

Southeast Reef Fish Survey Coastal Trawl Survey

2024 Sampling Activities and Relative Abundance Trends

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September SAFMC Meeting

Presentation Overview

SERFS then CTS

Survey Design

2024 Activities

Abundance, Length & Distribution for Selected Spp.



Relative Abundance Overview

Caveats



- Not an update of stock status
- Constraints, stratification, units, and models may be different from those used in (SEDAR) stock assessments
- May not have been reviewed in a SEDAR or other assessment framework

Southeast Reef Fish Survey (SERFS)

Current Funding & Sampling:
MARMAP + SEAMAP-SA + SEFIS

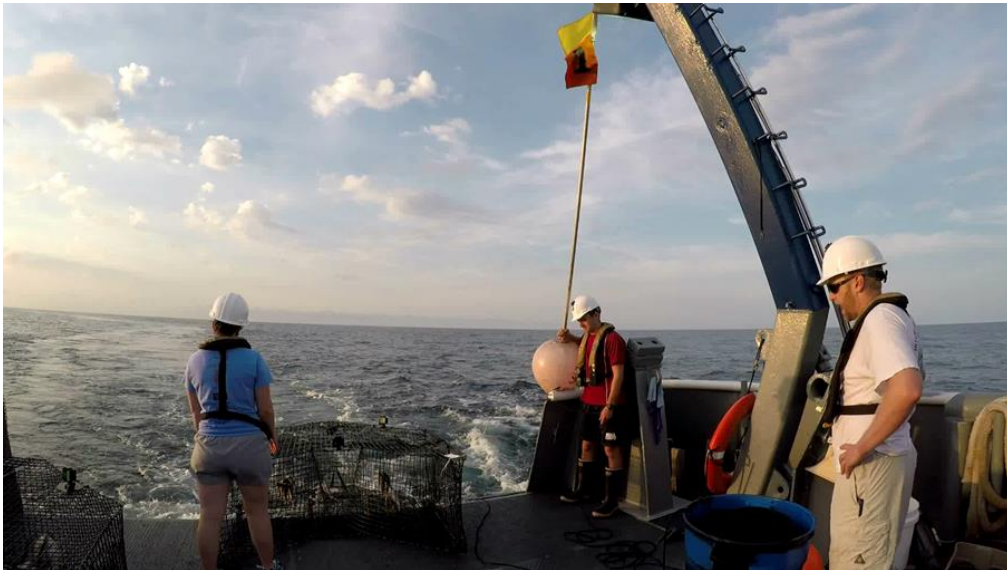
Historical Funding & Sampling:
MARMAP



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

Chevron Video Trap (CVT) Sampling

- Target low to medium relief, hard-bottom habitats
- Depths ~15-110 m
- ~April 15 - Oct. 14
- Trap used consistently and standardized since 1990
- Baited with menhaden, soak time \approx 90 minutes
- Since 2011: all traps have at least 2 video cameras



CVT Universe

- ~ 4,300 trap sampling stations (NC-FL)
- Simple, random selection
- ~ 1,500 targeted in 2024

Sample and data processing & analyses

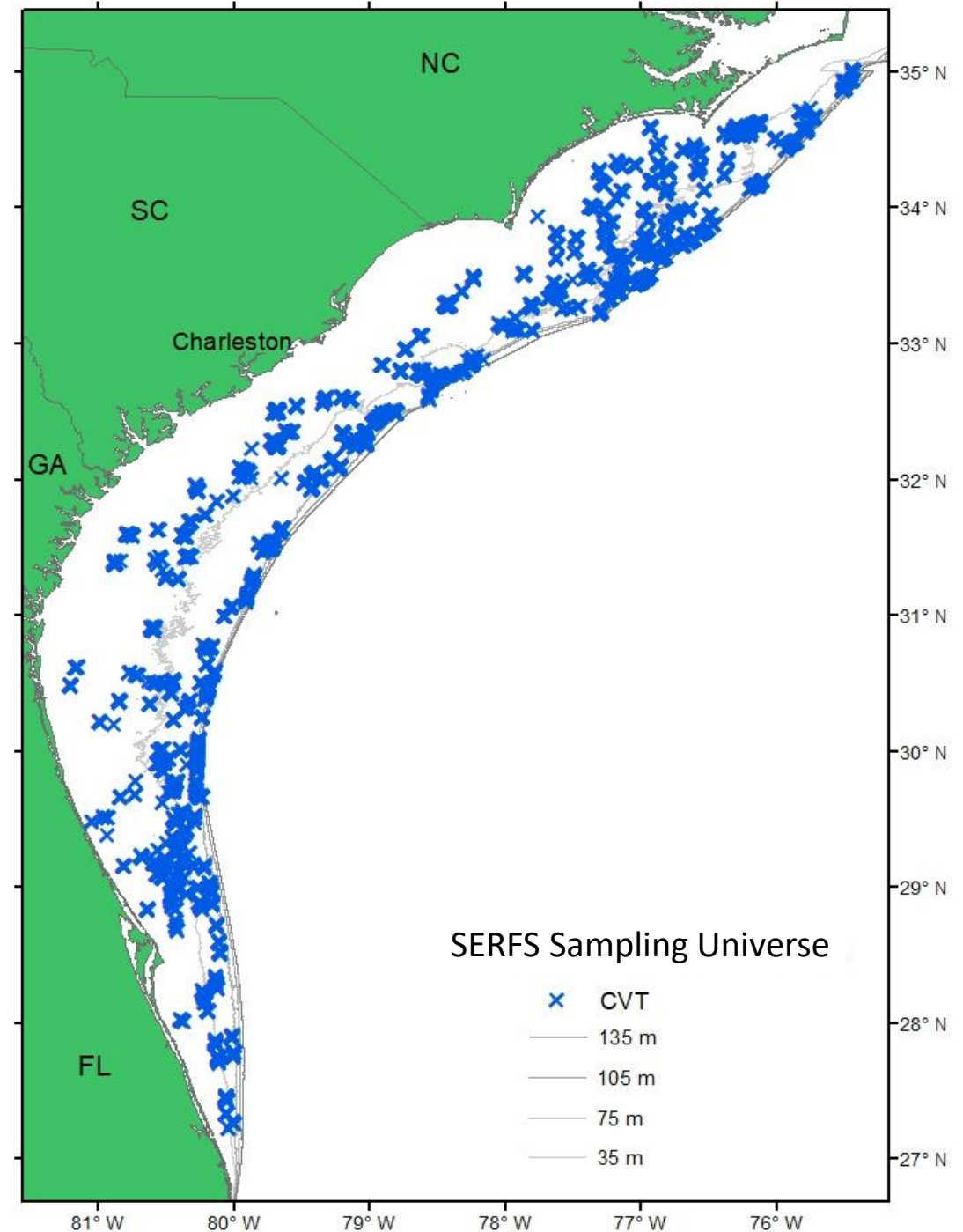
MARMAP/SEAMAP-SA (SCDNR):

- Catch indices
- Life history

SEFIS (SEFSC)

