NOAA FISHERIES

SEFSC

Beaufort Lab

SEFSC Beaufort: Recent Research

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Outline

- Gray triggerfish tracking project
- Recreational fishing in the Southeast U.S. Atlantic

Gray triggerfish tracking project - MARFIN

Collaborators:

- Nate Bacheler, Kyle Shertzer, Rob Cheshire, Todd Kellison (NMFS Beaufort)
- Jeff Buckel, Paul Rudershausen, Brendan Runde (NC State Univ.)
- Jamie MacMahon (Naval Postgraduate School)
- Bill Pine (University of Florida)
- Théo Michelot (University of Sheffield, UK)

Importance

Project results and methods have implications for improving interpretation of fishery-independent survey results and abundance estimates for species of management interest

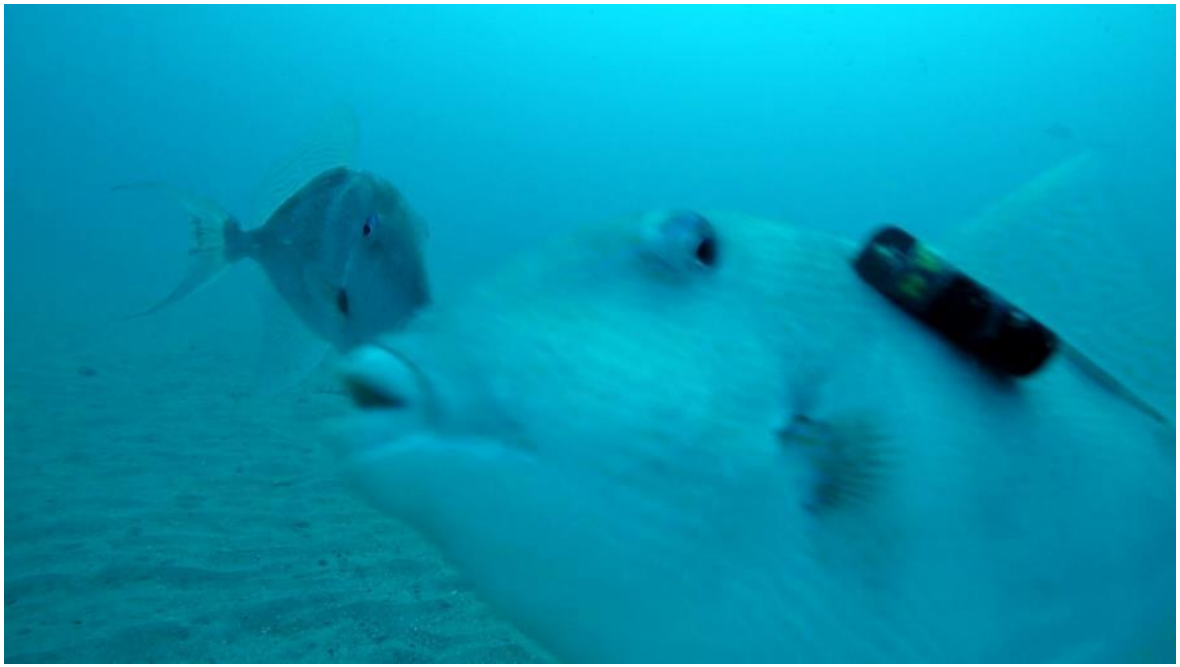
Specific goals

1. Track fine-scale movements of triggerfish around baited fish traps
   - Quantify reaction distances, effective fishing area, and time spent around traps
2. Estimate absolute abundance of triggerfish in 0.5 km^2 study area
3. Elucidate triggerfish movements over daily period, fish size, behavioral states
4. Are triggerfish affected by hurricanes?

Gray triggerfish tracking project

Methods

- Track fine-scale movements of triggerfish using Vemco Positioning System
- 30 fish tagged and 20 receivers deployed at NC site (37 m deep)
- September-October 2017
- > 100,000 precise spatial locations acquired during study



Gray triggerfish tracking project

Manuscripts to be published from this project:

1. Bacheler NM, Shertzer KW, Buckel JA, Rudershausen PJ, Runde BJ. **Behavior of gray triggerfish *Balistes capriscus* around baited fish traps determined from fine-scale acoustic tracking**. Marine Ecology Progress Series. In second review.

2. Shertzer KW, Bacheler NM, Pine WE III, Runde BJ, Buckel JA, Rudershausen PJ, Kellison GT. **Estimating population abundance at a site in the open ocean: Combining information from conventional and telemetry tags with application to gray triggerfish (*Balistes capriscus*)**. Canadian Journal of Fisheries and Aquatic Sciences. In review.

