



Southeast Reef Fish Survey

2021 Update Sampling Activities and Relative Abundance

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March 2022 SAFMC meeting

Southeast Reef Fish Survey (SERFS)



NOAA Ship *Pisces*



R/V *Palmetto*



R/V *Savannah*

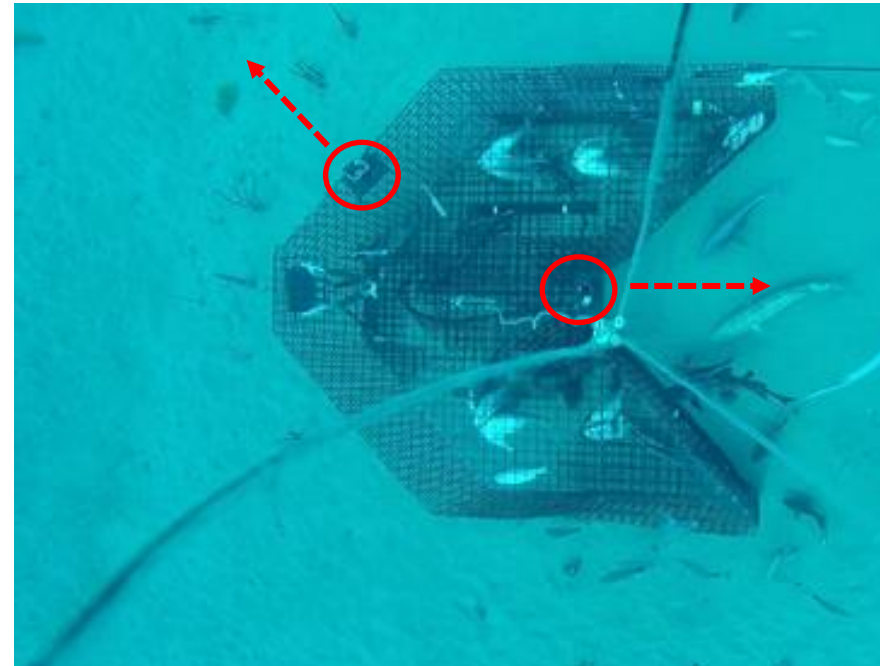
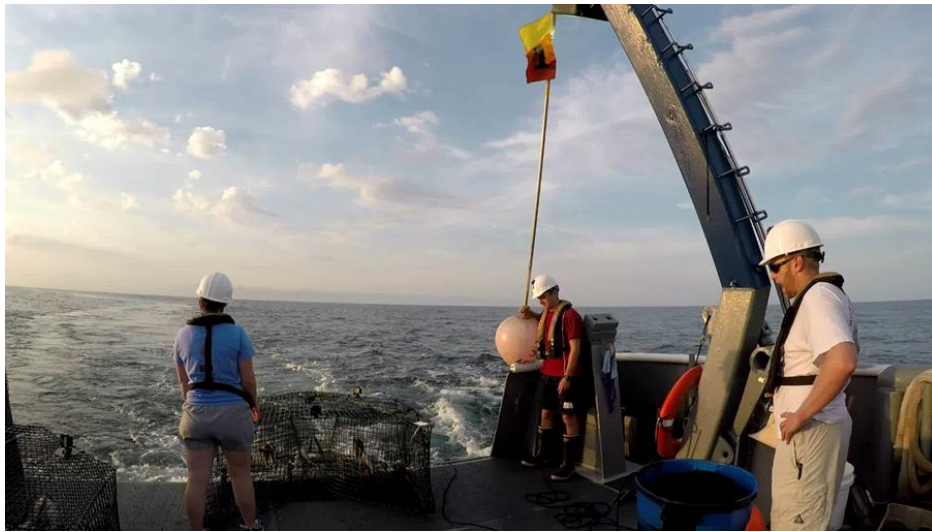
Field sampling:

MARMAP - SEAMAP-SA - SEFIS

Marine Resources Monitoring, Assessment & Prediction Program (SCDNR)
Southeast Area Monitoring & Assessment Program - South Atlantic (SCDNR)
Southeast Fishery-Independent Survey (SEFSC)

Chevron Video Trap Sampling

- Target low to medium relief, live-bottom habitat to depths ≈ 110 m
- Trap used consistently and standardized since 1990
- Baited with menhaden, soak time ≈ 90 minutes
- Since 2010: two underwater video cameras added to each trap



- $\approx 4,300$ trap sampling stations (NC– FL)
- $\approx 2,500$ randomly selected
- Sampling mid-April – mid-October

Sample and data processing & analyses

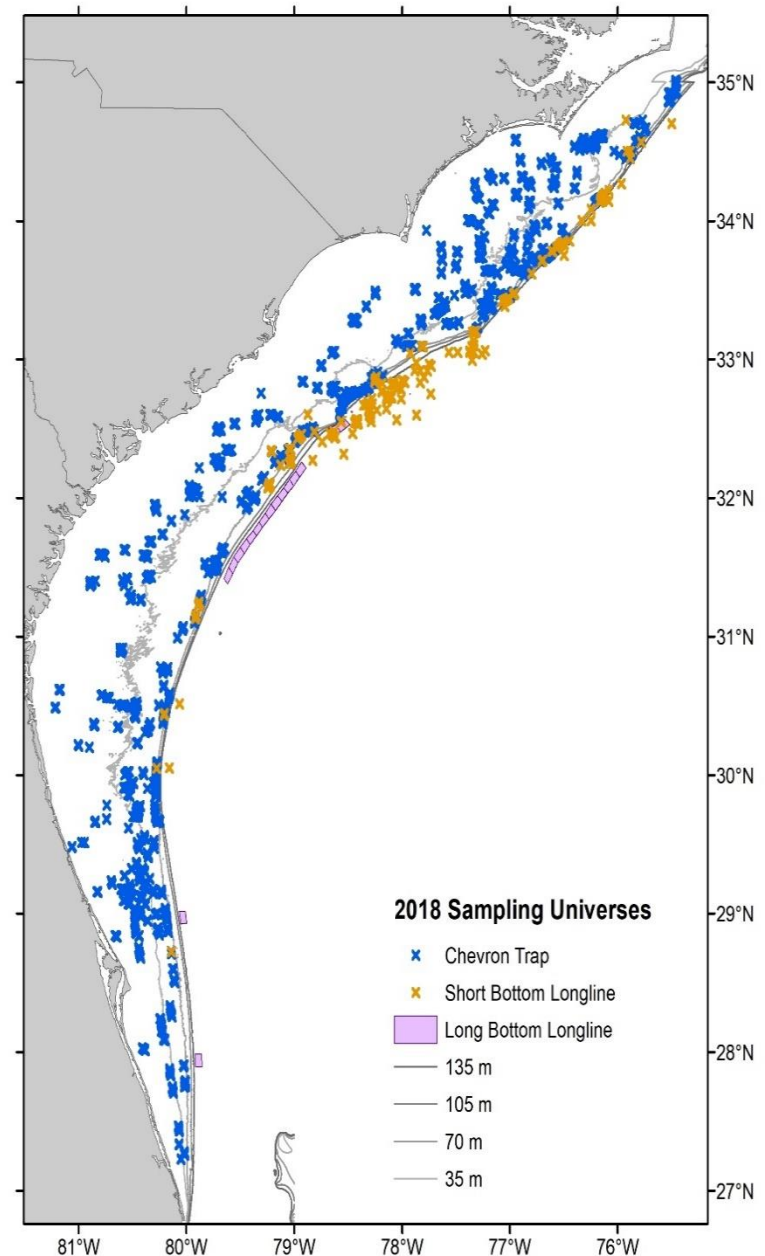
MARMAP/SEAMAP-SA (SCDNR):

- Trap and longline indices
- Life history

SEFIS (SEFSC)

- Video indices

One combined database (SEAMAP.ORG)



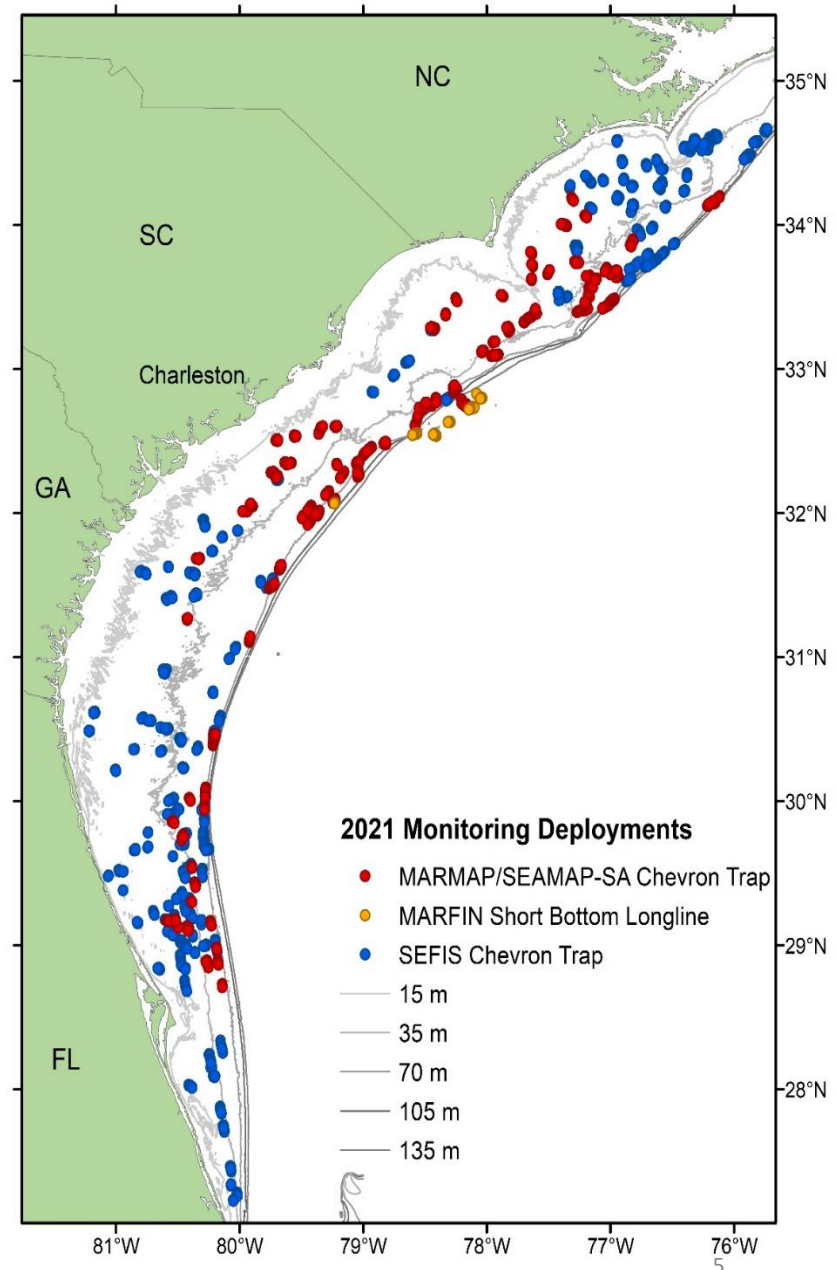
2021

No sampling in 2020 (COVID)

Full cruise schedule, but

- Reduced scientific crew
- Optimizing # traps sampled
- Reduced life history sampling
focus on otolith sampling (age)

- **118.5** days at sea
- **2,755** gear deployments
 - 2,025** Chevron Video Traps (Stations)
 - 144** Short Bottom Longlines (MARFIN)
 - 351** CTD deployments
- **39,210** fish (**86** species) collected
- **6,018** fish (**33** species) processed
for life history (age, repro., DNA)



2021 Most encountered species

Common Name	Chevron	Short BLL	Total
1. Tomtate (1)	22,698		22,698
2. Vermilion Snapper (3)	3,584	1	3,585
3. Black Sea Bass (2)	3,583		3,583
4. Red Snapper (5)	1,969	9	1,978
5. Scup/Longspine Porgy (4)	1,834		1,834
6. White Grunt (6)	914		916
7. Gray Triggerfish (8)	890		890
8. Red Porgy (7)	852	10	862
9. Sand Perch (10)	566		566
10. Spottail Pinfish (11)	489		489
11. Bank Sea Bass (9)	430		430
12. Knobbed Porgy (12)	151		151
13. Snowy Grouper (18)	12	107	119
16. Silk Snapper (16)	68	5	73
19. Scamp (27)	23	16	39
22. Gag (19)	26	2	28