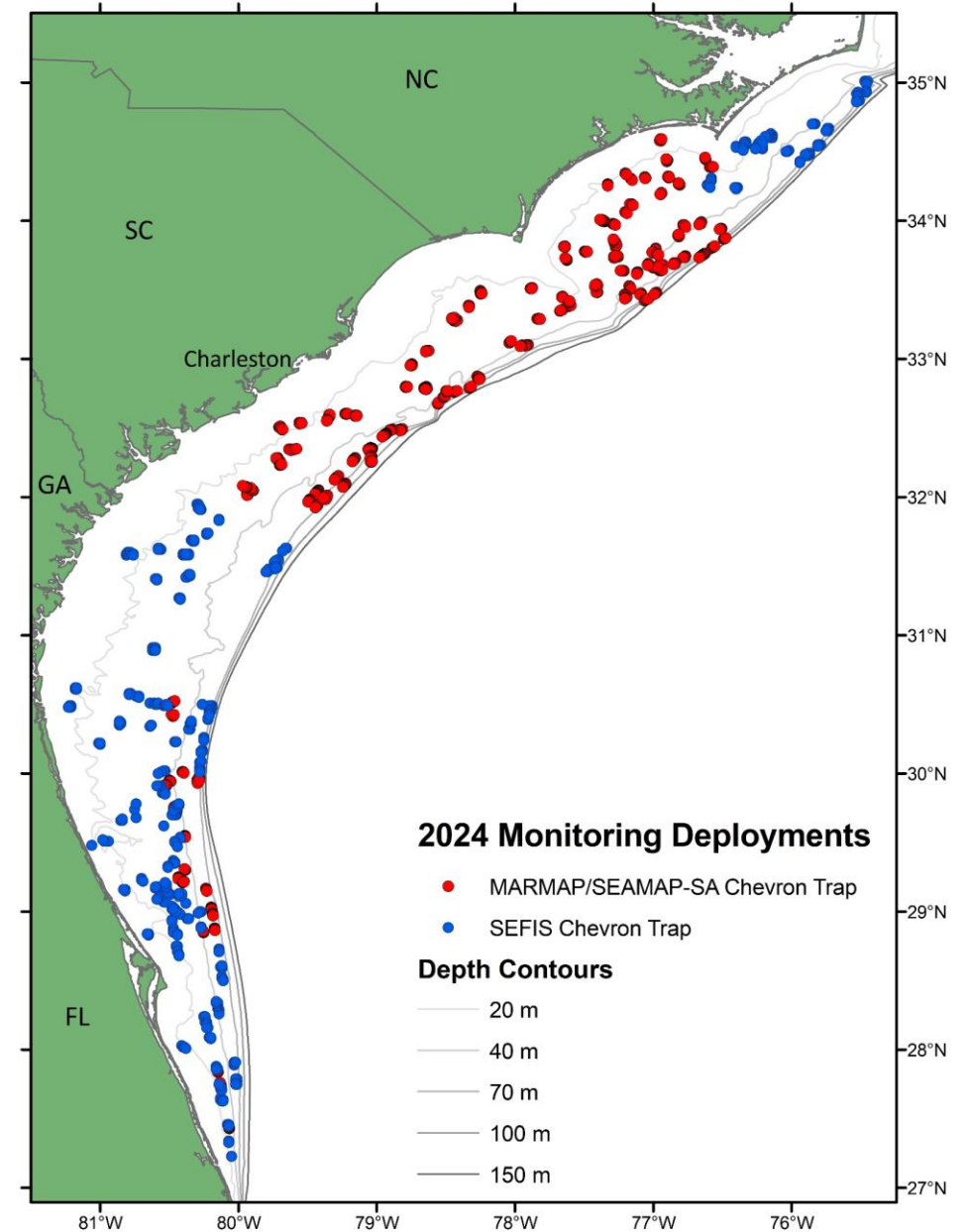
- Video indices

Publicly-available data SEAMAP.ORG



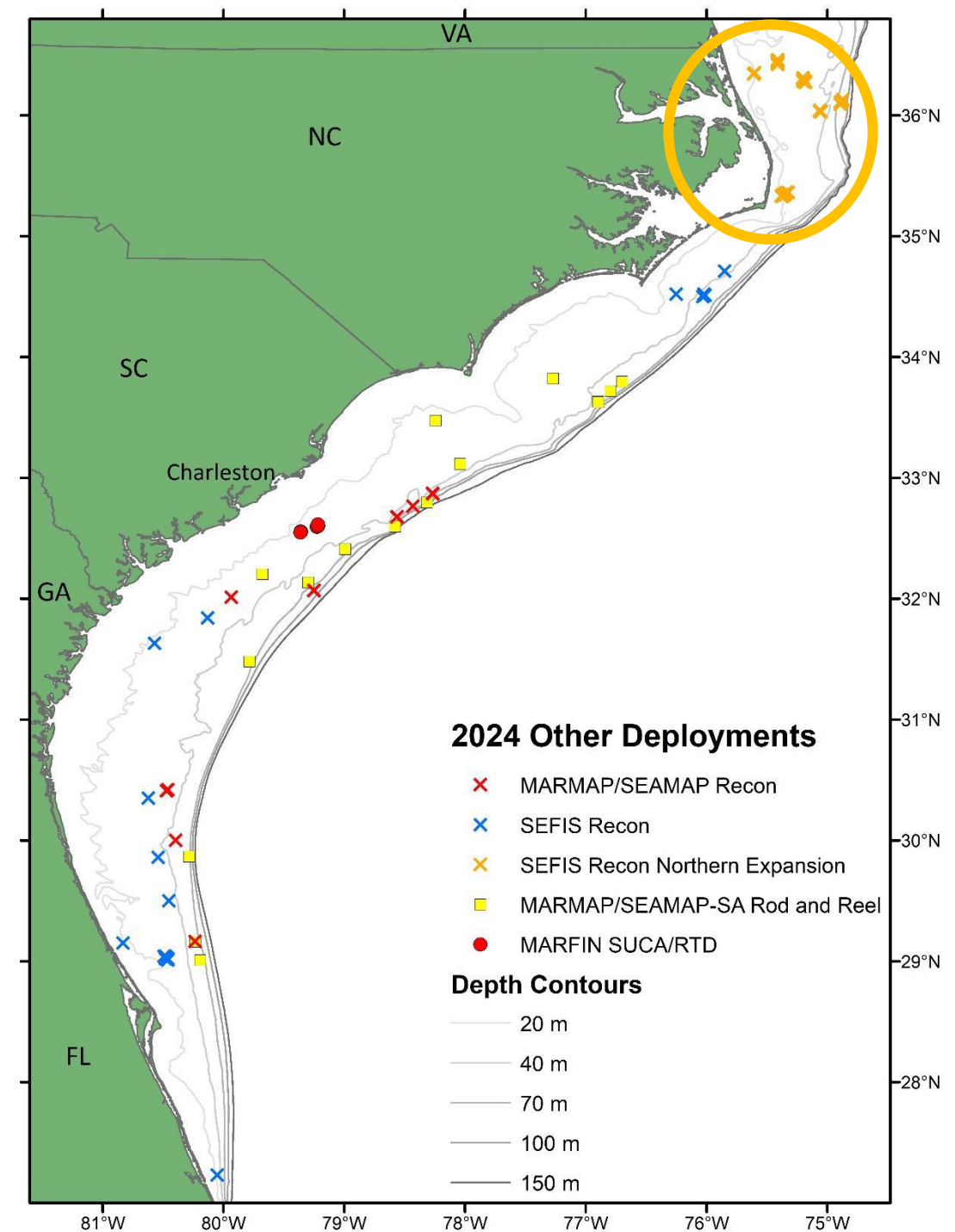
2024 SERFS Core Activities

- **79** days at sea (+ 20 mapping days)
 - **1,503** CVTs
 - **234** CTD casts
- **CVTs = 25,476** fish (~**80** species) collected, measured, weighed
- **5,984** fish (~**30** species) retained for life history (age, reproduction, DNA)



2024 SERFS Supplemental Activities

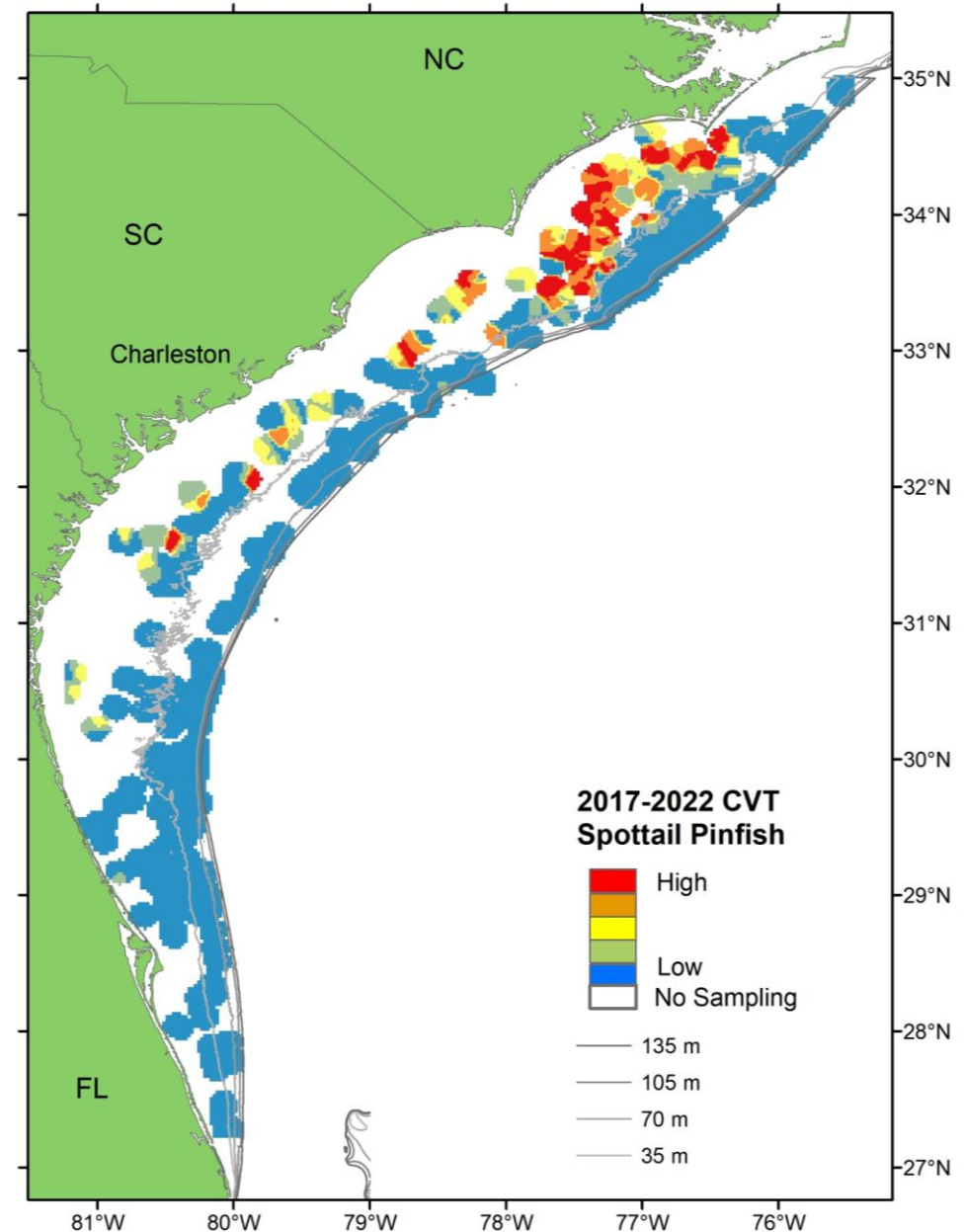
- Northern Expansion
- Stereo Cameras for Selectivity Study



SERFS Data Products

CVT Distributions- Example

- Only CVT catch
- Catch abundance in quintiles (5 bins)
 - # fish / trap hour
- 5 most recent years: 2019 & 2021-2024
- Cooler colors => lower nominal abundance
- Warmer colors => higher nominal abundance
- White => no sampling



SERFS Data Products:

CVT Relative Abundance Indices

- Catch index (1990-2024)
- Video index (2011-2023)
- No sampling in 2020 (COVID-19)
- Standardized using Zero-Inflated Negative Binomial model (ZINB)

Catch:

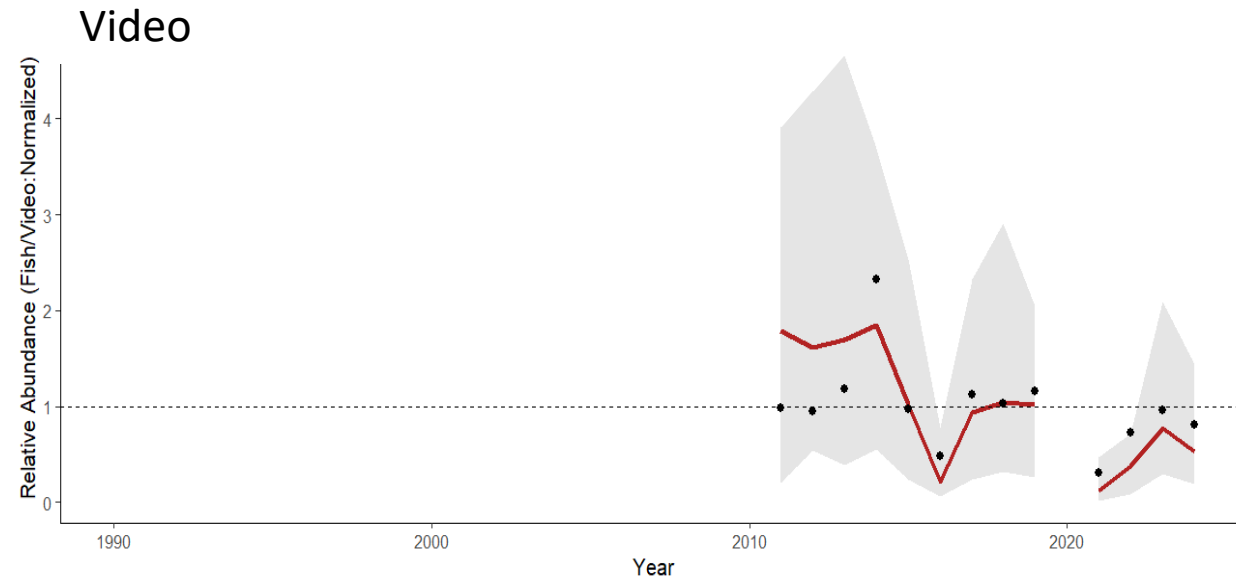
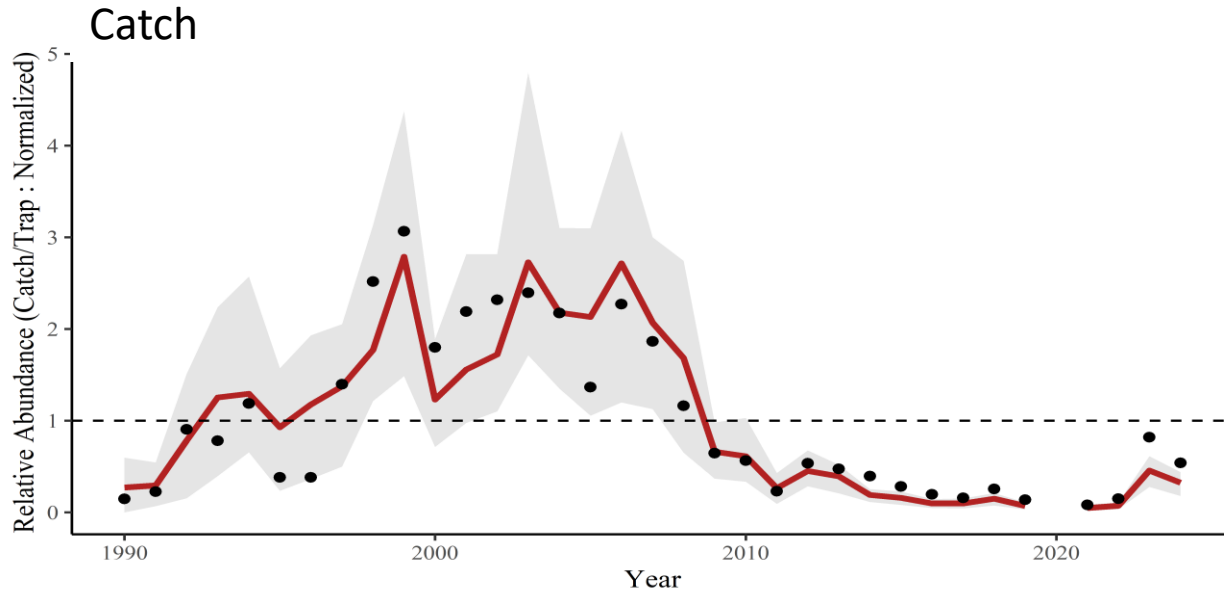
- Number of fish
- Trap soak time

Video:

- SumCount
- 10 min after trap lands on bottom
- One frame every 30 s for 20 min



CVT Indices- Example

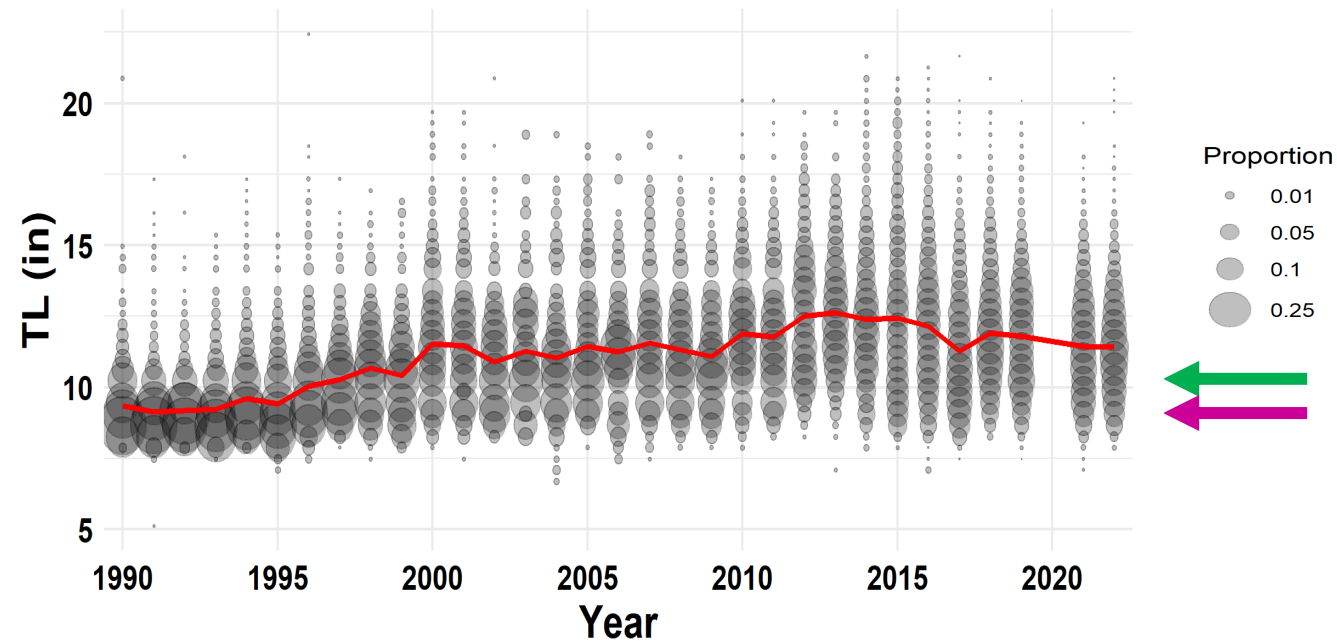


Gear	ZINB Index	95% C.I.	Nominal Values
CHV	Red Line	Gray Shading	Black Dots
Video	Red Line	Gray Shading	Black Dots

Normalized to long-term average
(dashed line at 1)

- 2 = twice long-term average
- 0.5 = half long-term average

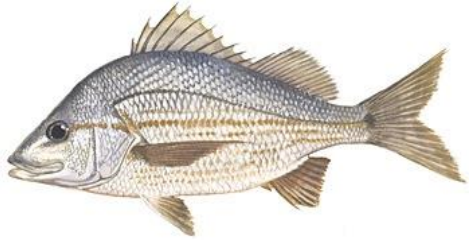
SERFS Data Products: CVT Length Compositions- Example



- Catch Only
- Maximum (Pinched) Total Length (in)
- 1-in Length Bins
- Bubble size = # fish in length bin / # fish measured in a year
- Red Line = Average TL
- Green Arrow = Commercial MSL
- Pink Arrow = TL at 50% Maturity, Female
- "Missing" length bins in some graphs are result of converting between FL & TL and rounding

Selected Species

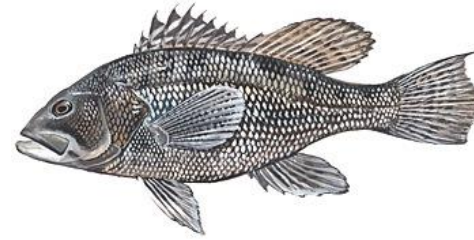
2024 CVT Catch Rankings



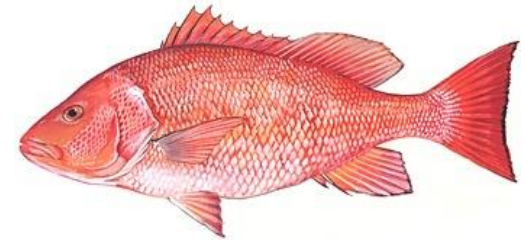
1. Tomtate*



2. Vermilion Snapper



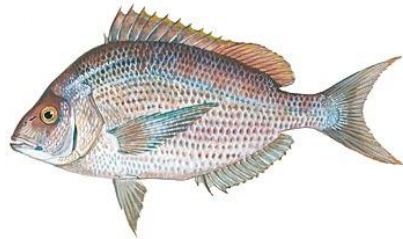
3. Black Sea Bass



4. Red Snapper



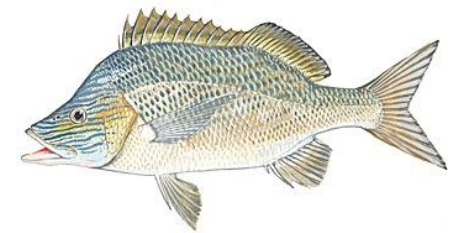
5. Gray Triggerfish



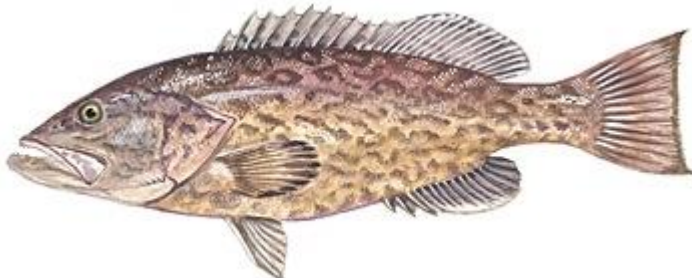
6. *Stenotomus* spp.*



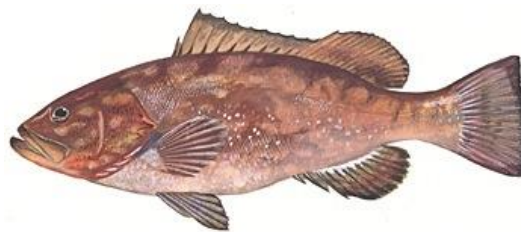
7. Red Porgy



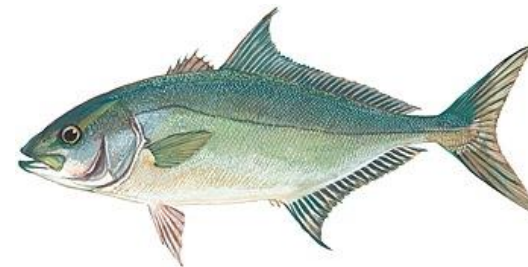
9. White Grunt



16. Gag



17. Red Grouper



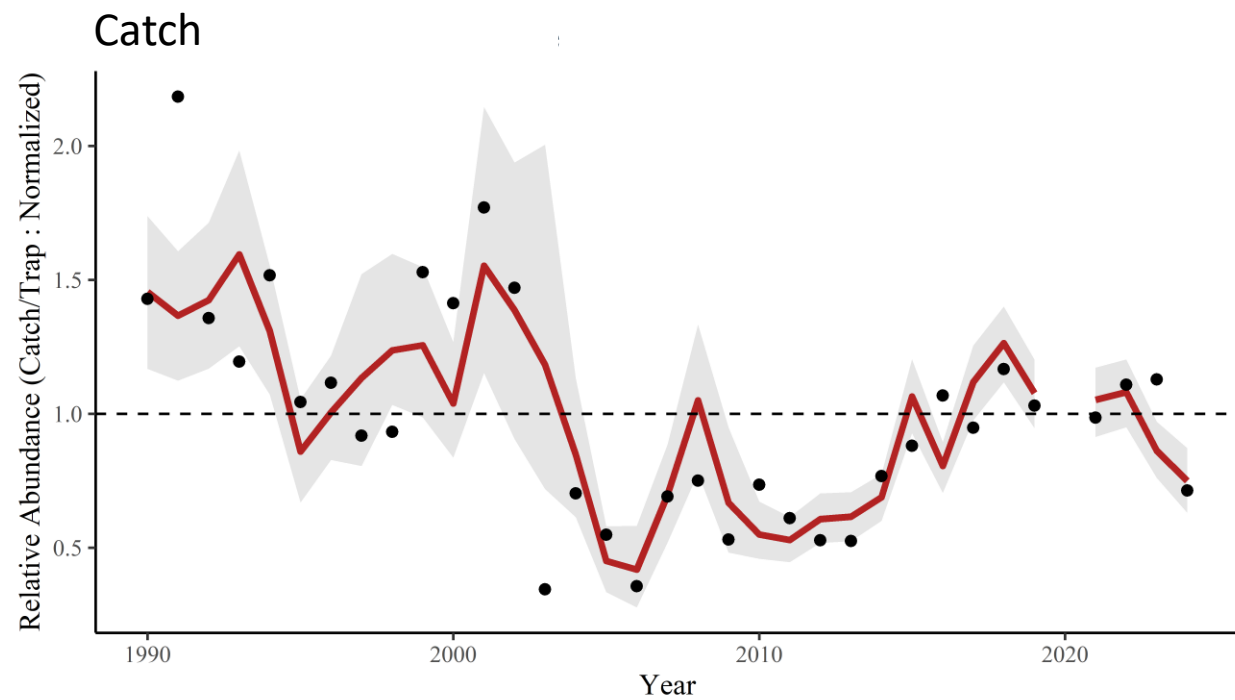
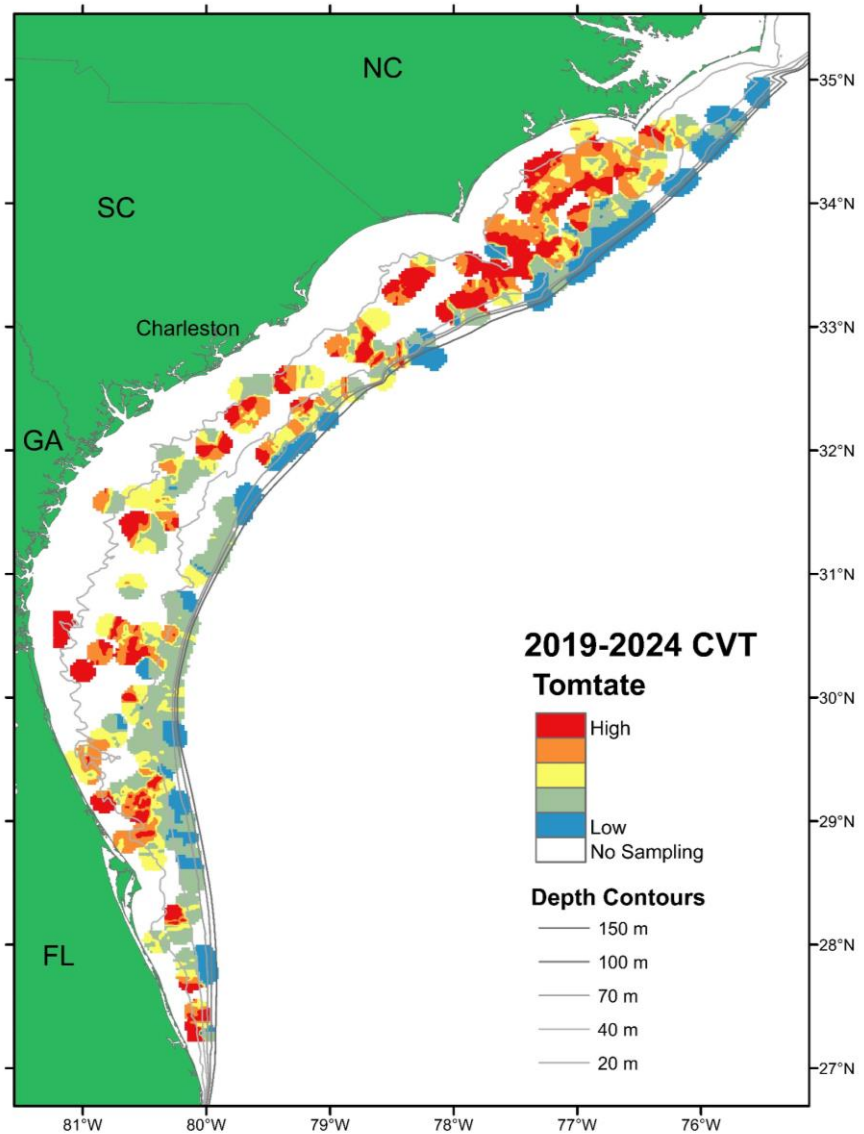
19. Almaco Jack



