



Population Estimation of U.S. Atlantic Red Snapper: Preliminary Report - REVISED

Overview of the Project and Timeline for Integration

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Purpose

- Develop methods to estimate population size of age 2+ Red Snapper in the South Atlantic region.
- Ensure findings could be integrated into SEDAR 90 (Red Snapper) Stock Assessment.

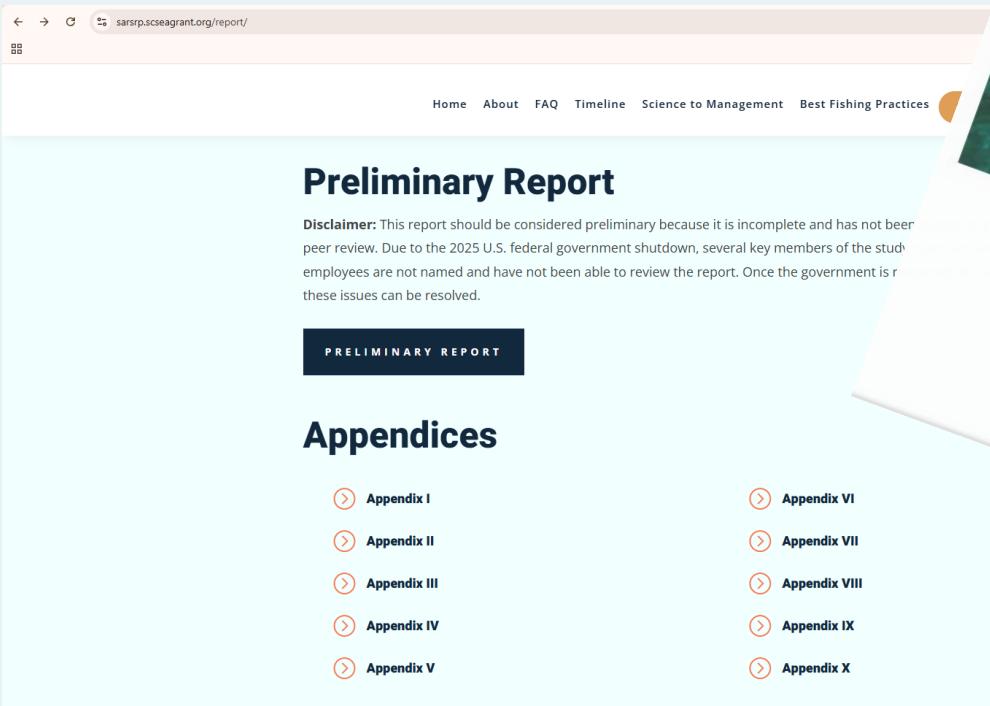


Credit: FWC

Preliminary Report

Contents

- Four Chapters
- Ten Appendices



A screenshot of a website for a preliminary report. The URL is sarsrp.sceagrant.org/report/. The page has a header with links for Home, About, FAQ, Timeline, Science to Management, and Best Fishing Practices. Below the header is a section titled "Preliminary Report" with a "Disclaimer" and a "PRELIMINARY REPORT" button. At the bottom is a section titled "Appendices" with a list of ten appendices, each preceded by a circular arrow icon.

- Appendix I
- Appendix II
- Appendix III
- Appendix IV
- Appendix V
- Appendix VI
- Appendix VII
- Appendix VIII
- Appendix IX
- Appendix X