Overview of CPUE

- No sampling in 2020
- No update for longline indices (analyses ongoing)
- Chevron index (1990-2021) - Video index (2011-2019)
- Standardized using Zero-Inflated Negative Binomial model (ZINB)
Most appropriate method, reduces uncertainty

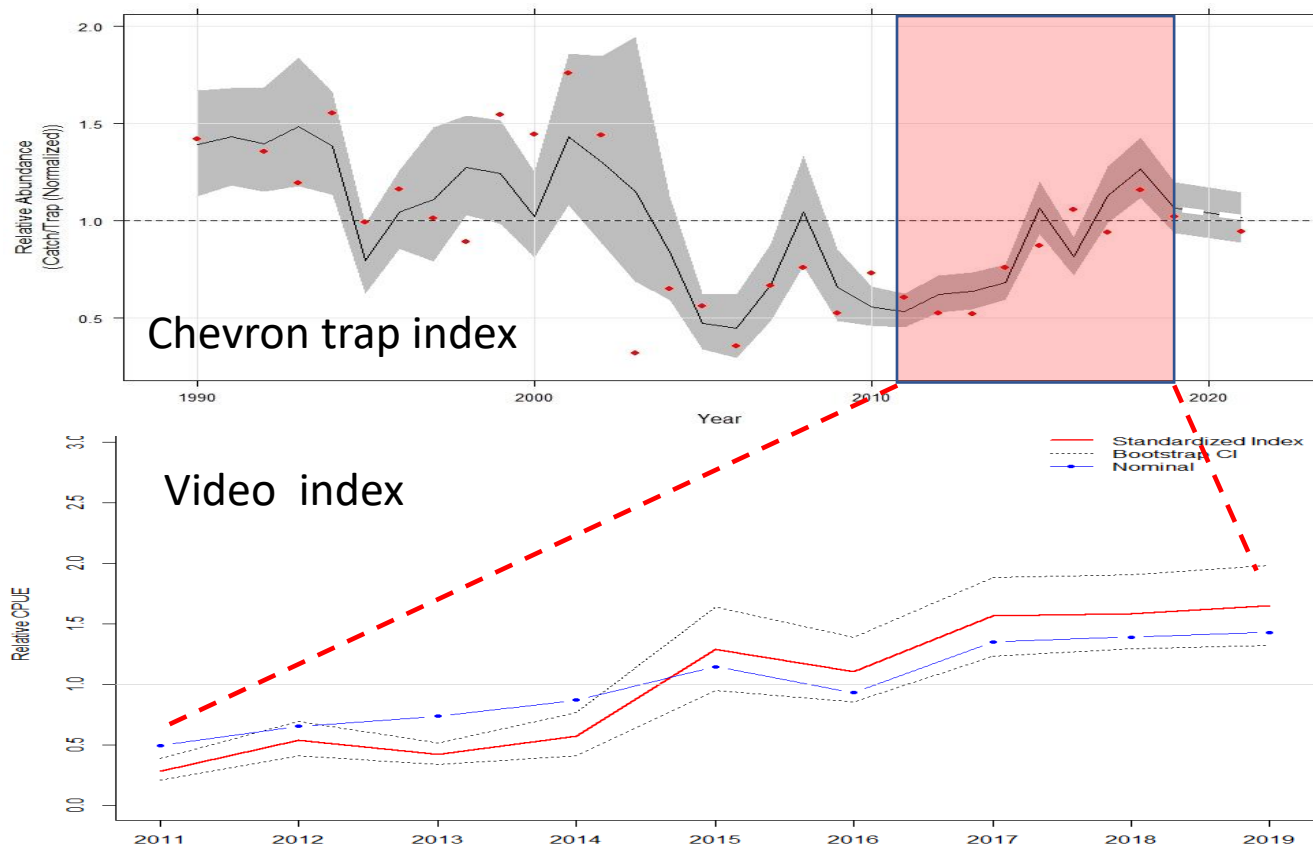
Video examination:

- MeanCount method
- 10 min after trap lands on bottom
- One snapshot every 30 sec
for 20 min



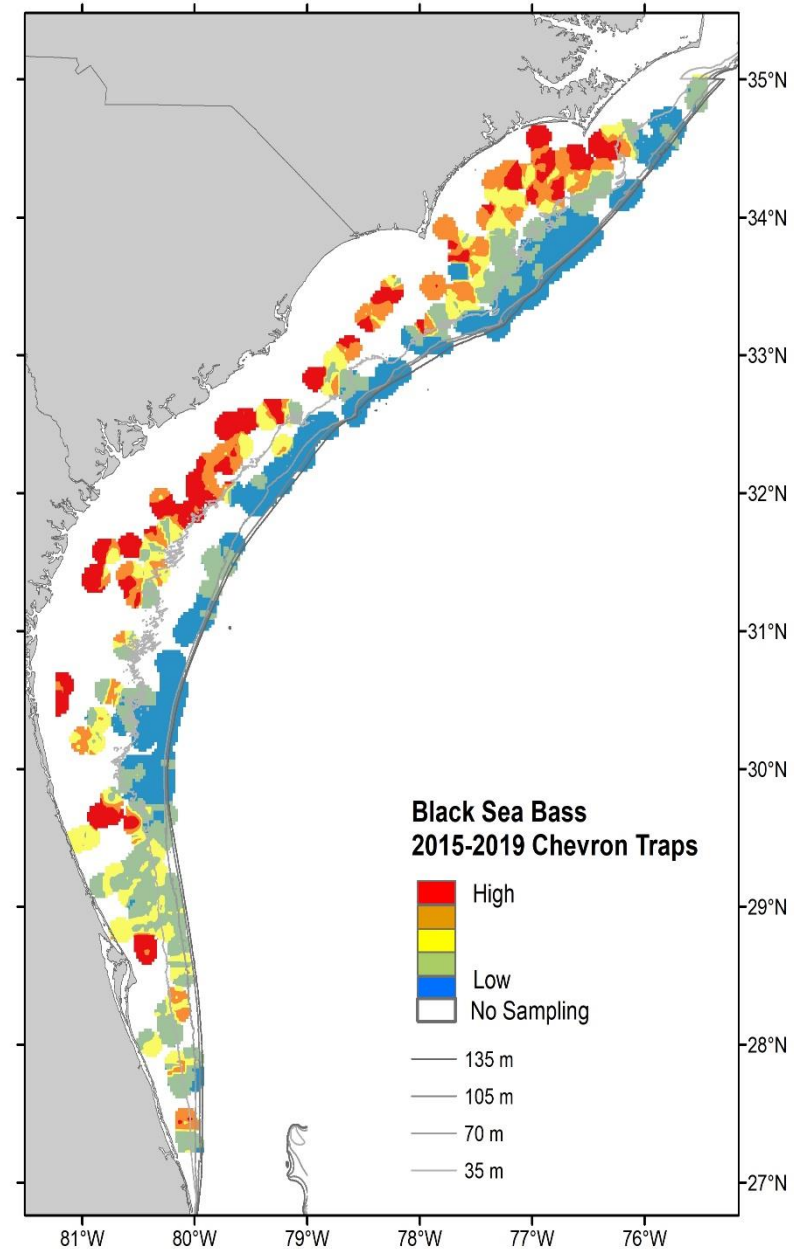
Index Figures

- Indices
 - Normalized to Long term average (1)
 - e.g. 2 = twice long-term average, and 0.5 = half long-term average
 - Black or red line : ZINB standardized index (2020 dotted)
 - Gray area or dotted lines \pm 95% CI
 - Red dots or blue line : nominal values (not standardized)



Maps

- Nominal CPUE in quartiles
- 2021 update ongoing
- Warmer colors =>
higher nominal CPUE



Trends Overview

Caveats

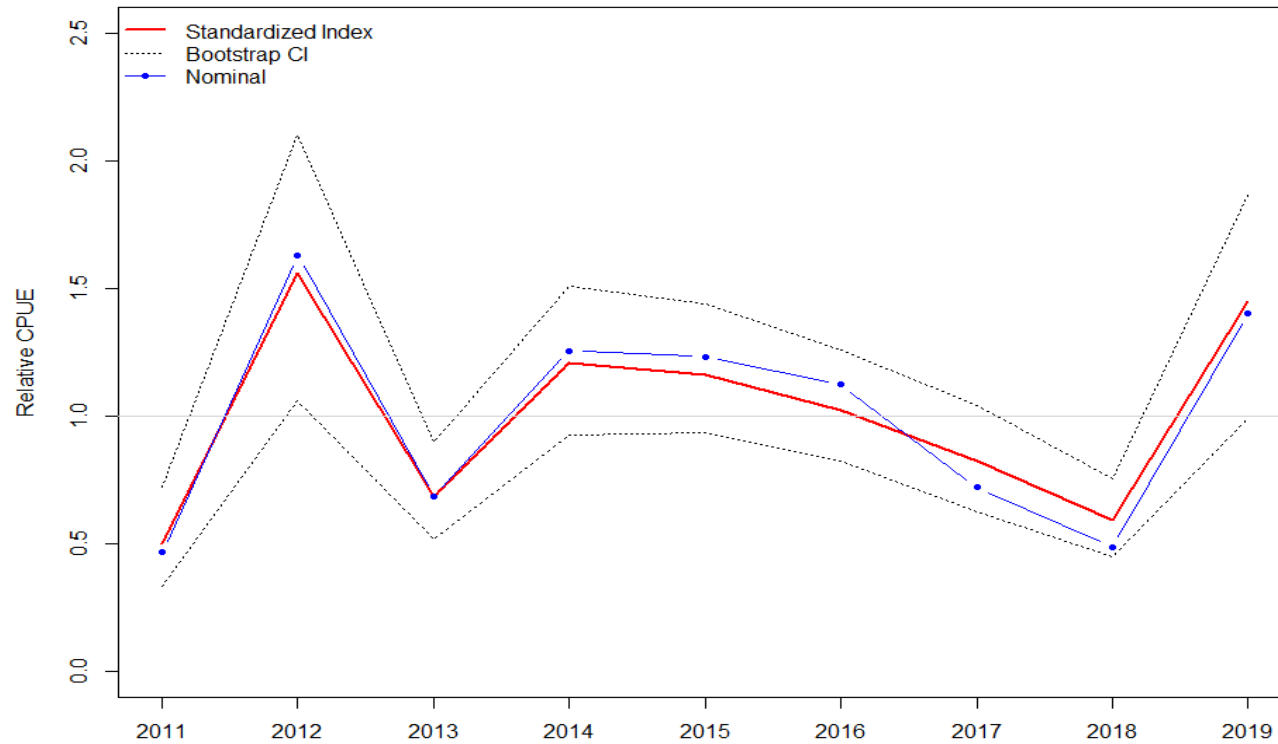
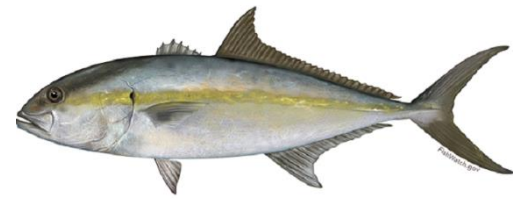


- Summary overview, not an update of stock status
- Trap: Same constraints, stratification, units, and models for CPUE each year and may be different from those used in (SEDAR) stock assessments
- Video: Index for species that have been assessed through SEDAR, with video index model used in the assessment
- Not all species have been assessed or updated (SEDAR) and not all updated trends and analyses have been discussed in assessment framework