21. Scamp

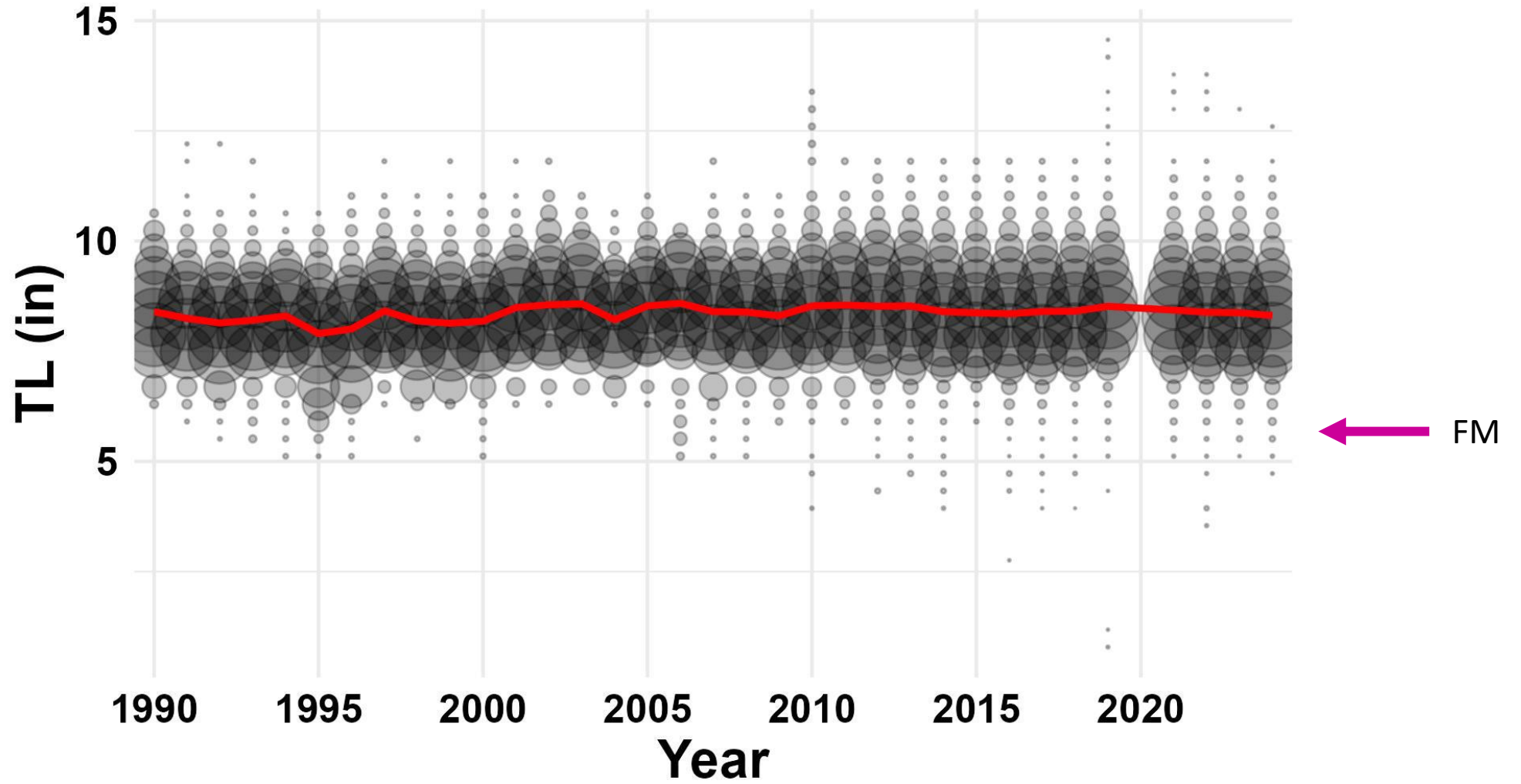


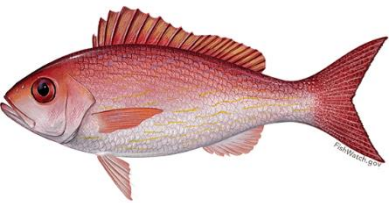
Tomtate



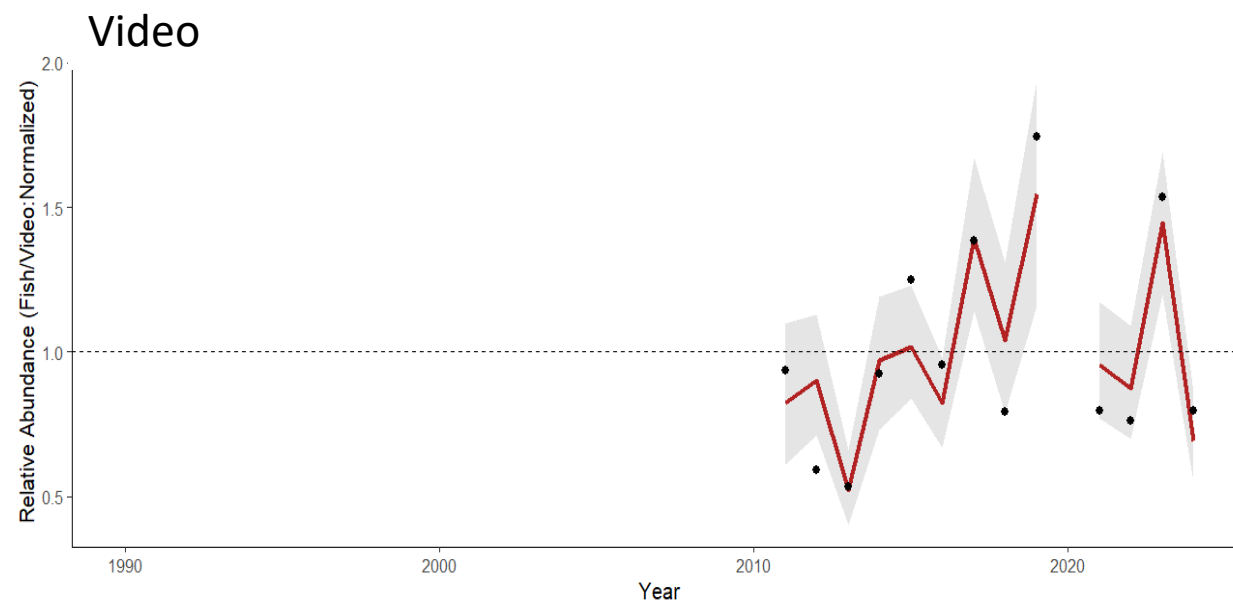
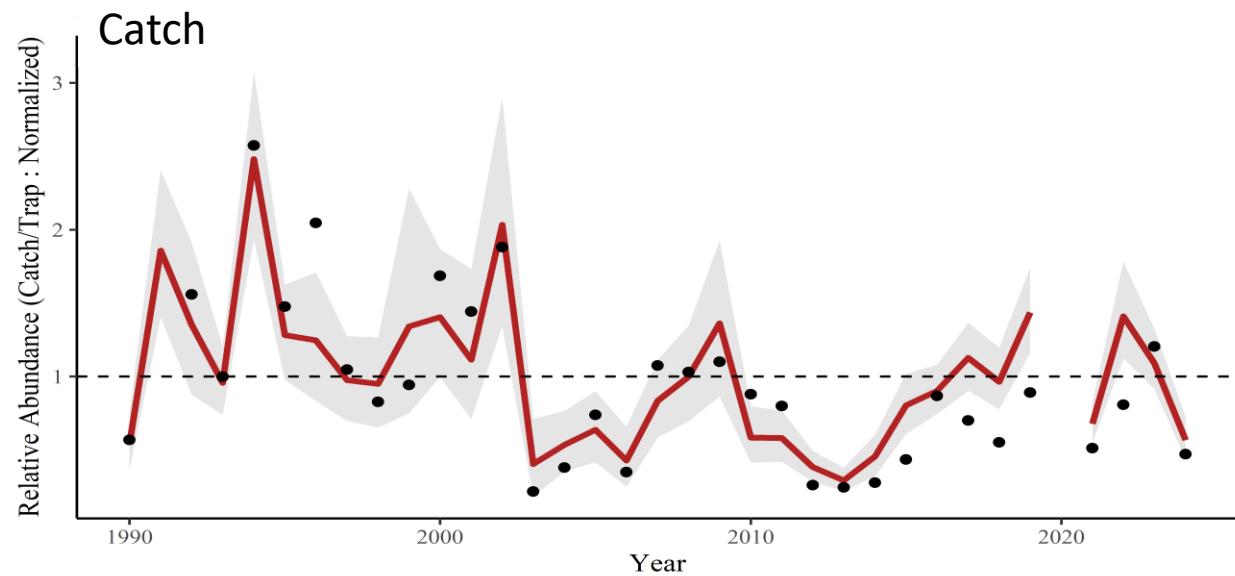
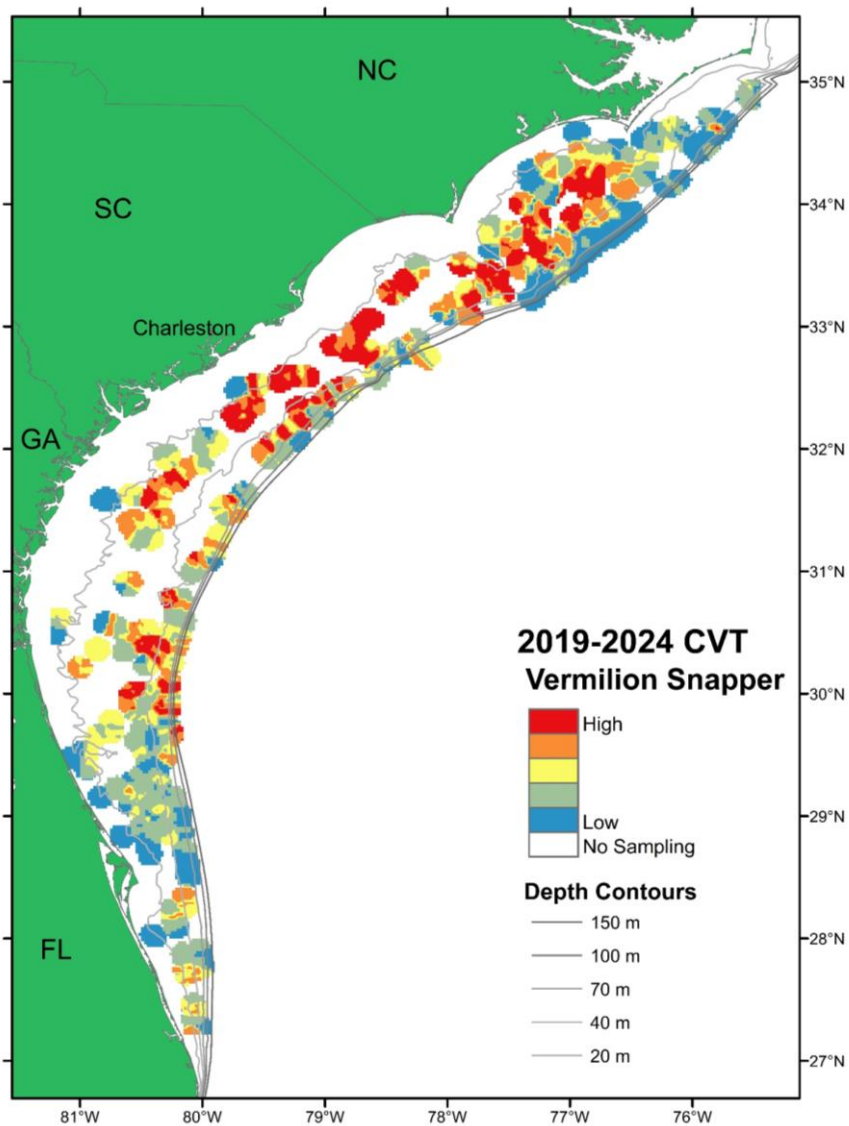