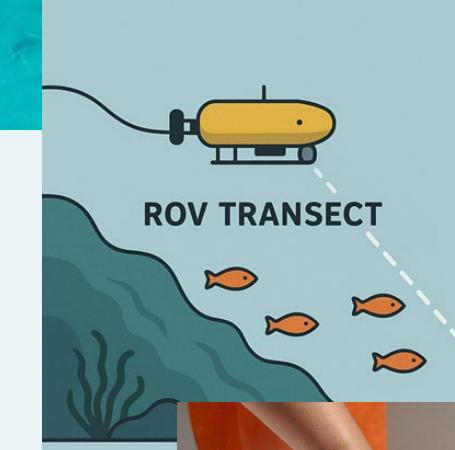
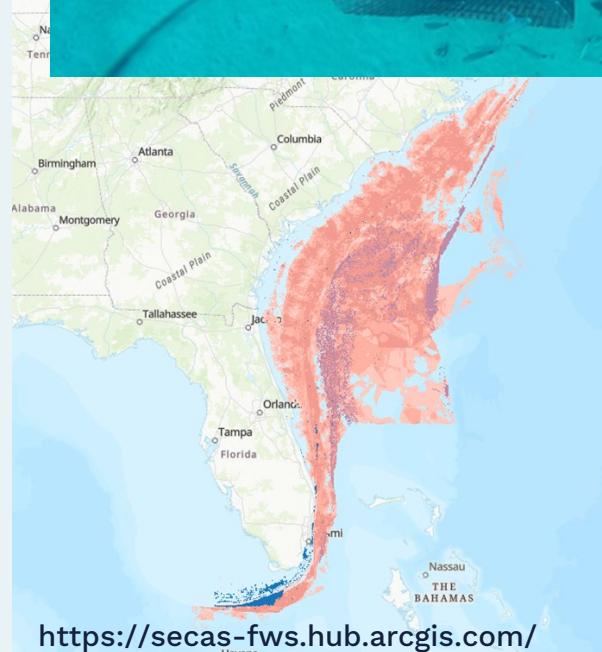
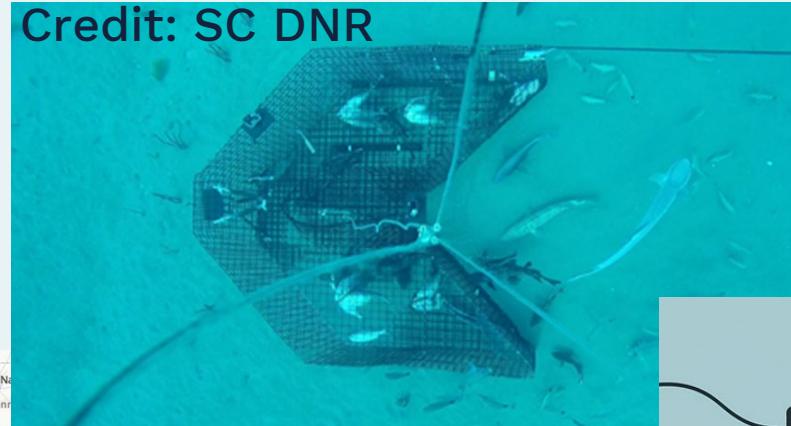