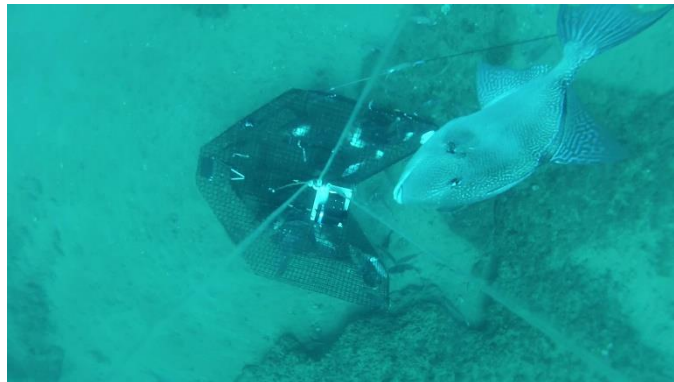
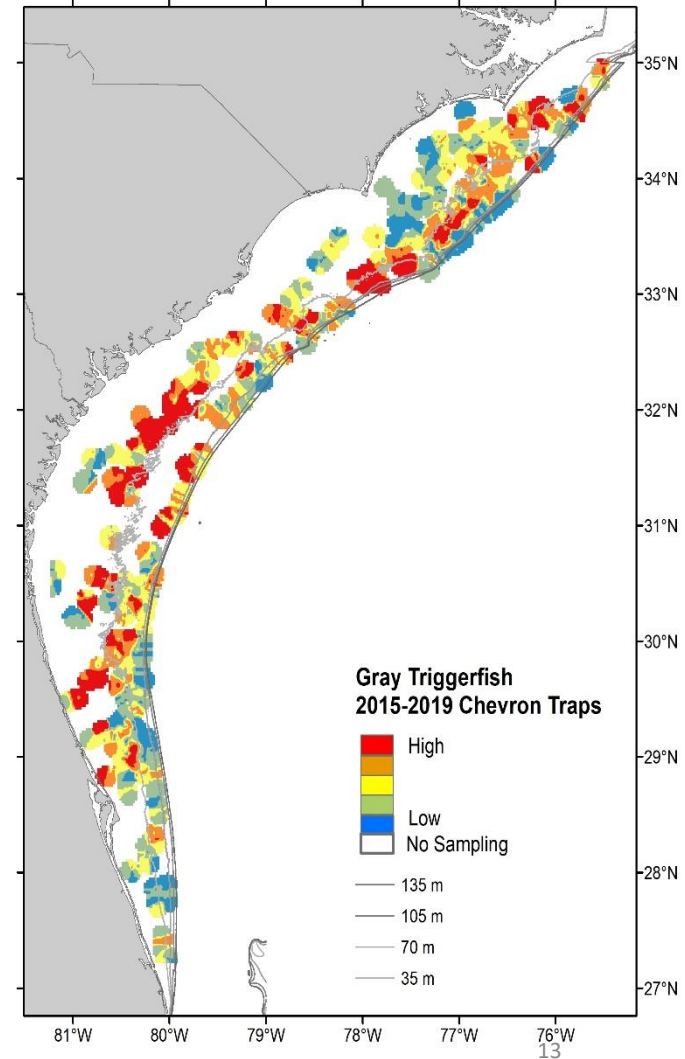
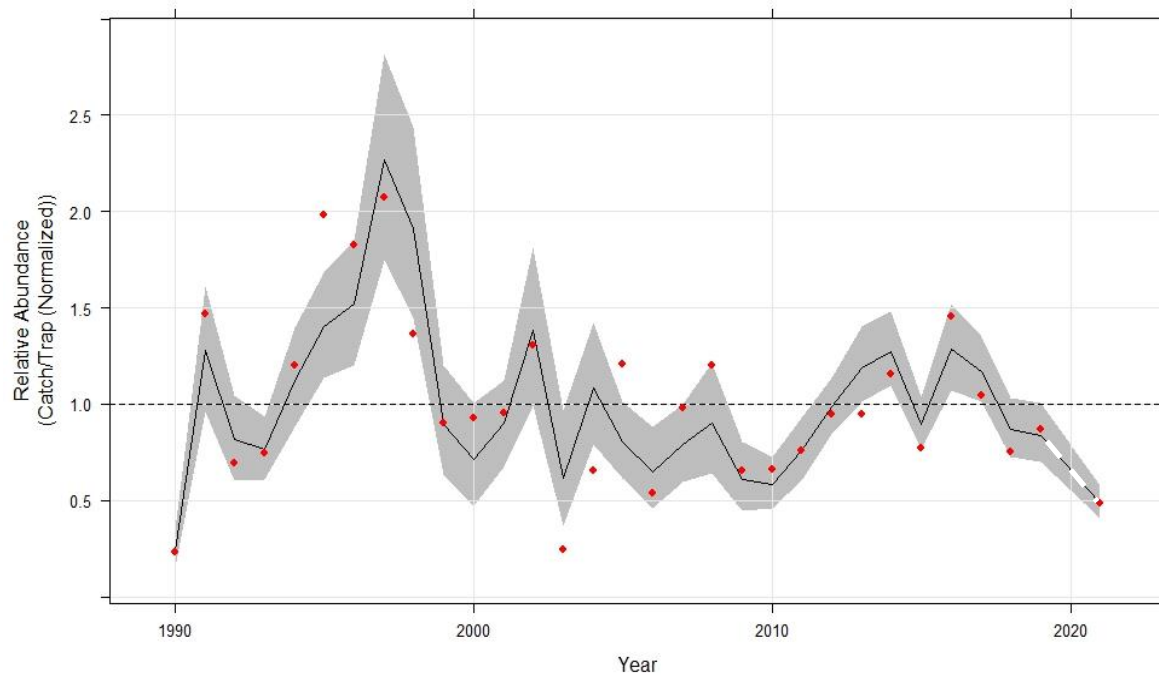
Fishery-Independent Abundance Trends 2021



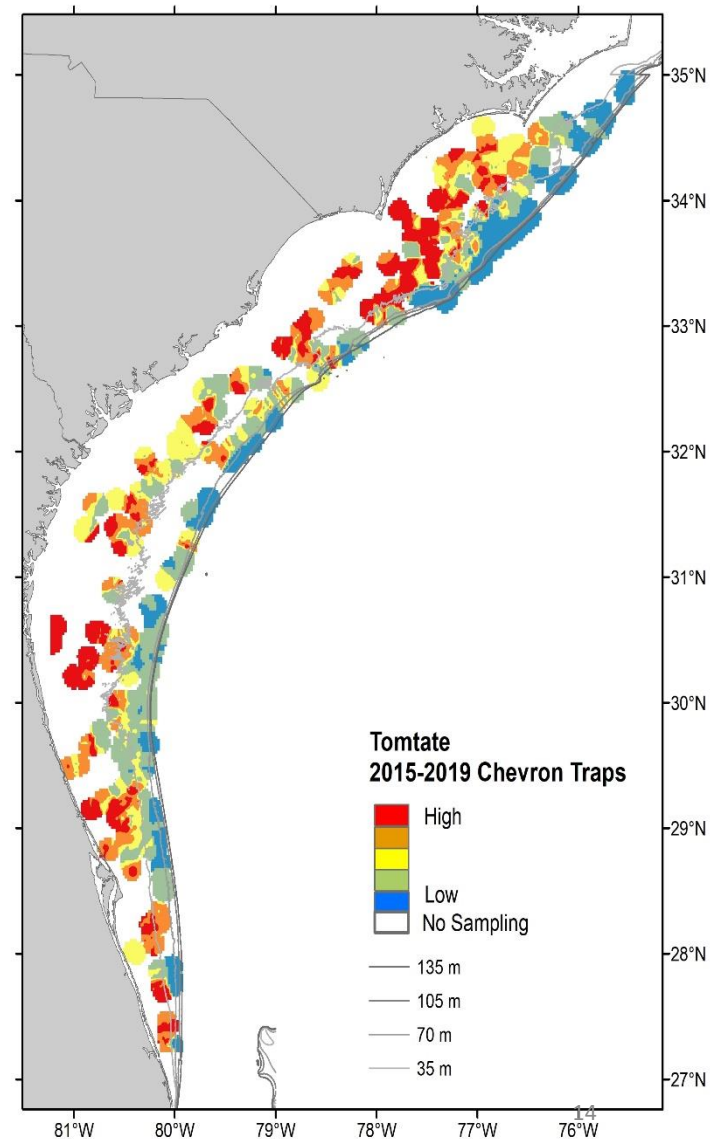
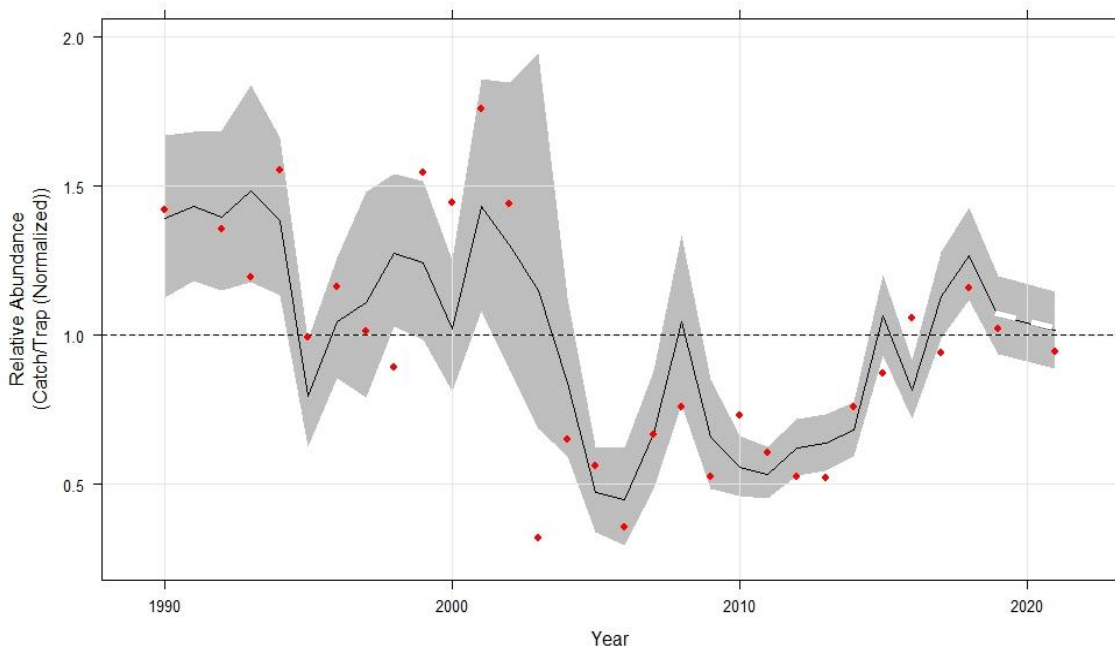
Greater Amberjack – Video index