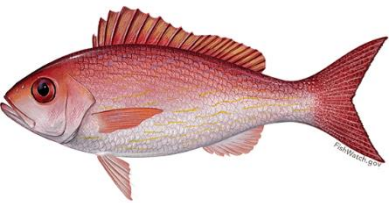
Tomtate



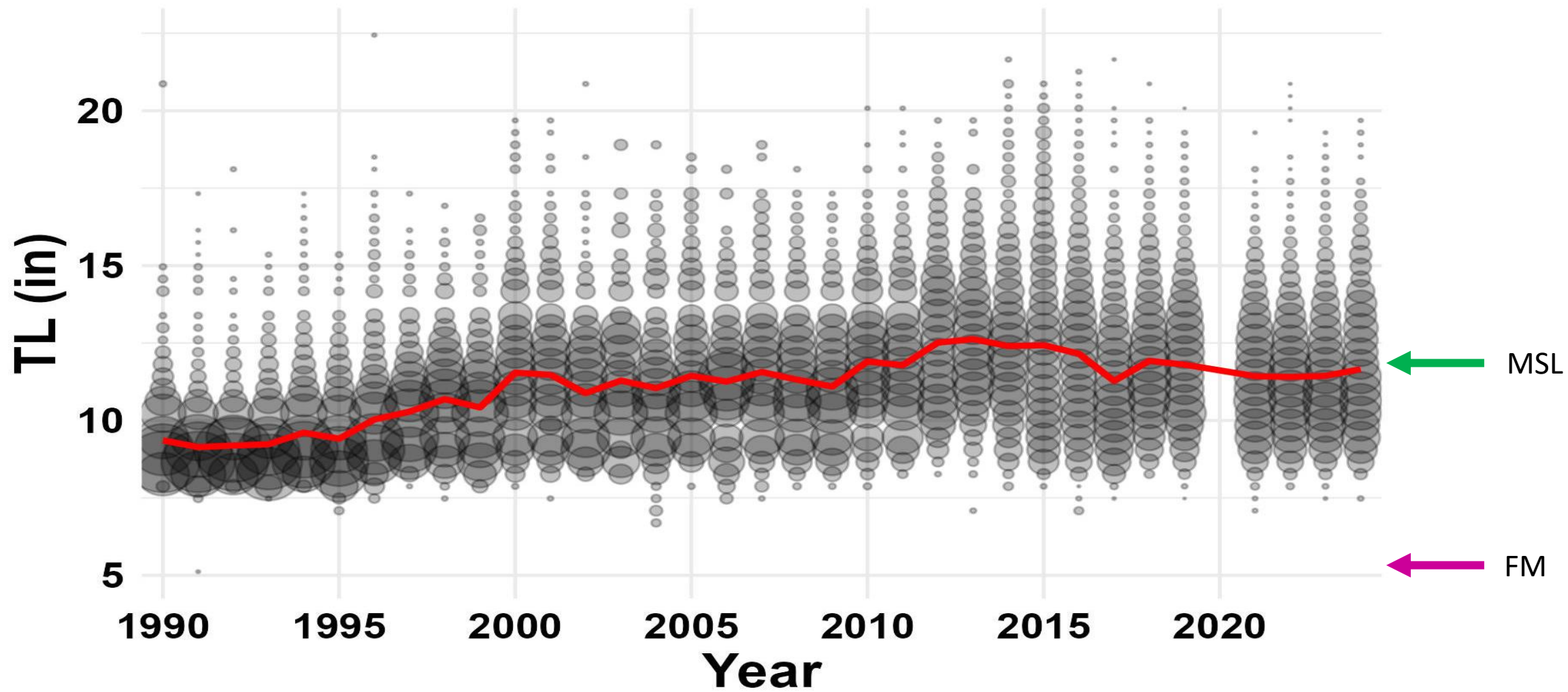


Vermilion Snapper



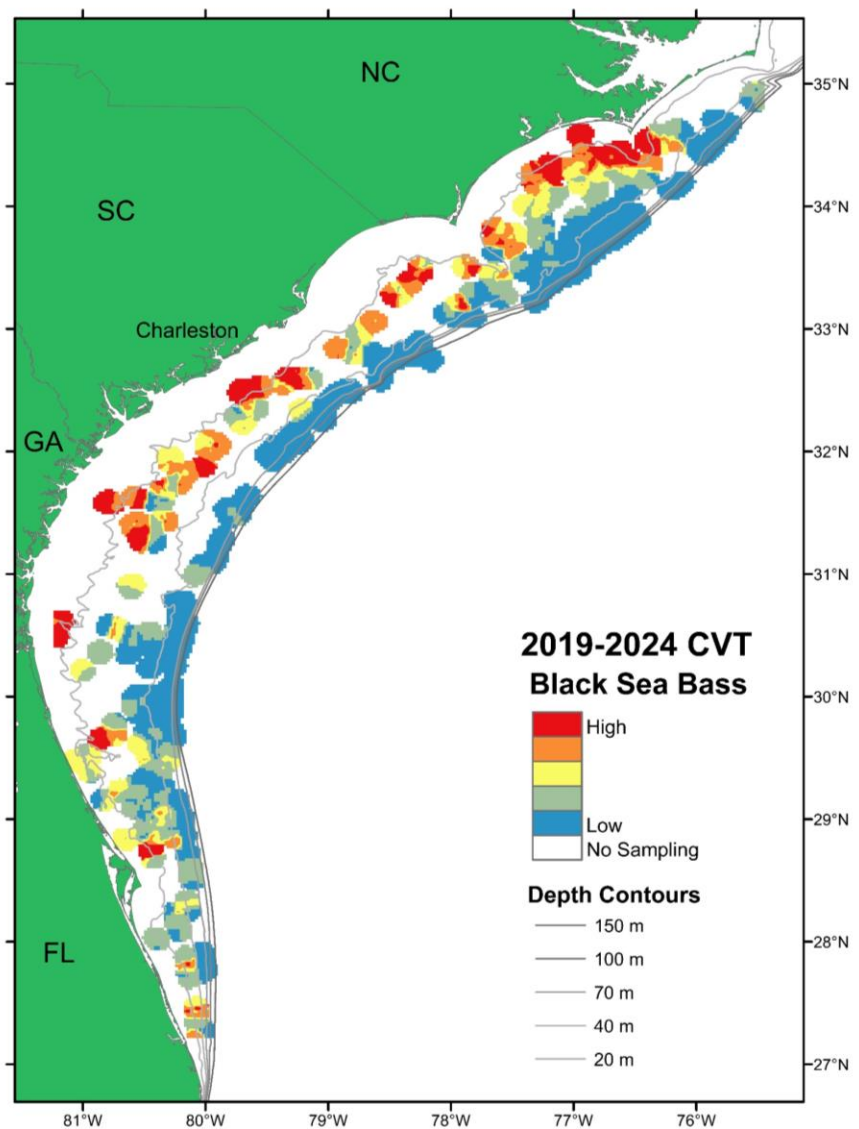


Vermilion Snapper

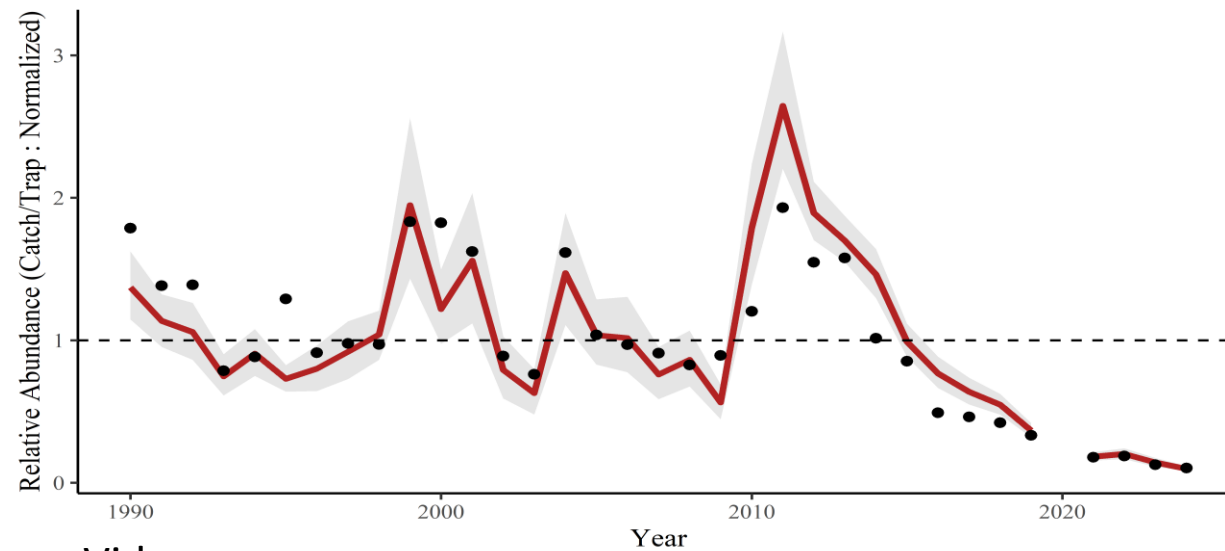




