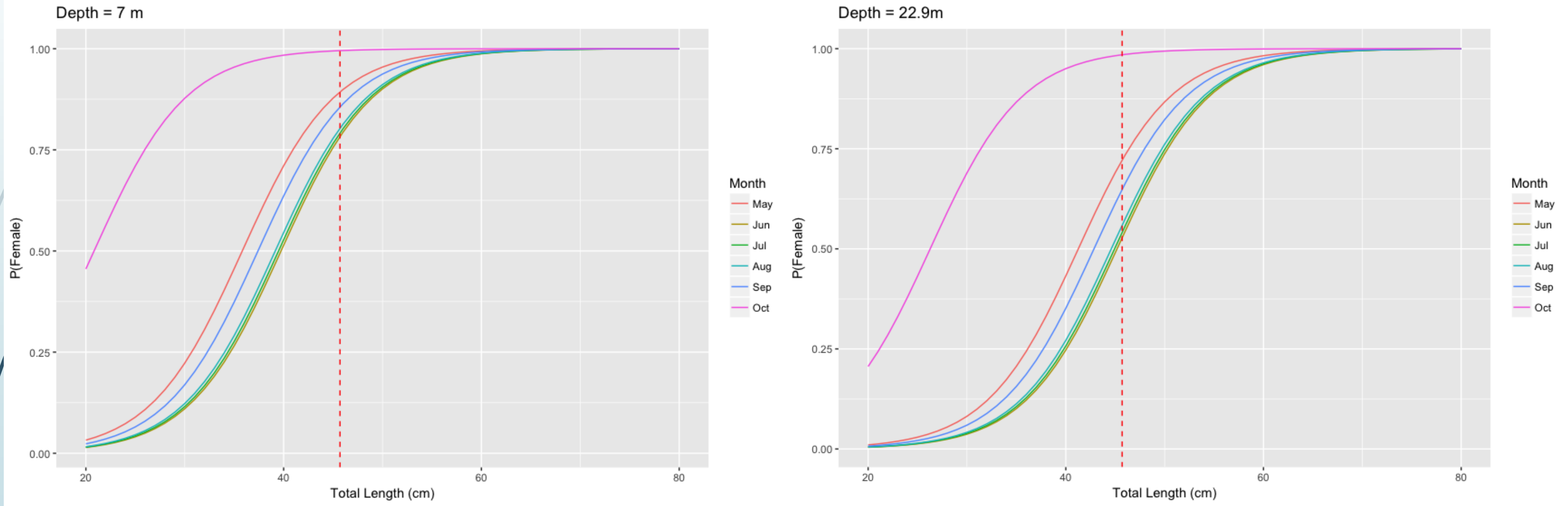
Dimorphism in Growth



Sex-Specific Habitat Preferences



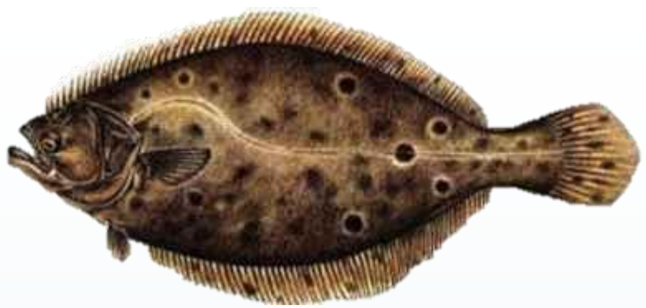
Logistic Model: Predict Sex



Conclusions

- Females prefer shallower habitats
  - Better explained by depth than temperature
  - Recreational fishery lands almost exclusively females
- Sex ratio varies by month
  - Males migrate in to the estuary later and leave sooner
- Sex composition in a given location can be predicted
  - Logistic model ~80% accurate
  - Results can be used to evaluate spatial management strategies

Project deliverables



Undergrad project (continued for an additional year) with no funding:

- Student supported by a NSF-REU program (SURFO)
  - Now in MS program at VIMS
- Oral presentation at the 15th Flatfish Biology Conference
- Presentation solicited for the 2018 Annual Meeting of the American Fisheries Society
- Working paper contributed to stock assessment in development
- Manuscript to be submitted for publication in Marine & Coastal Fisheries

Questions?