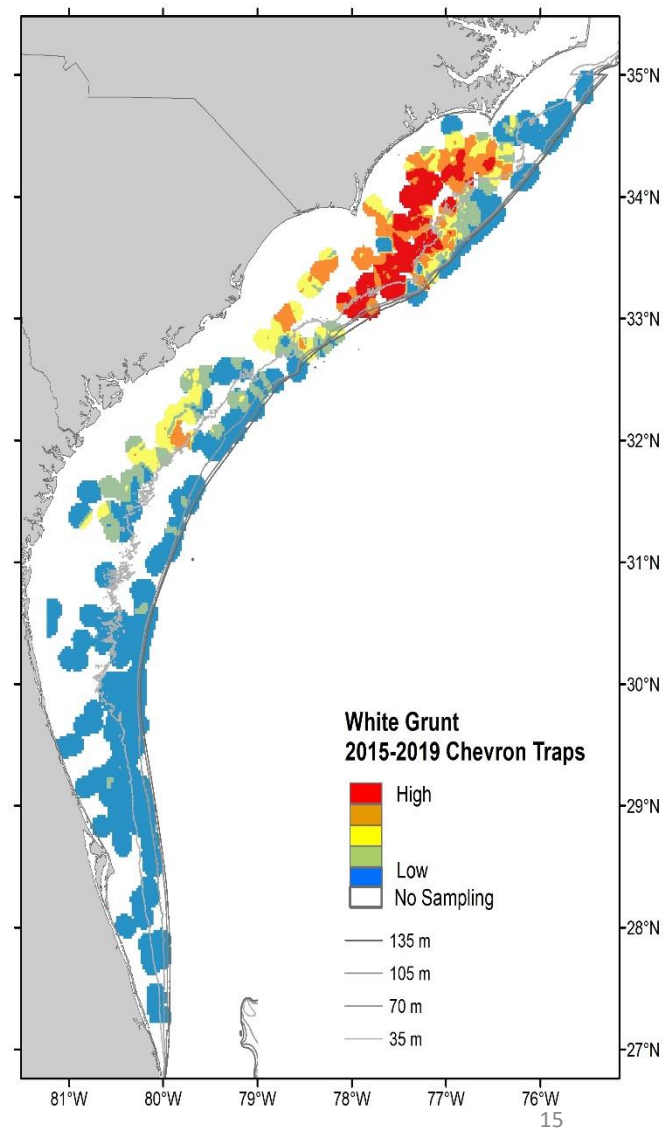
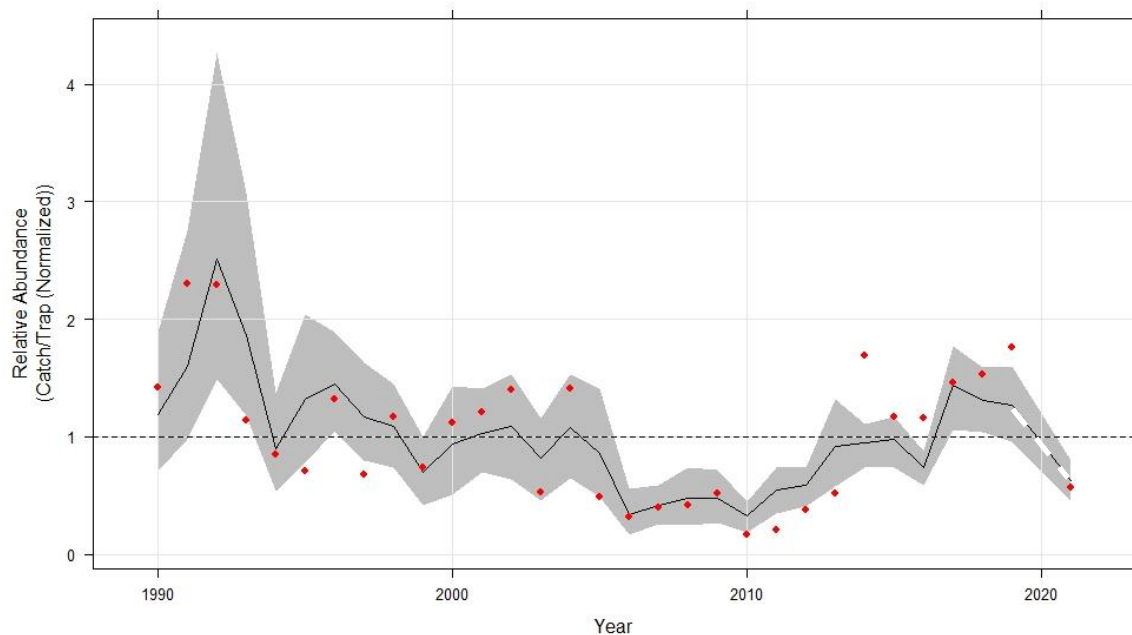
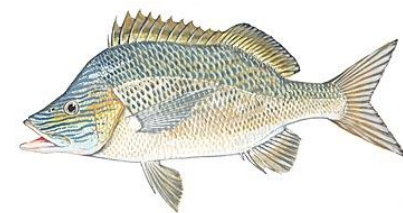
Gray Triggerfish – Chevron Trap



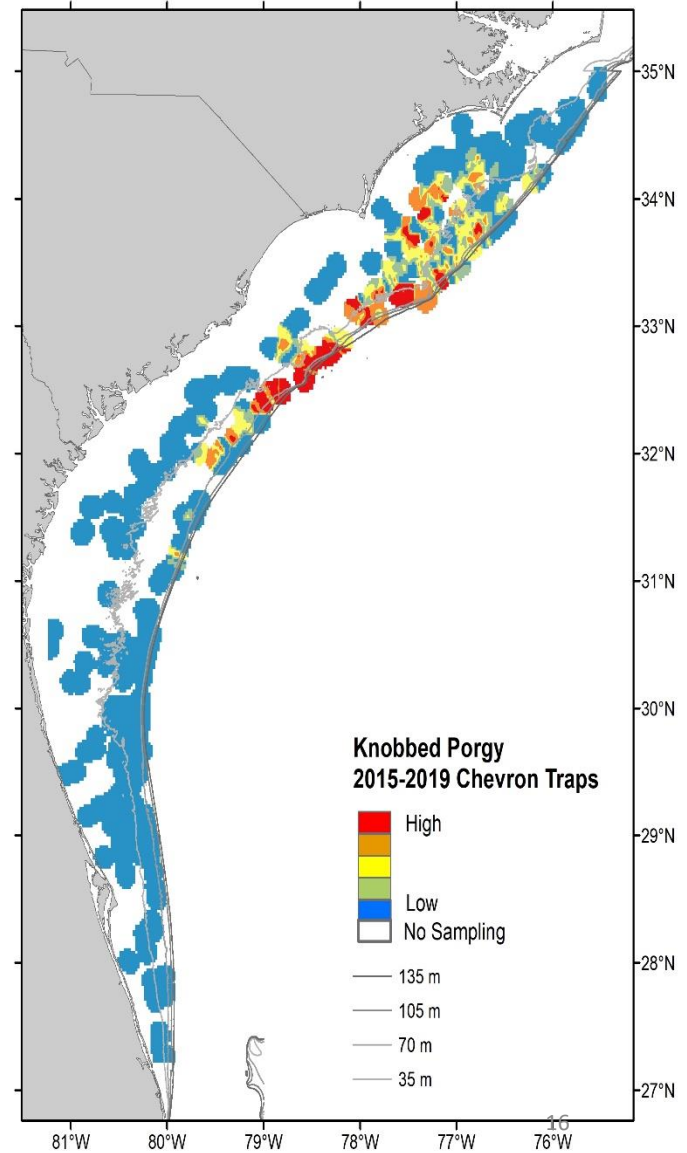
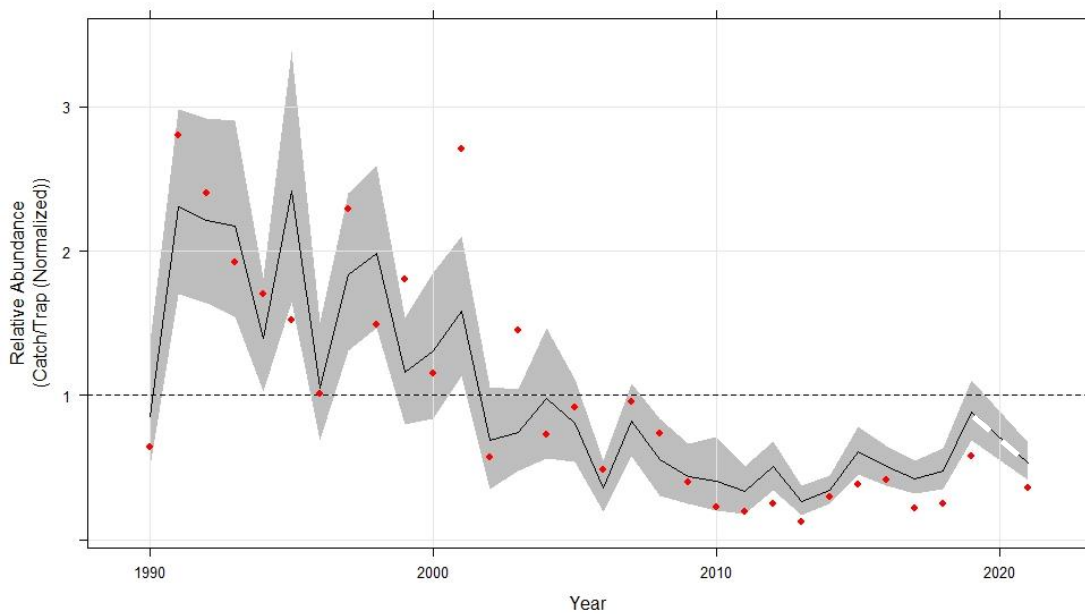
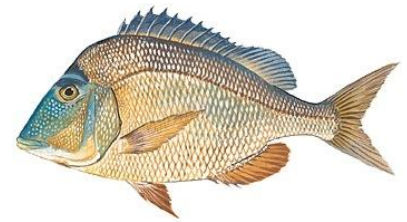
Tomtate – Chevron Trap



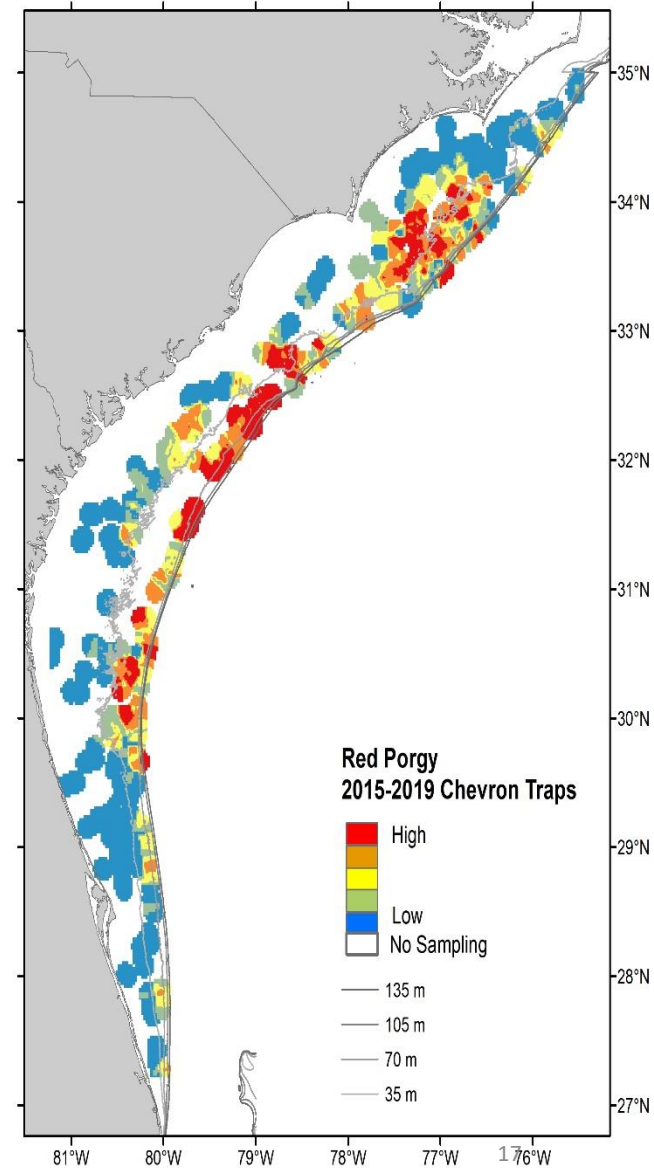
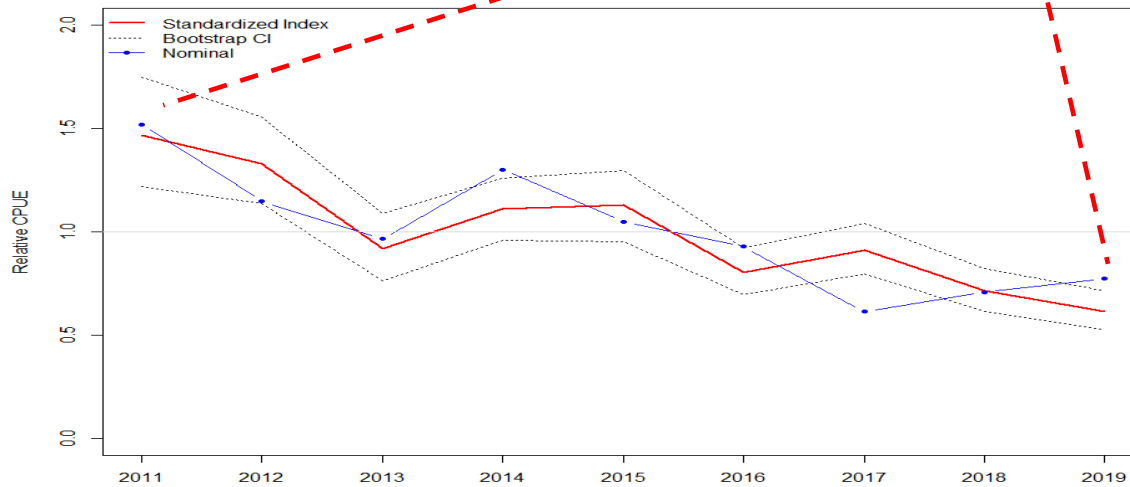
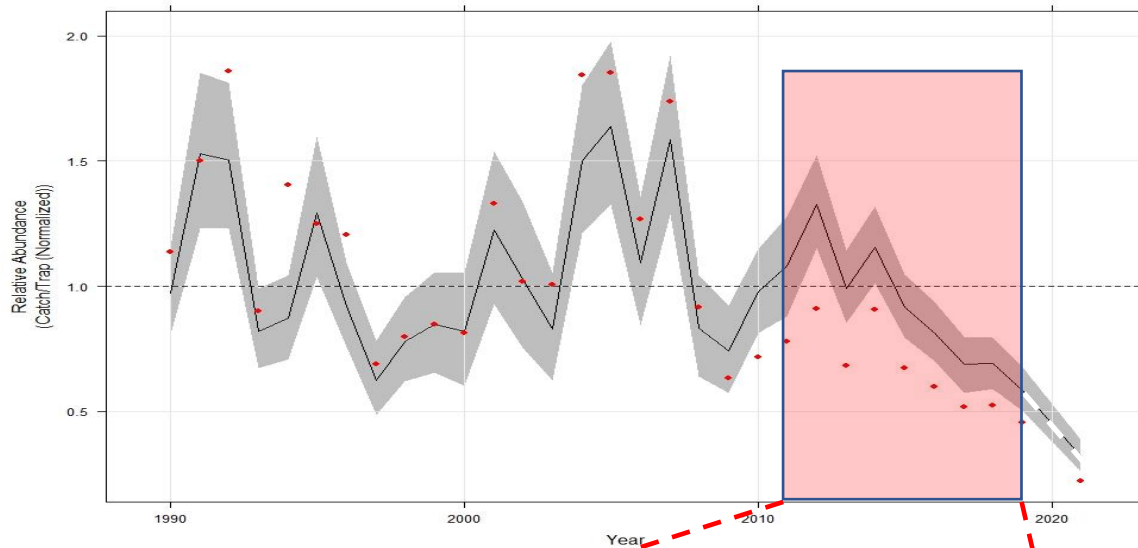
White Grunt – Chevron Trap