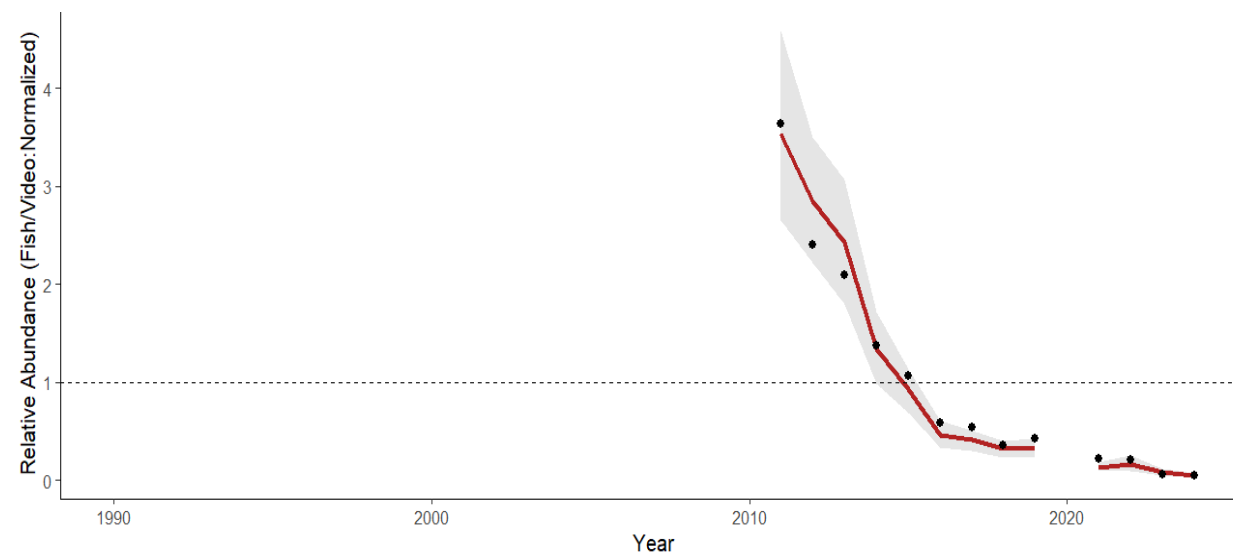
Black Sea Bass



Catch

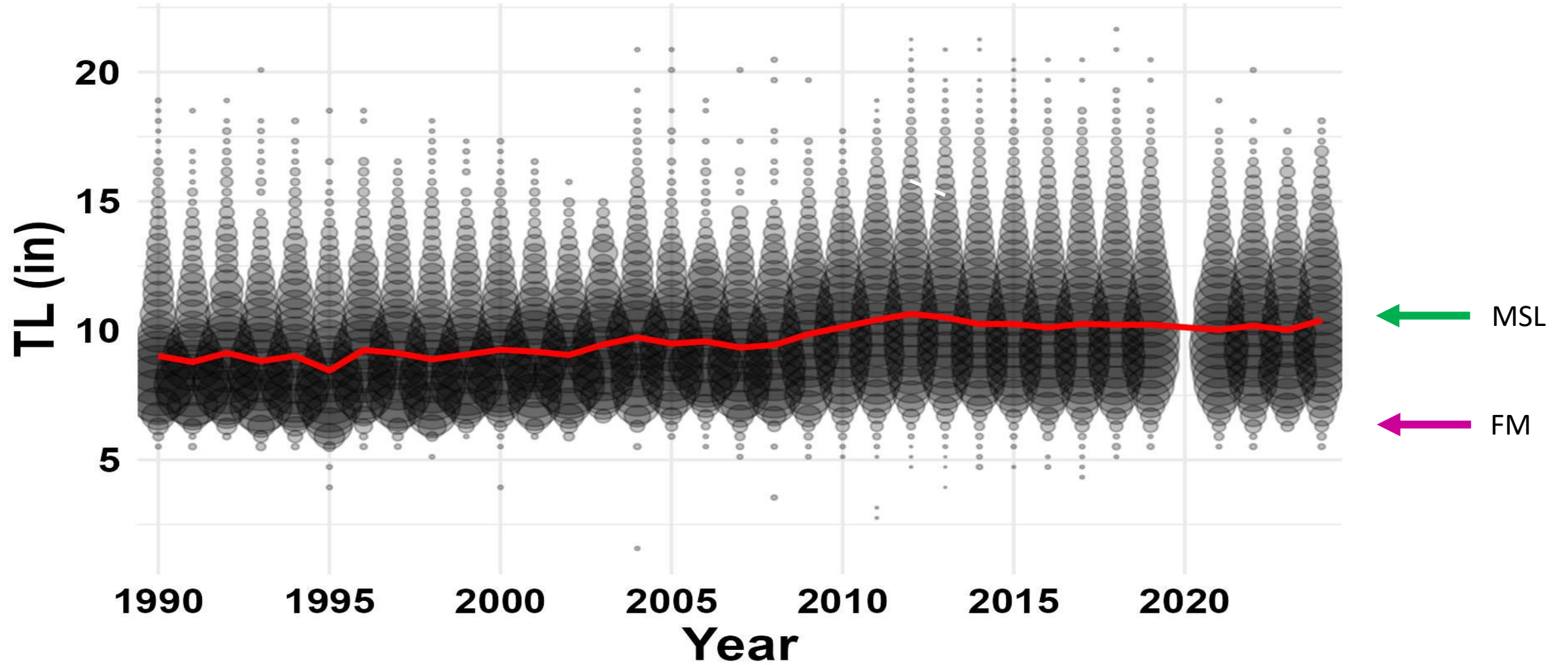


Video



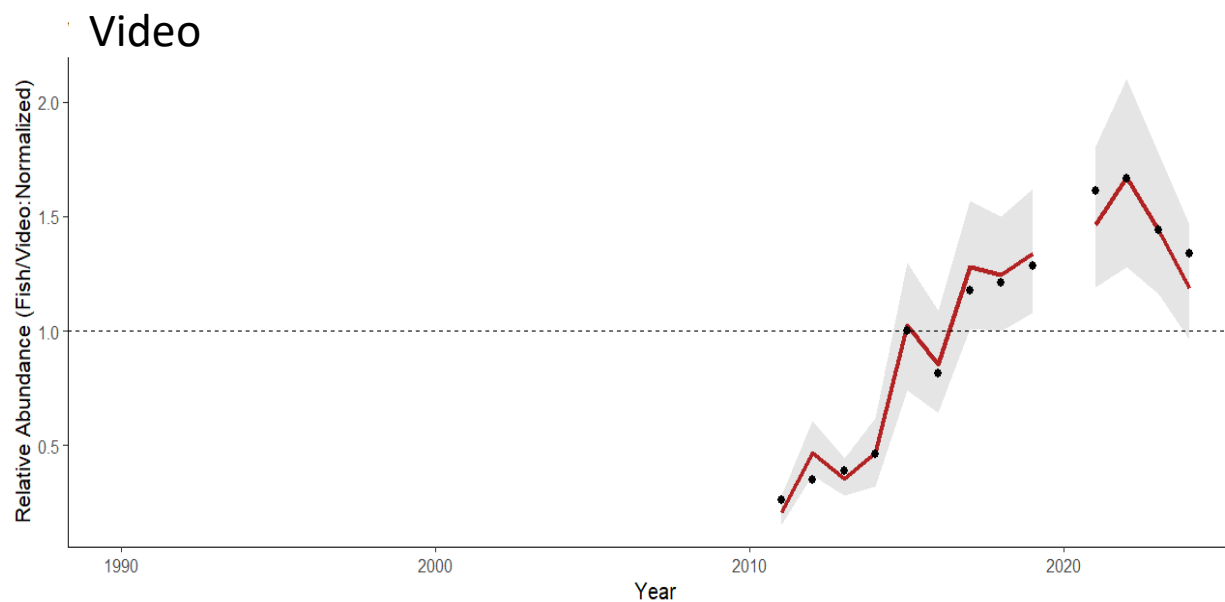
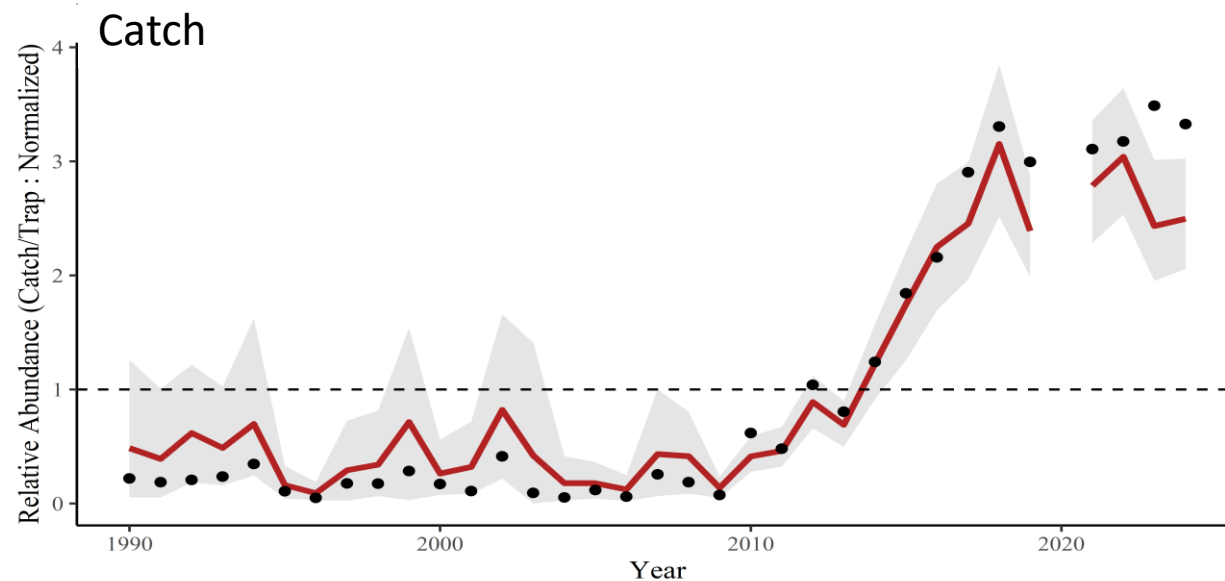
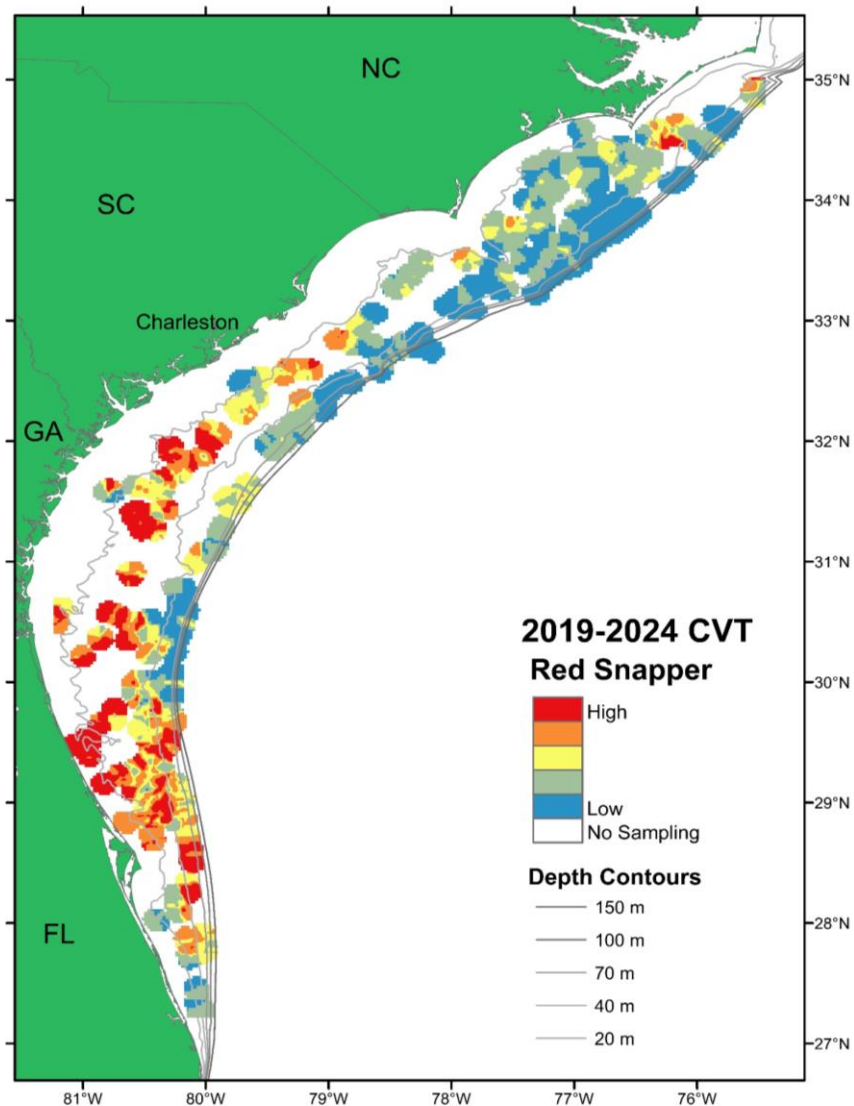