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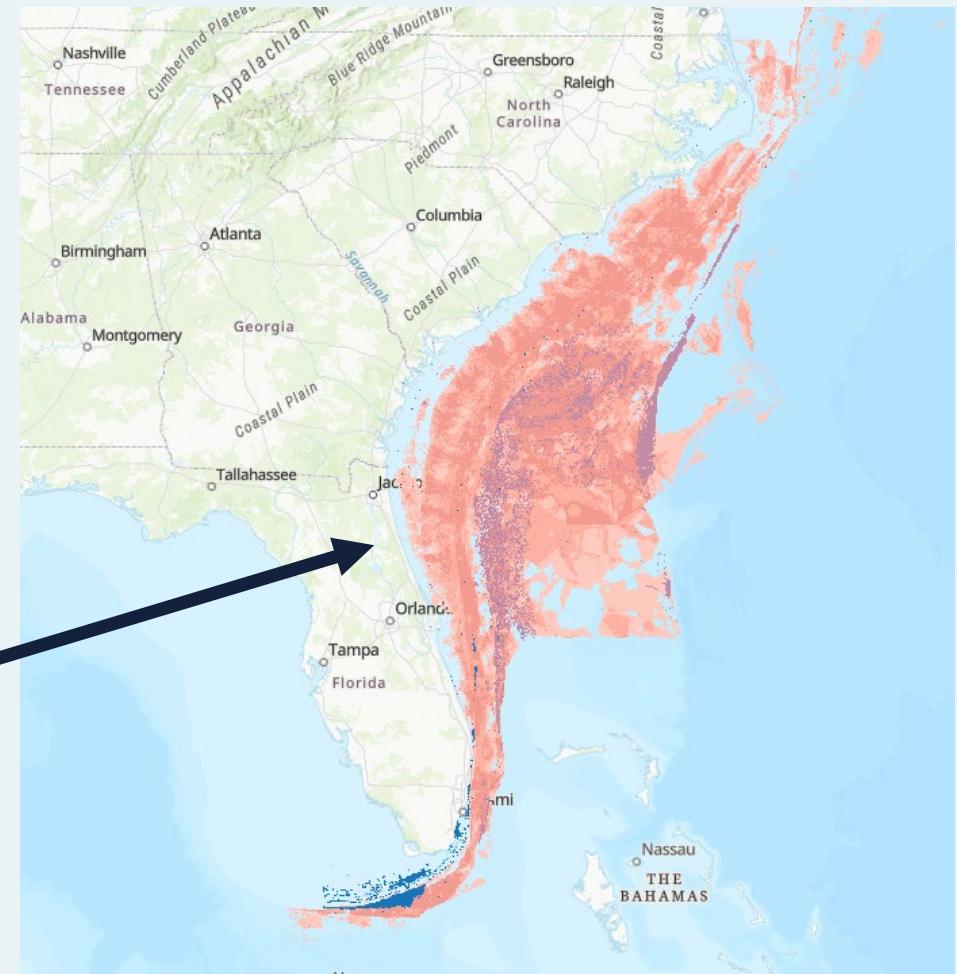
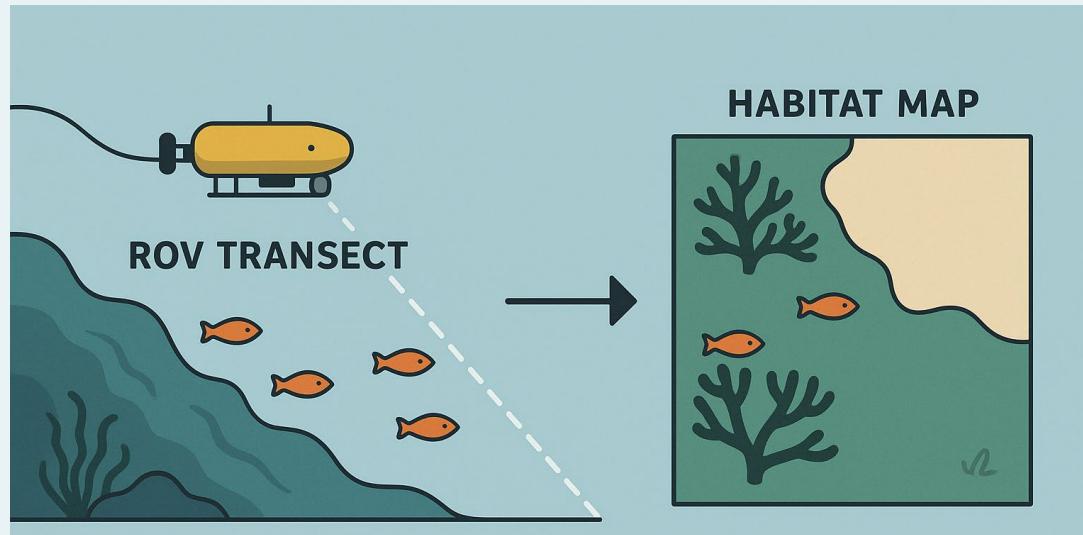
Data/Methods