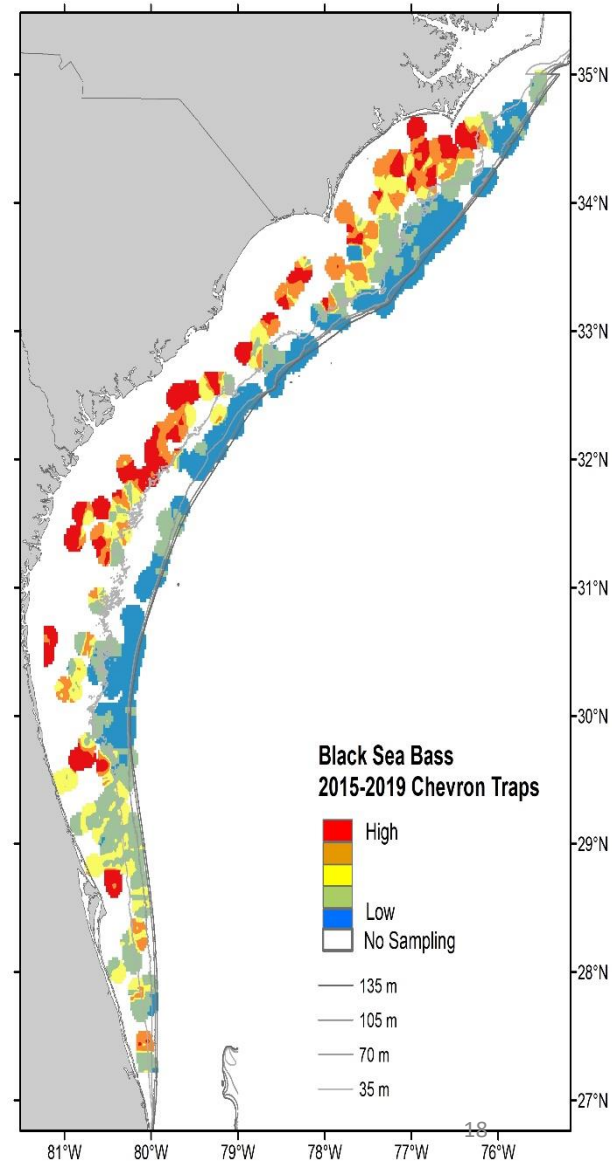
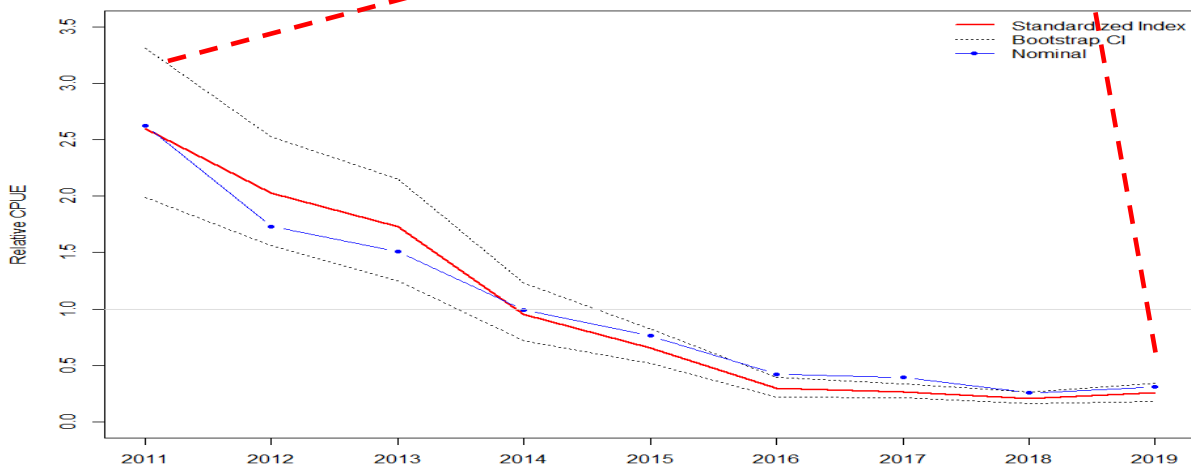
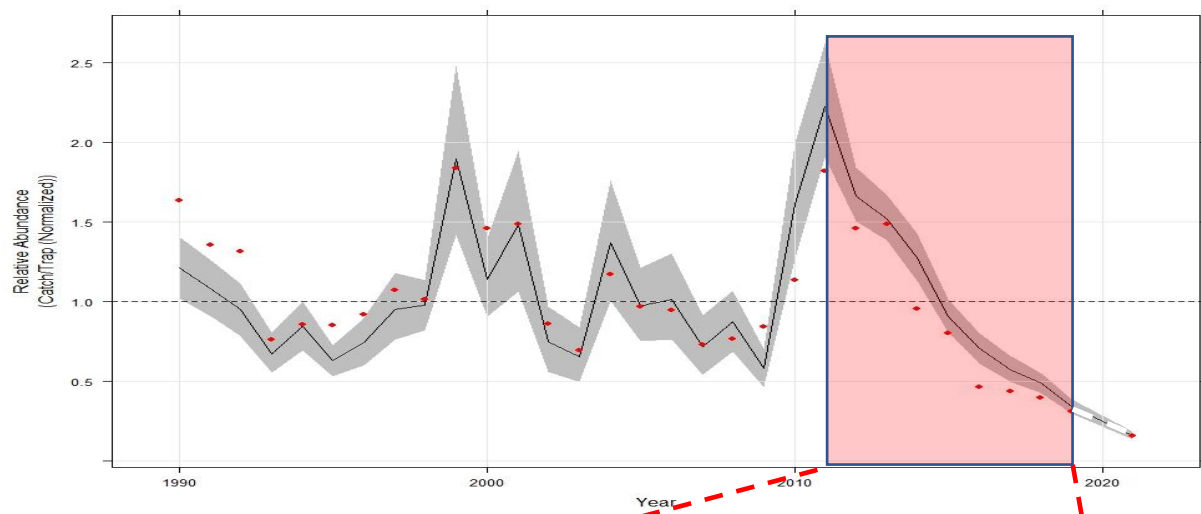
Knobbed Porgy – Chevron Trap