Black Sea Bass



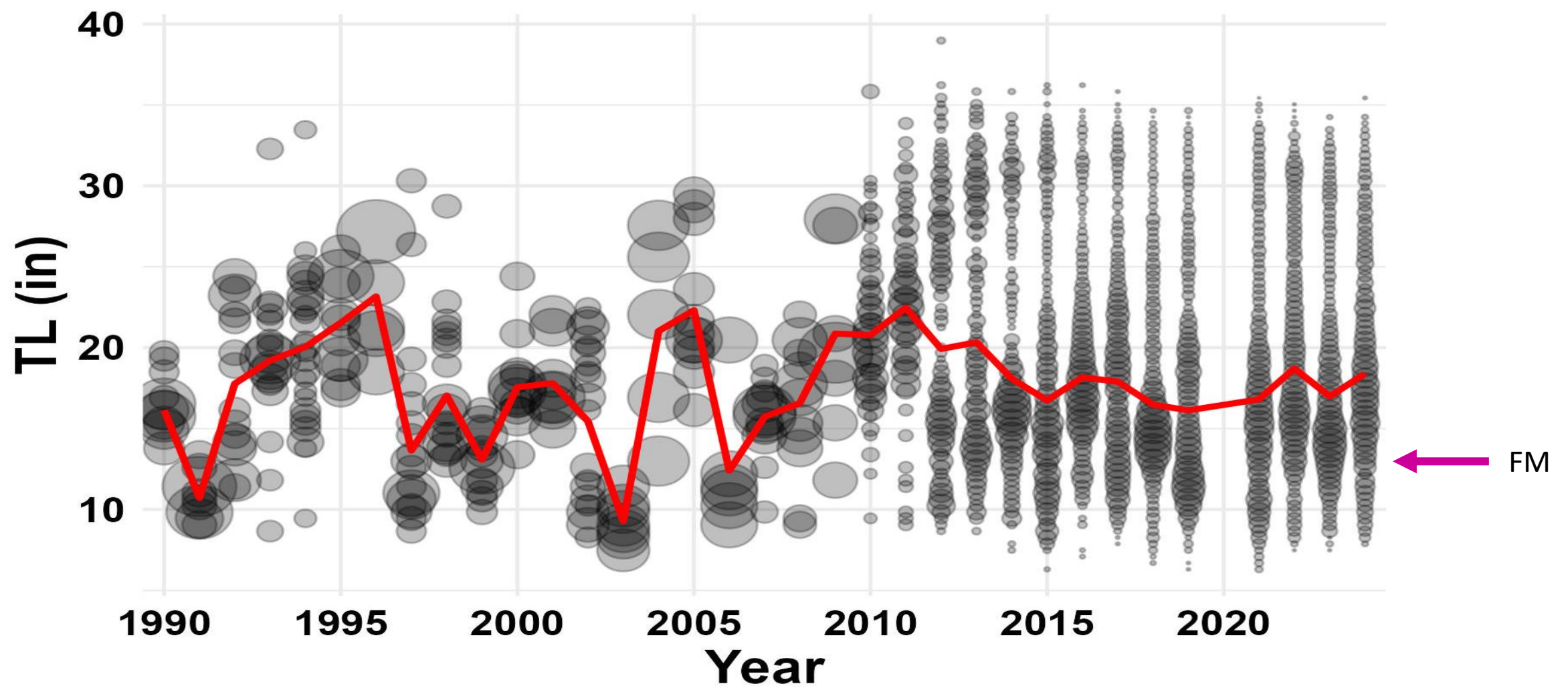


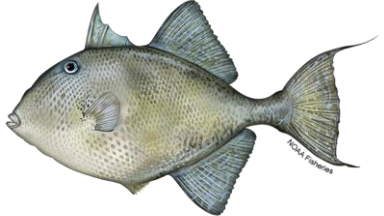
Red Snapper



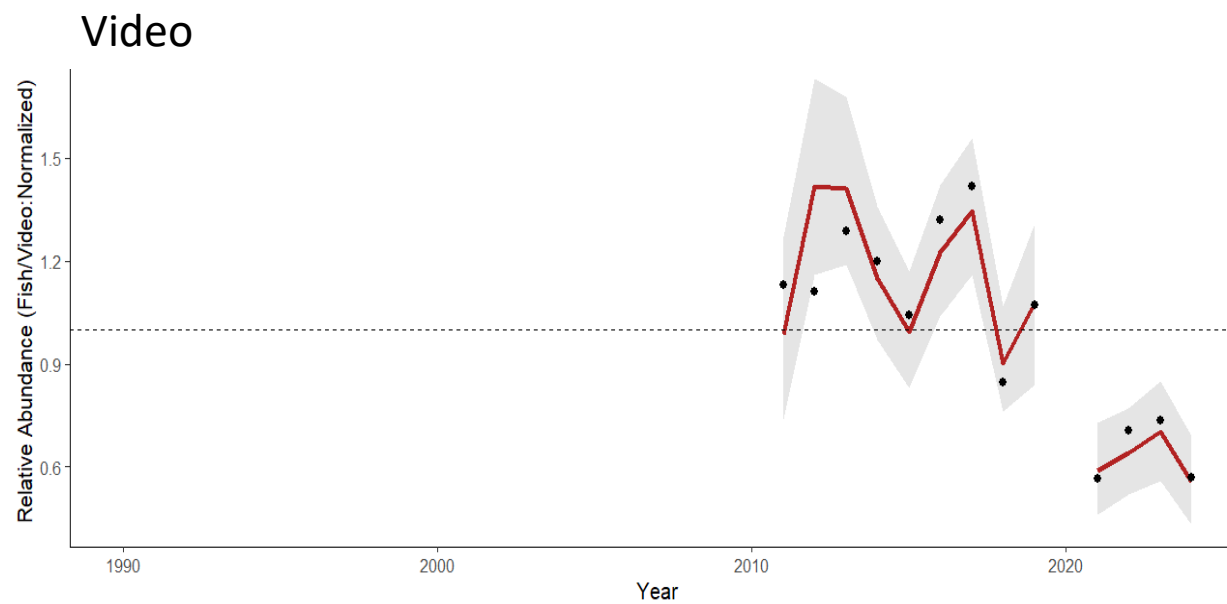
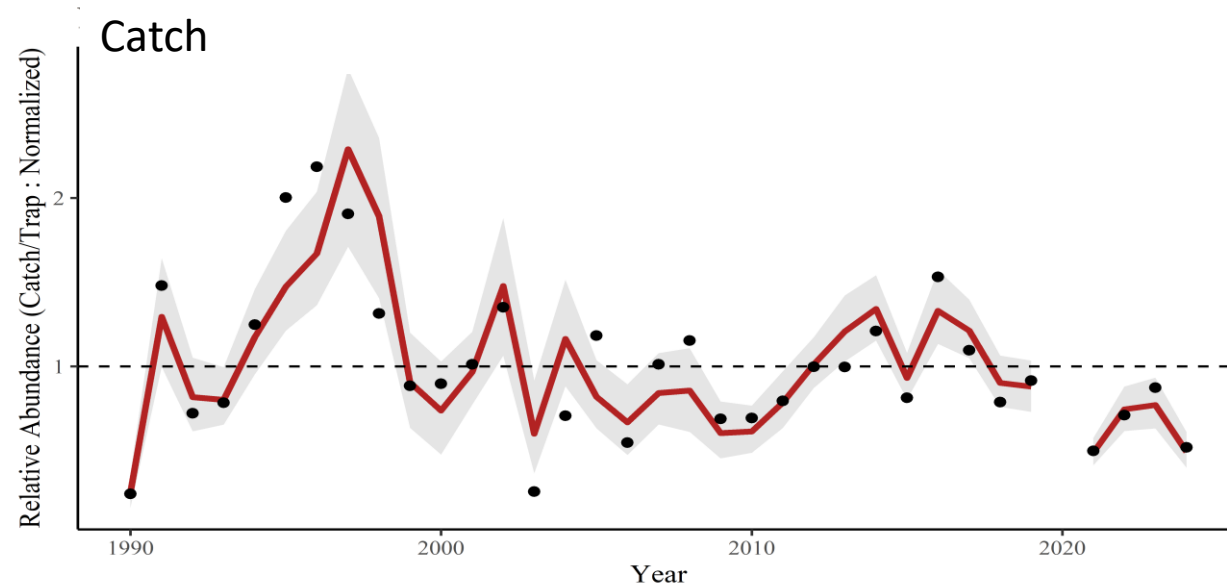
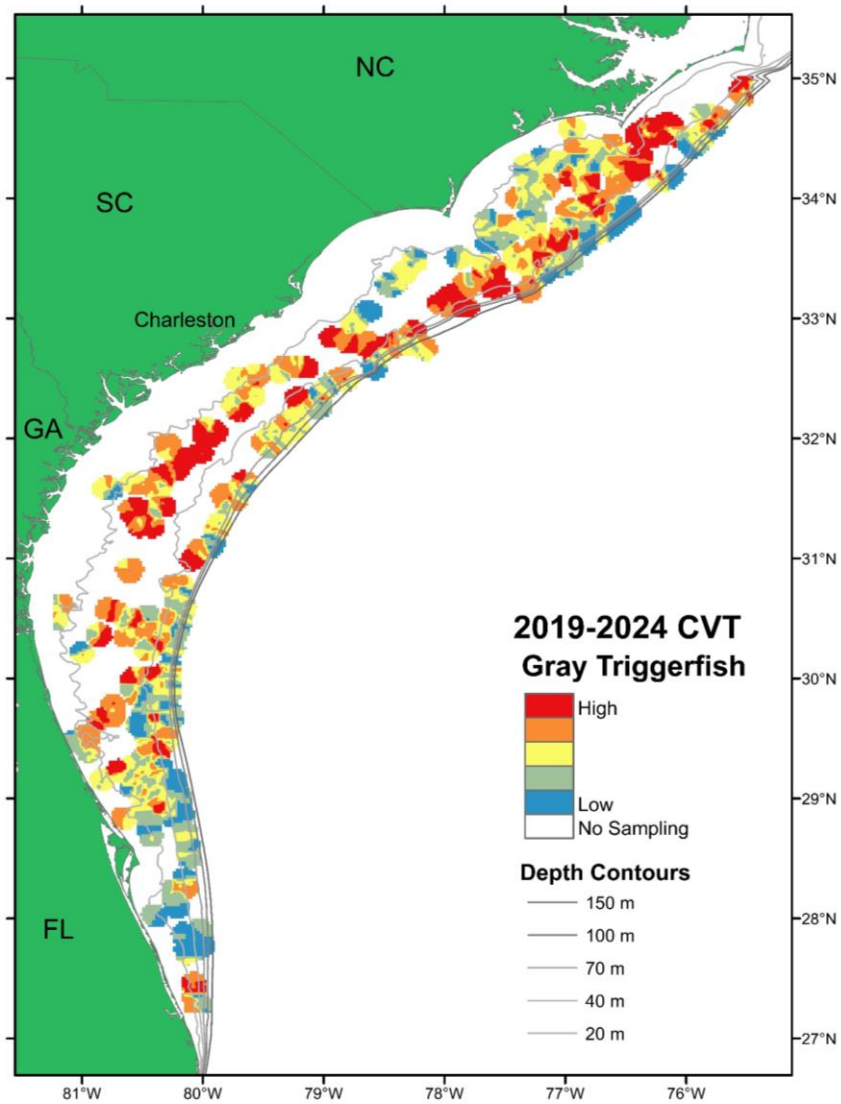