3. Bacheler NM, Michelot T, Cheshire R, Shertzer KW. **Fine-scale movement patterns and behavioral states of gray triggerfish *Balistes capriscus* determined from acoustic telemetry and hidden Markov models**. Fisheries Research. In review.

4. Bacheler NM, Shertzer KW, Cheshire R, MacMahon JH. **Tropical storms influence the movement behavior of a demersal oceanic fish species**. Scientific Reports. In review.

A similar tracking study is planned for the summer of 2019 using red snapper

Recreational fishing in the Southeast U.S. Atlantic

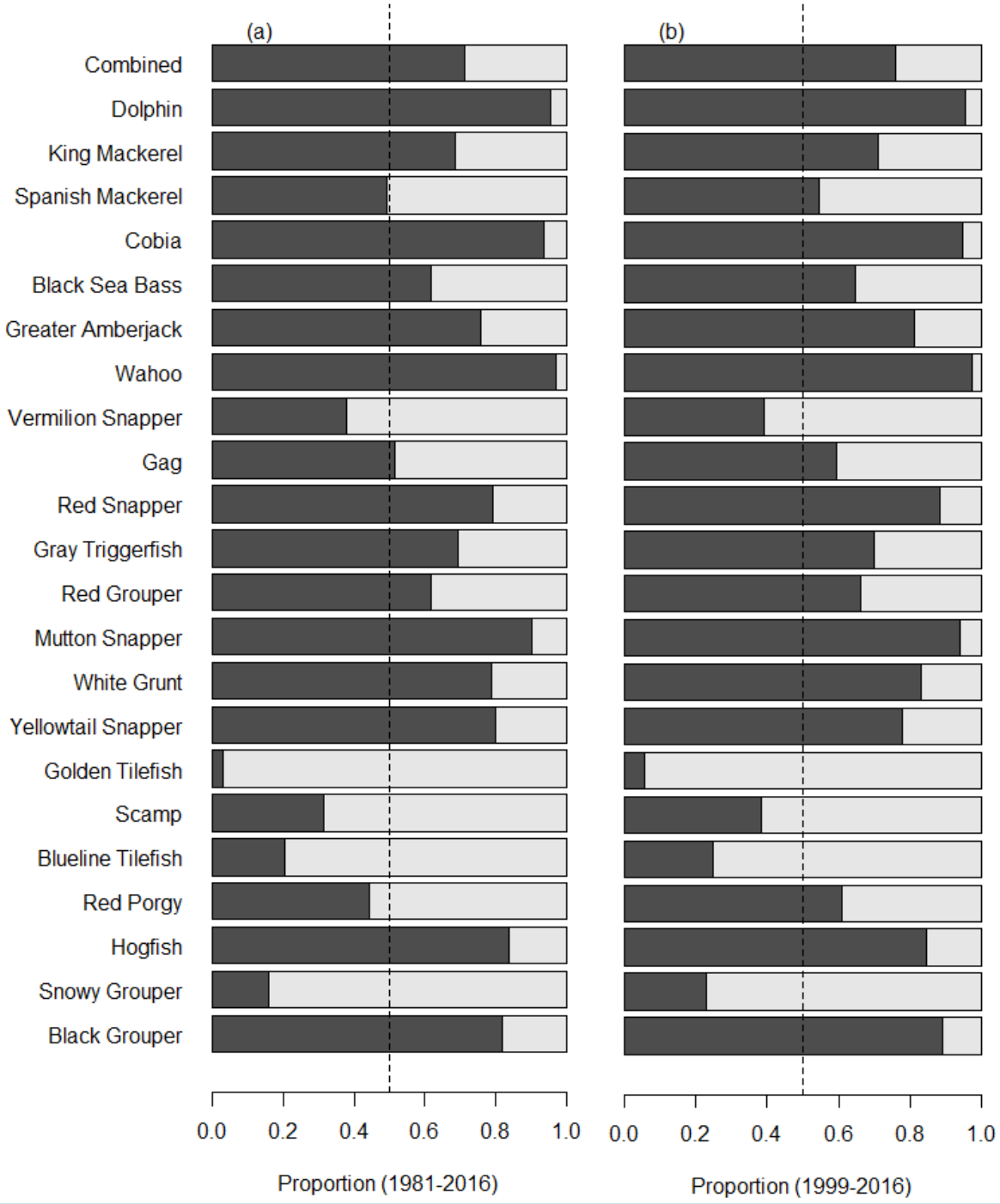
Project goals

- Examine recreational fishing in the SAFMC jurisdiction using the revised MRIP estimates for all stocks that are on the SEDAR schedule for assessment
  - Importance of recreational landings relative to commercial
  - Trends in recreational landings

Results

- Recreational sector is the dominant source of fishing mortality for most species and in general
- Generally increasing trends

Dark gray = proportion of total landings from the recreational sector



Proportion of total landings from the recreation sector