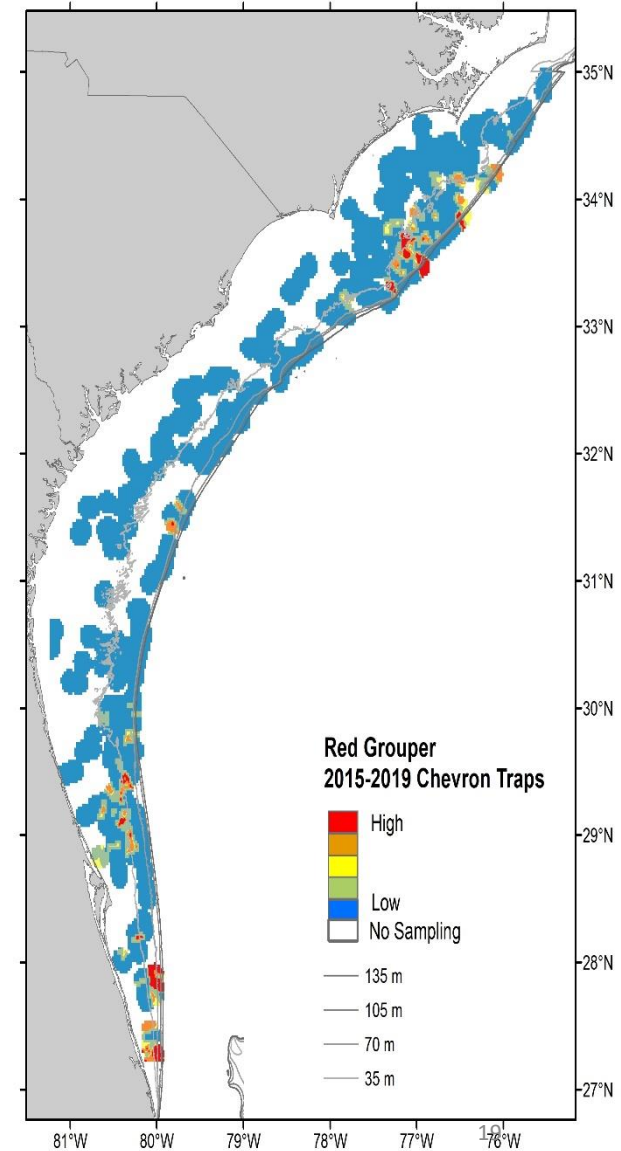
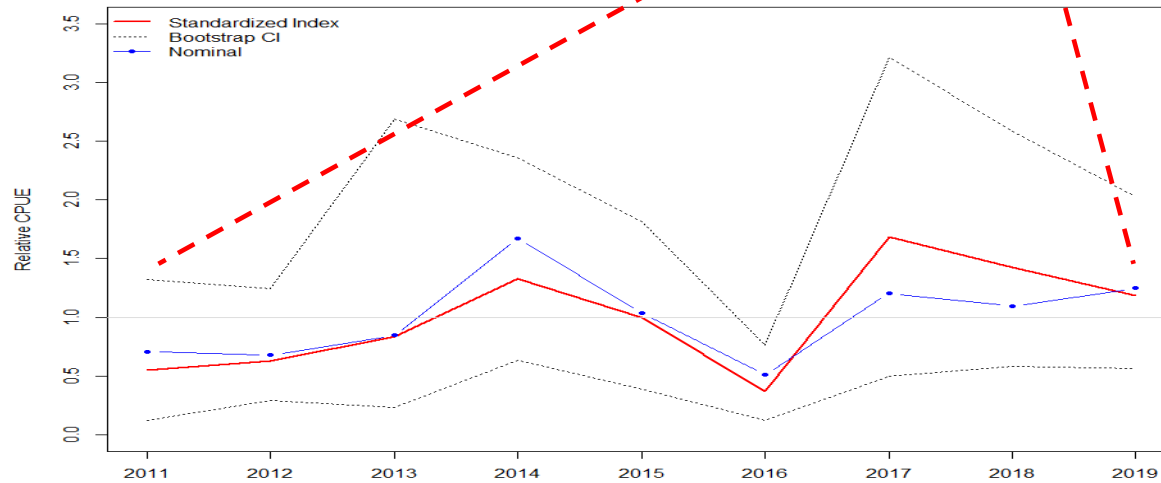
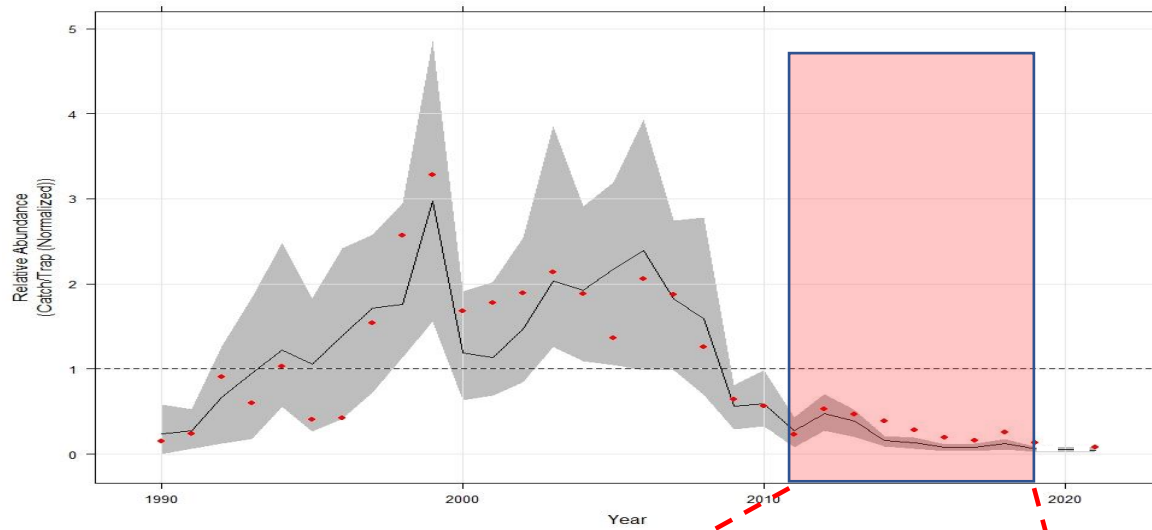
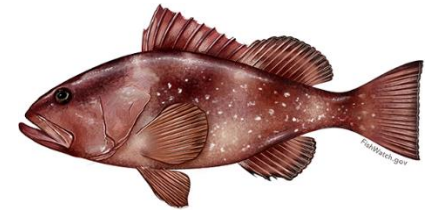
Red Porgy



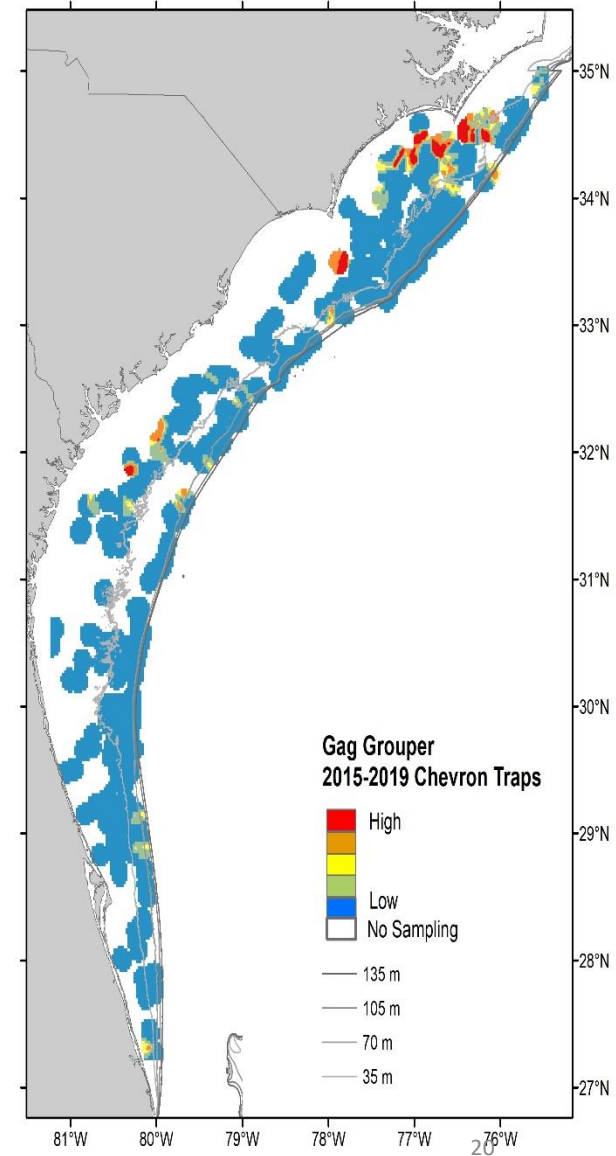
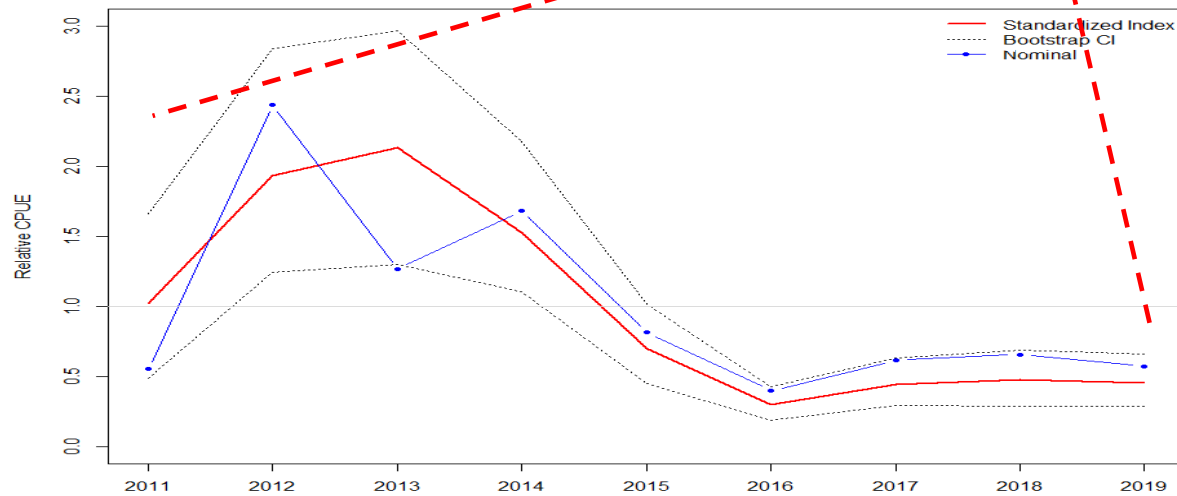
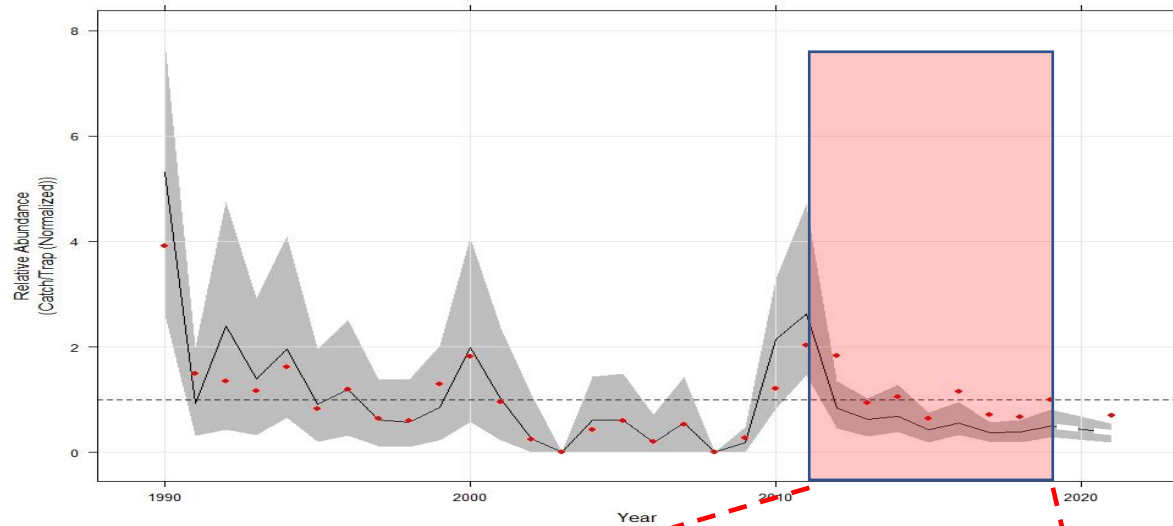
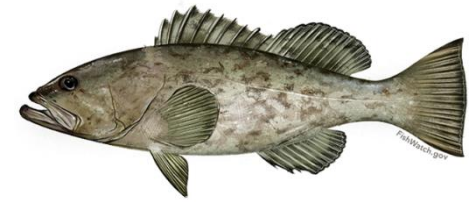
Black Sea Bass