- Video Camera Traps (SERFS)
- Remotely operated vehicle transects
- Habitat mapping
- Traditional tagging methods
- Genetic fin clips for DNA analysis
- Gear calibration studies



Methods – Bayesian Hierarchical Integrated Model (BHIM)

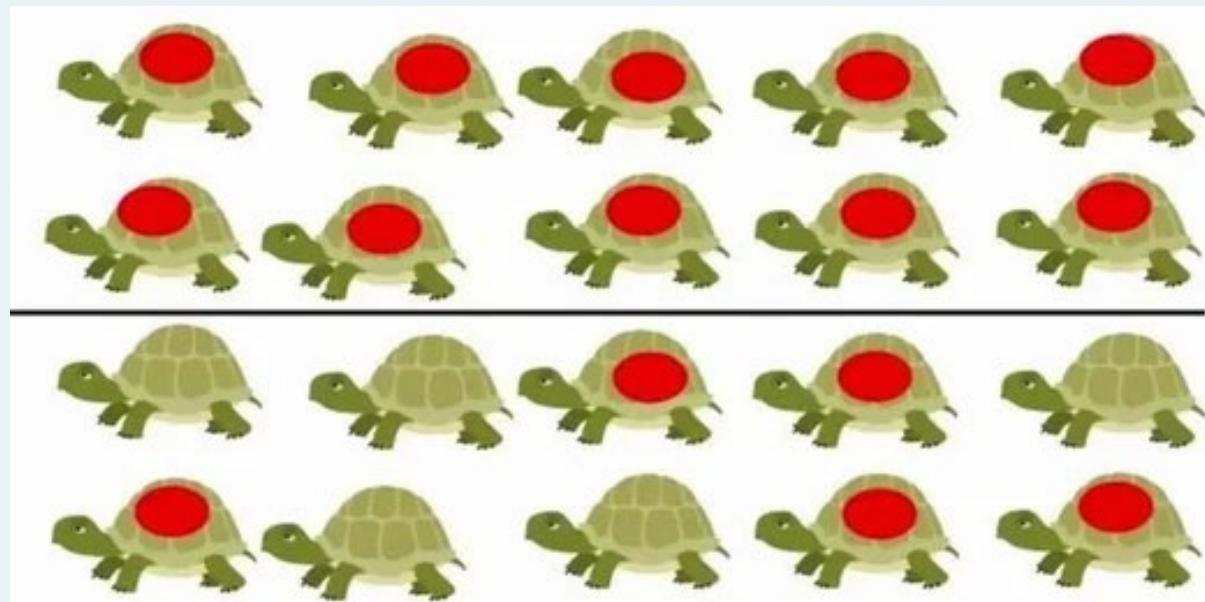
- Fish counts from ROV transects and camera traps
- Habitat distribution
- Depth distribution



<https://secas-fws.hub.arcgis.com/>

Methods – Close Kin Mark Recapture (CKMR)

- Uses Mark Recapture with DNA-based kin detection
- Identifies sibling pairs to estimate total population



<https://mixlab.com/blog/what-is-the-mark-recapture-technique>



<https://www.genome.gov/genetics-glossary/Double-Helix>

Appendices – Important Supporting Documents

- Gear Calibration covered in A. I and II
- Habitat Use and Stakeholder Maps in A. III and VIII
- Genetic Structure in A. IV
- CKMR Sensitivity in A. V
- Tagging and Discard Mortality in A. VII, IX, and X
- Model Incorporation A. VI



<https://www.fisheries.noaa.gov/feature-story/gear-summer-snapper-season-return-em-right>



Preliminary Conclusions

- CKMR was robust to most inputs tested
- BHIM was sensitive to estimated distribution of hardbottom habitat and included age-1 Red Snapper
- CKMR estimates were similar to SEDAR 73 Update



Credit: SC Sea Grant Consortium



Review and Integration Timeline