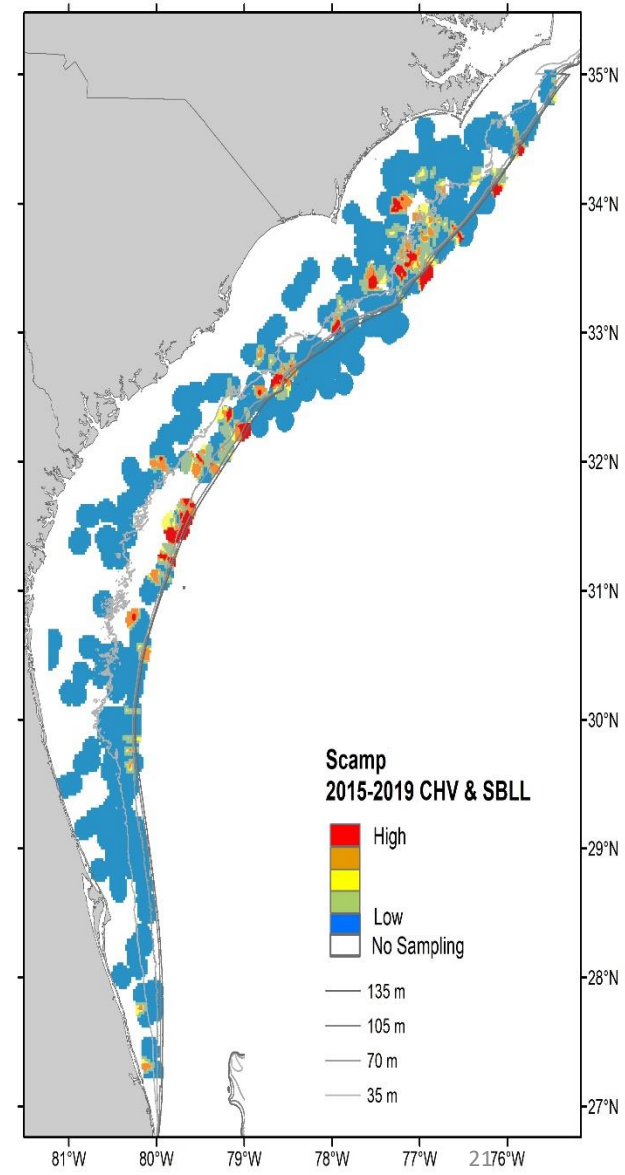
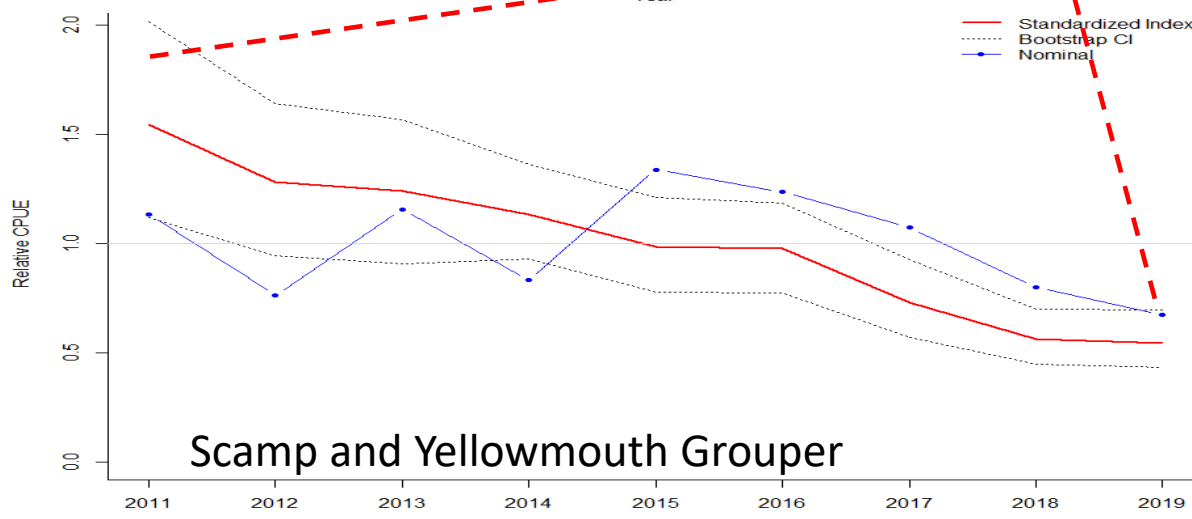
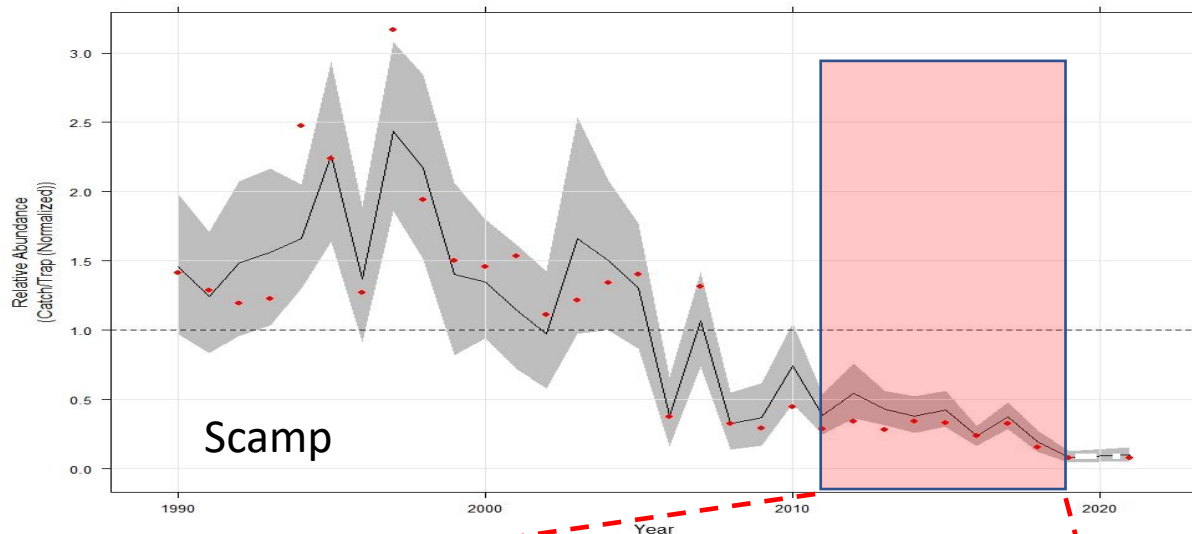
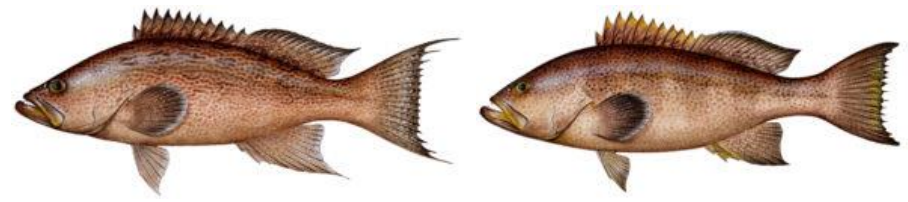
Red Grouper



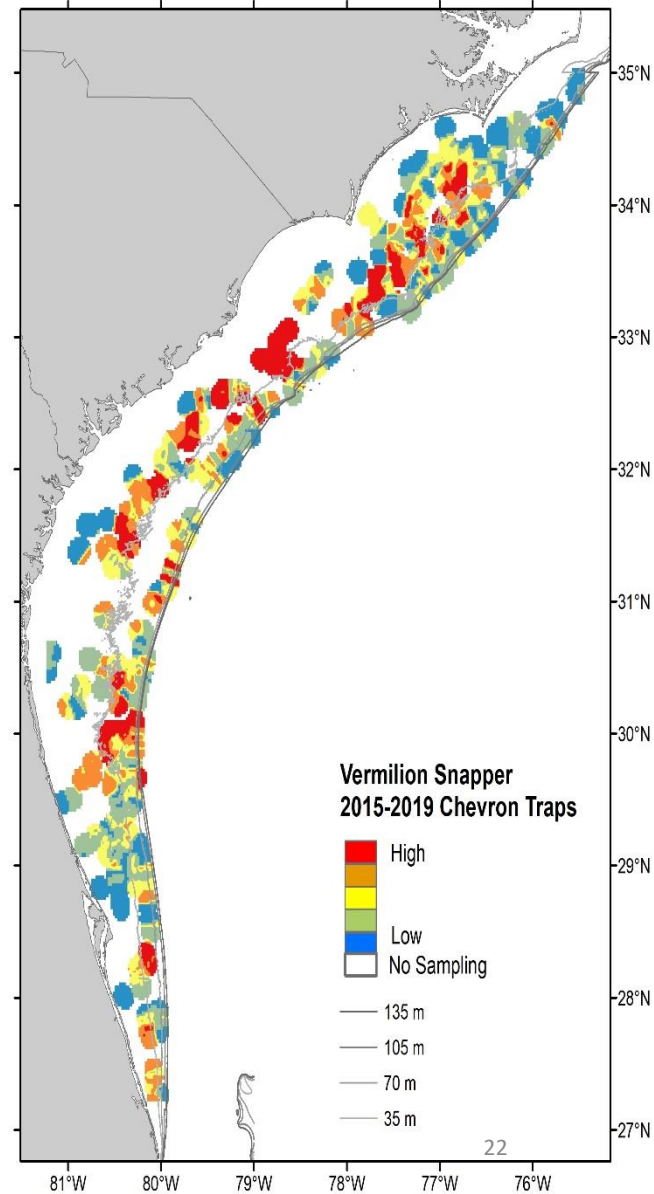
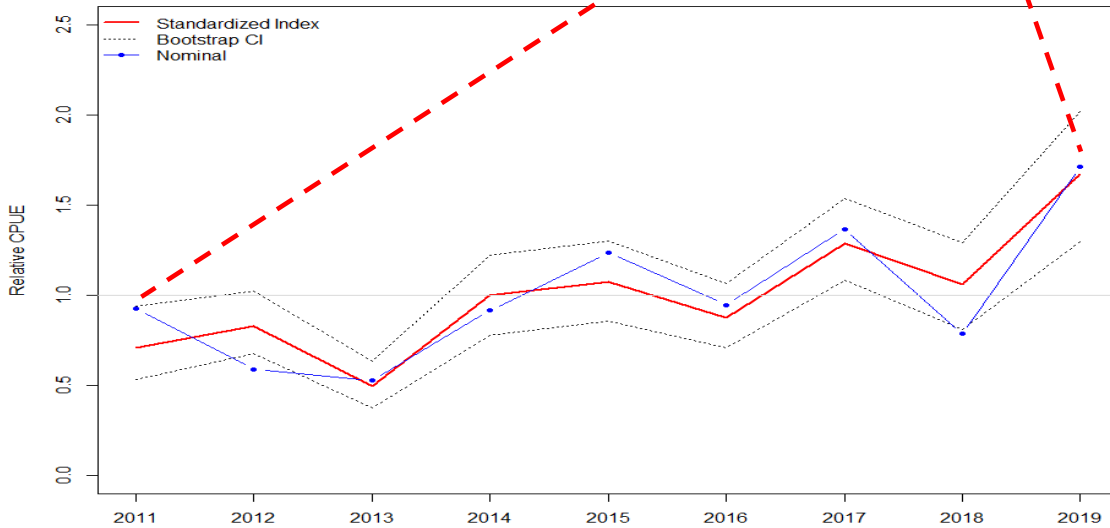
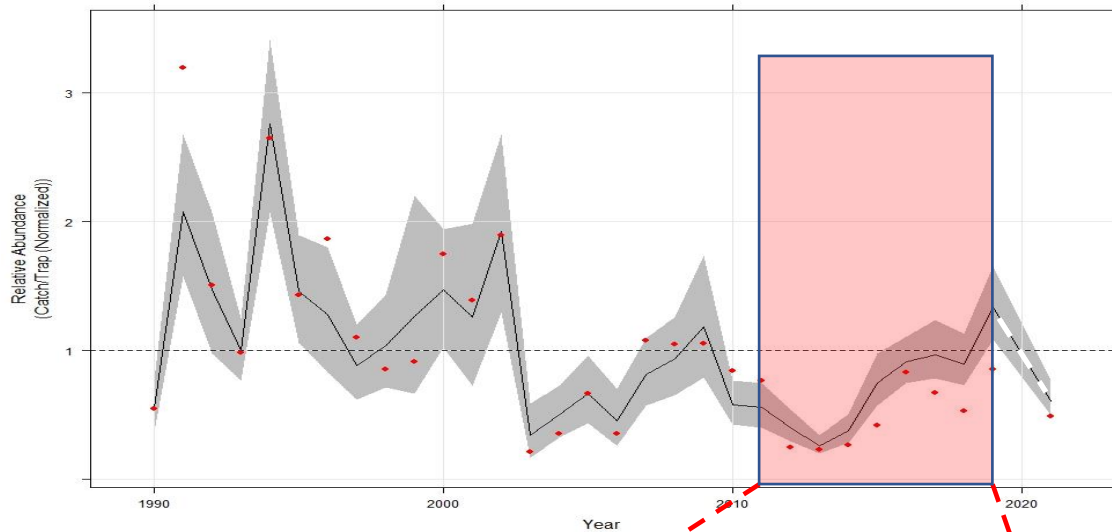
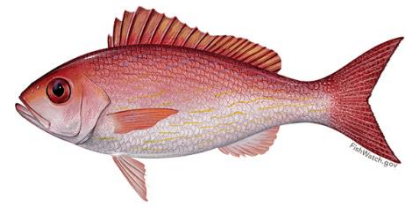
Gag



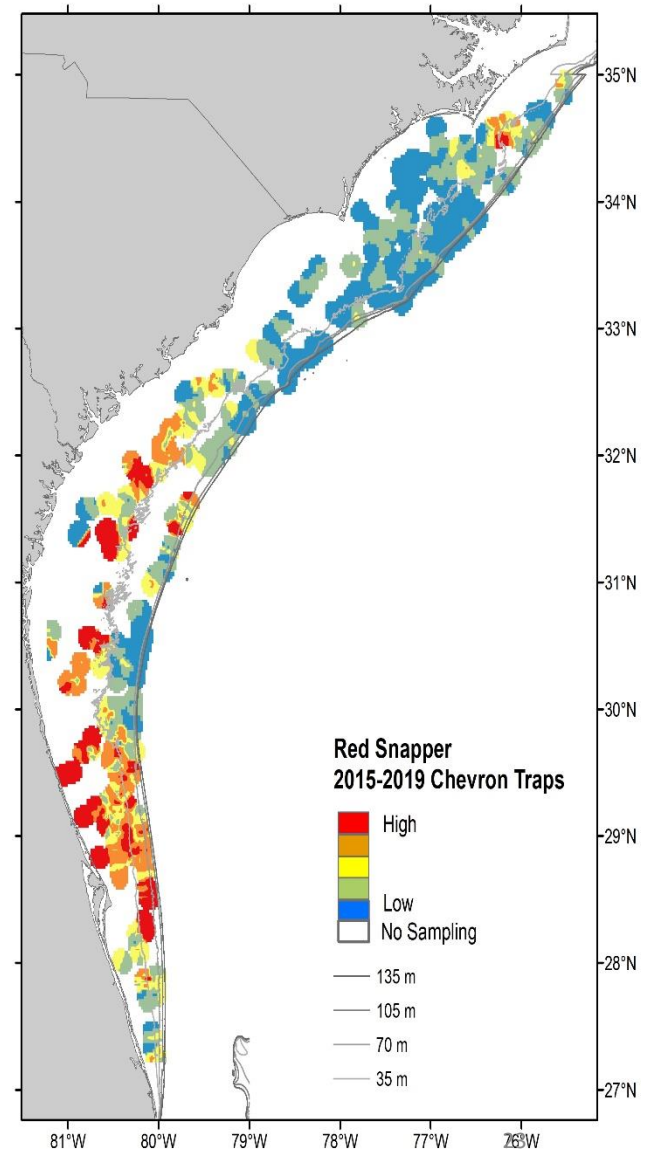
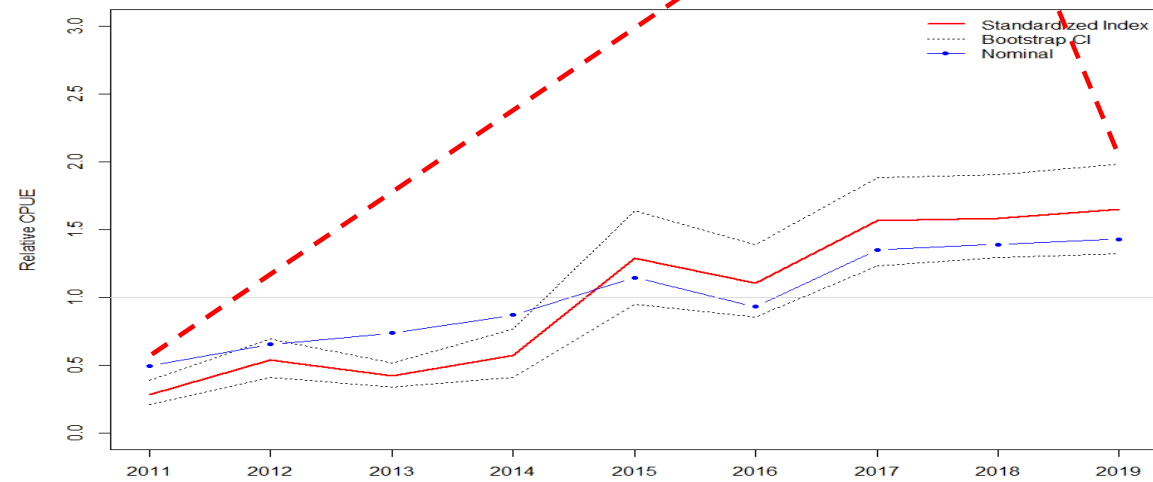
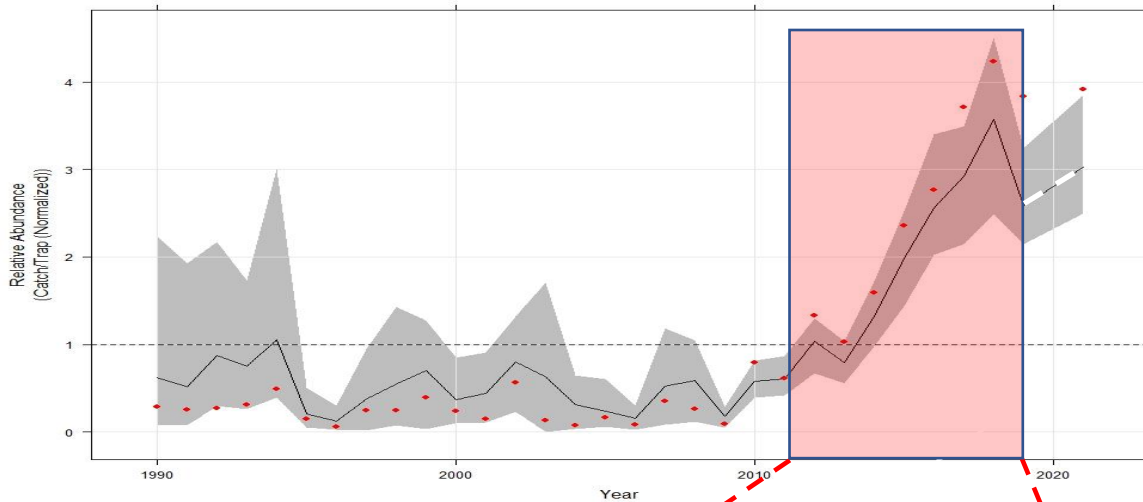
Scamp/Yellowmouth



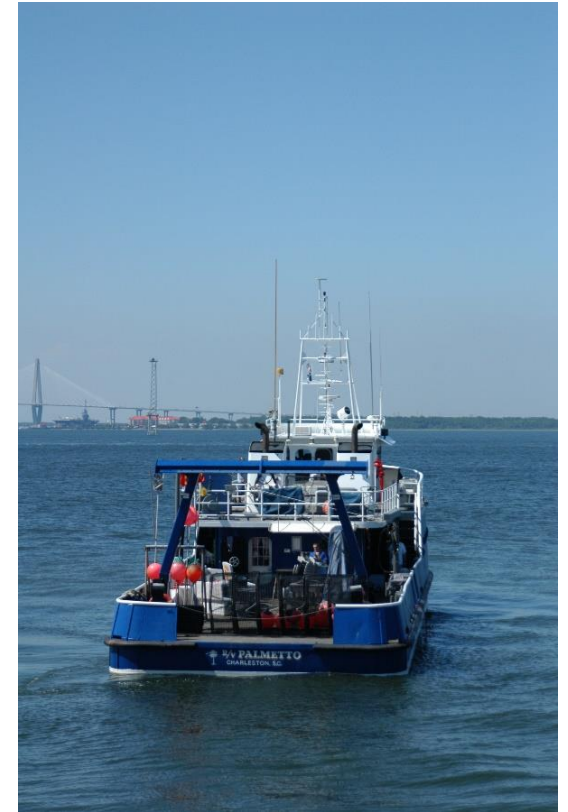
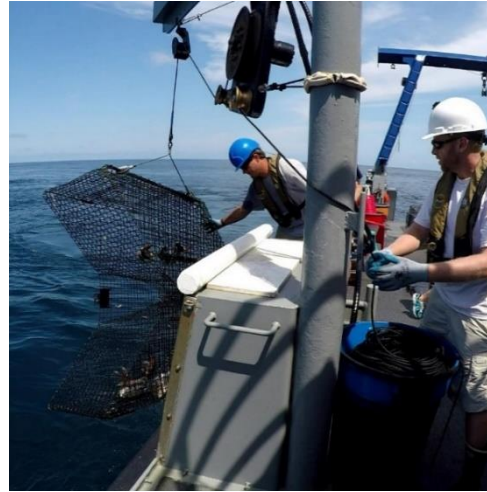
Vermilion Snapper



Red Snapper



2022 SERFS plans



Sampling:

Mid-April → Mid-October

≈ 100 days at sea

3 vessels

Complete scientific crew

Full life history sampling schedule

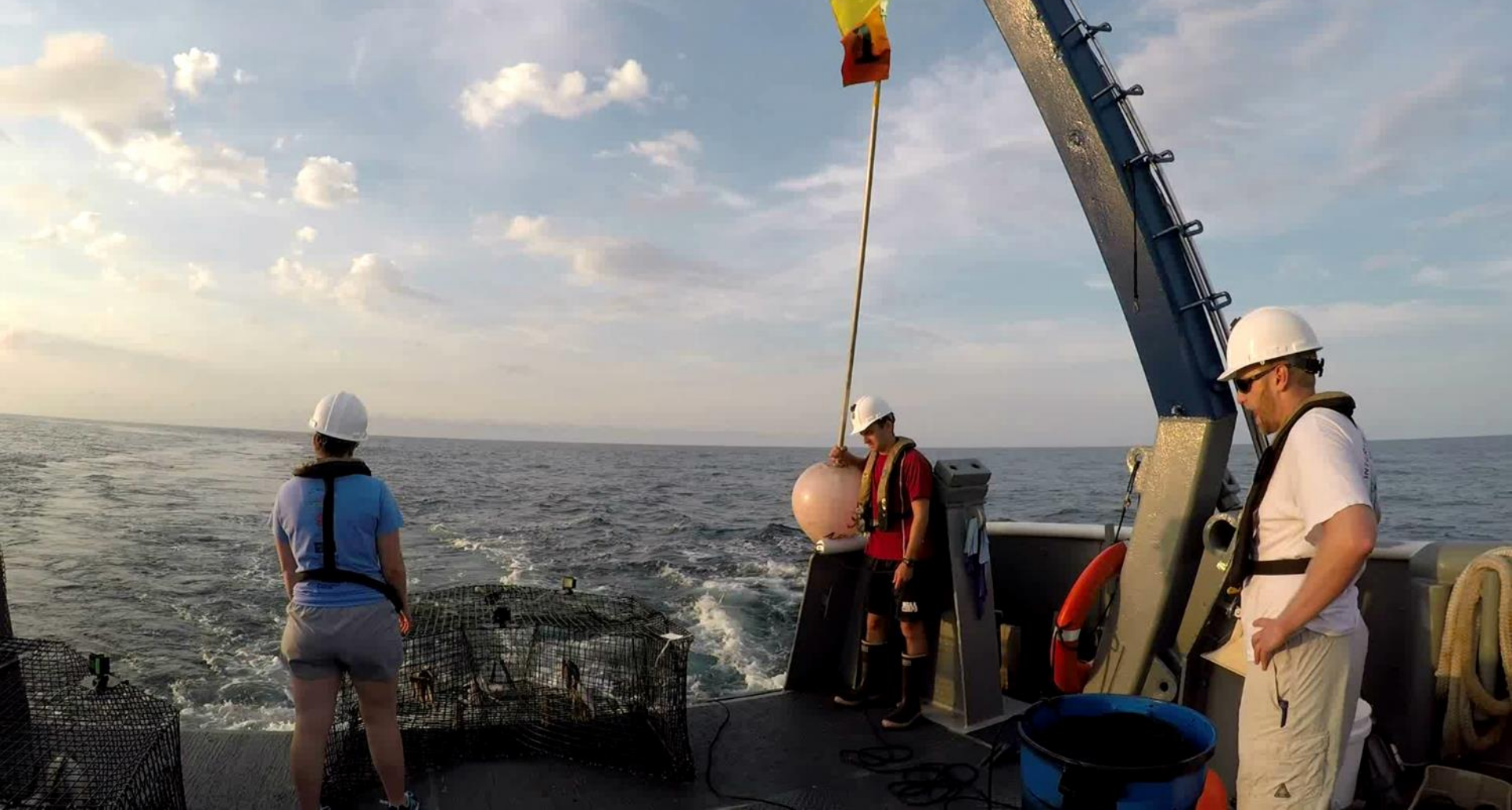


Acknowledgements:

MARMAP/SEAMAP-SA/SEFIS
Staff & Students
Research Vessel Crews
Past and Present

NOAA funding
SCDNR support





Questions