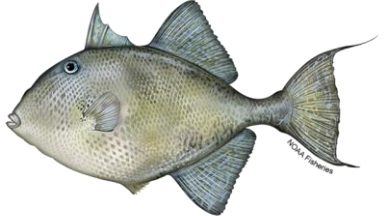
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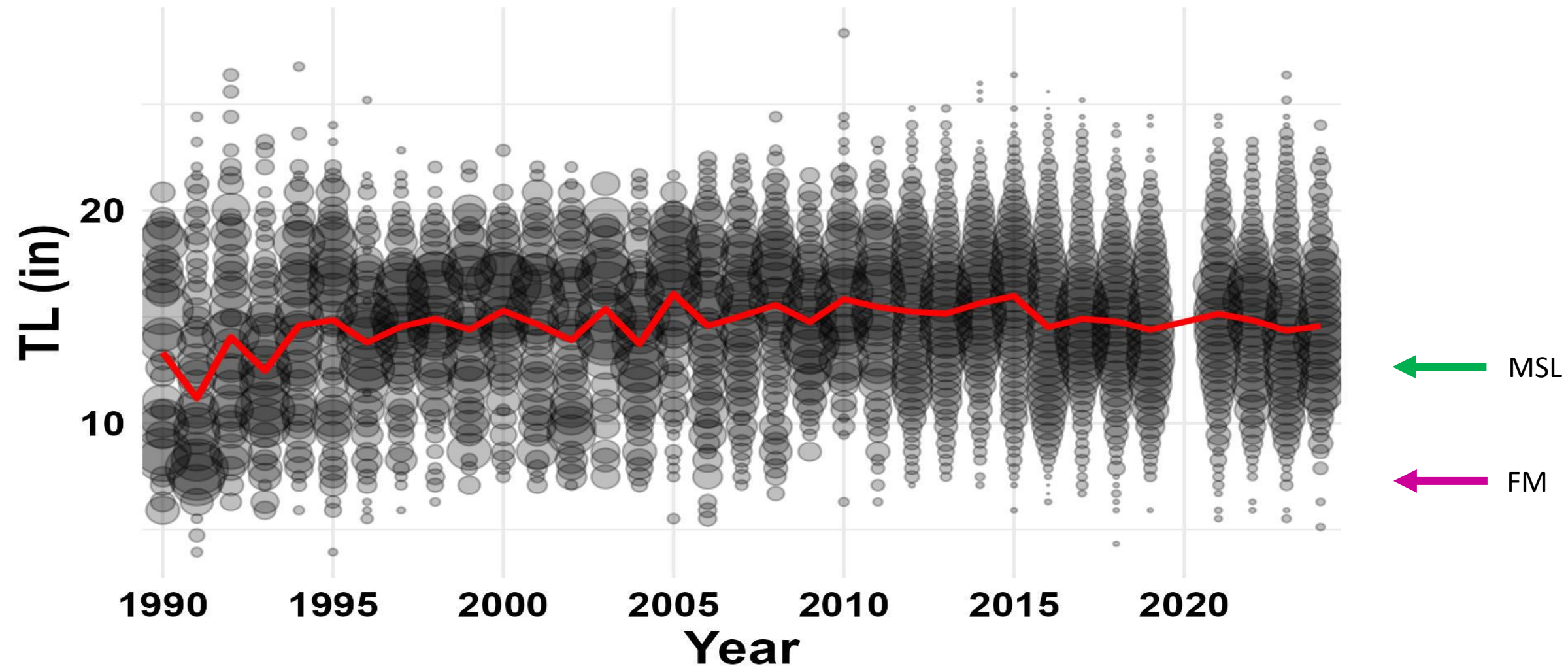


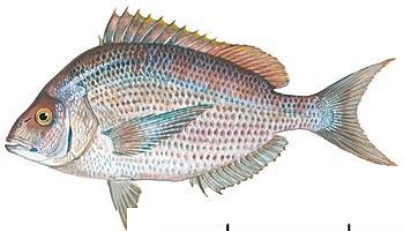
Gray Triggerfish



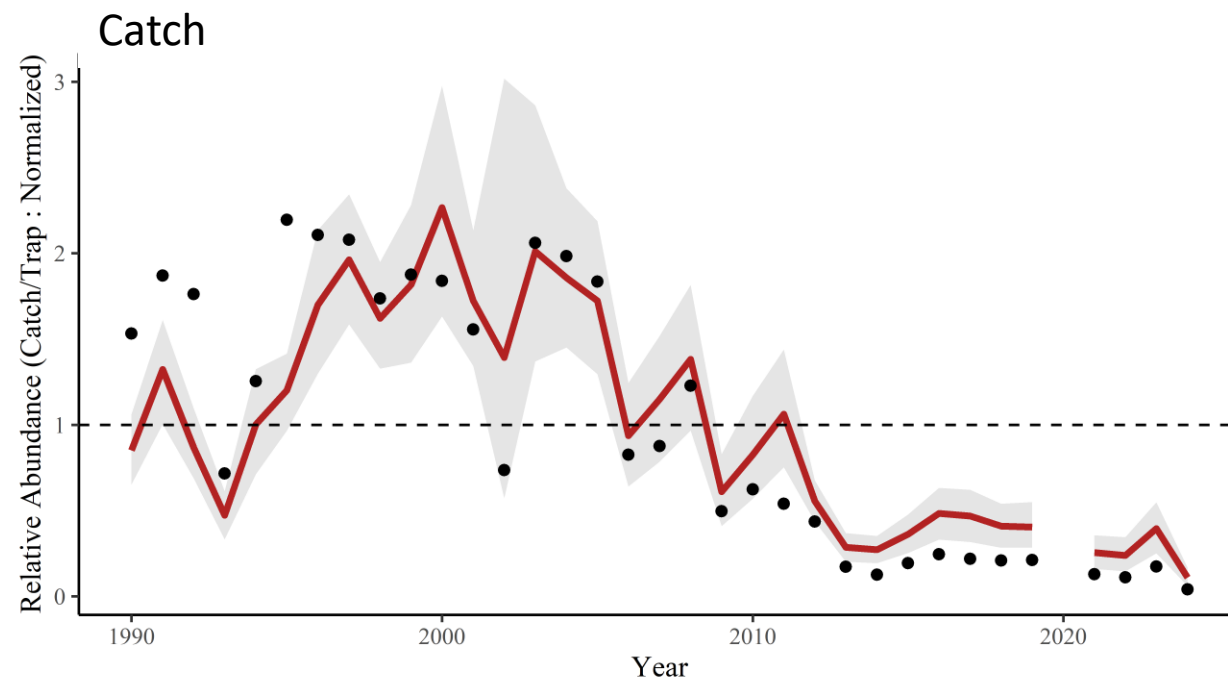
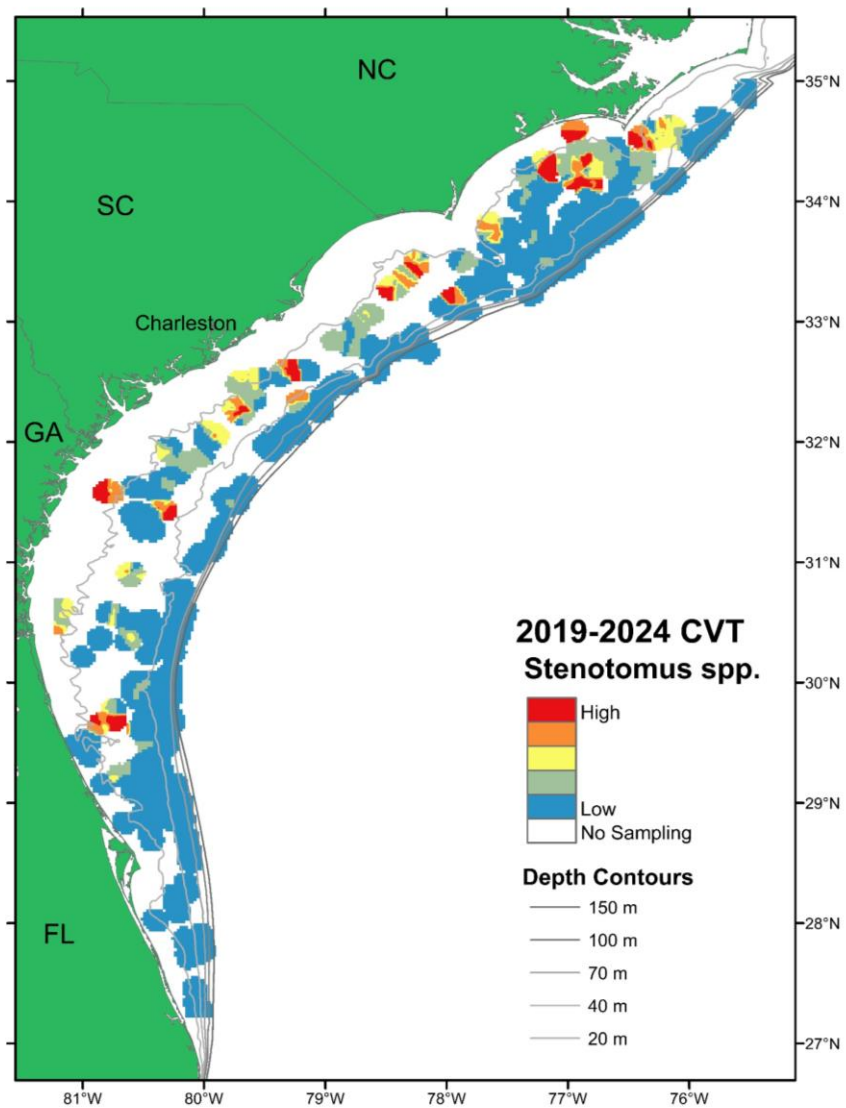


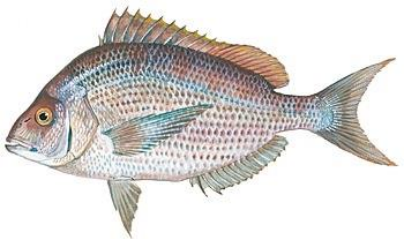
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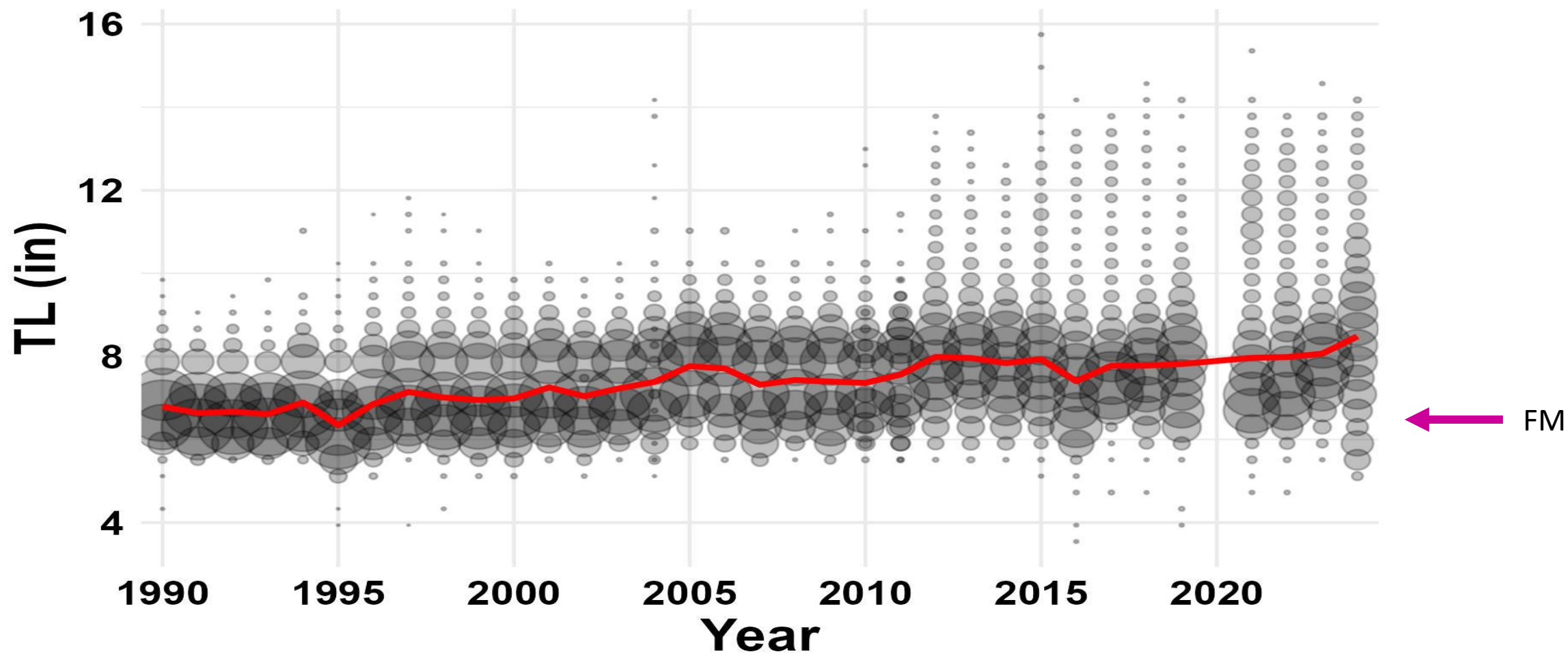


Stenotomus spp.



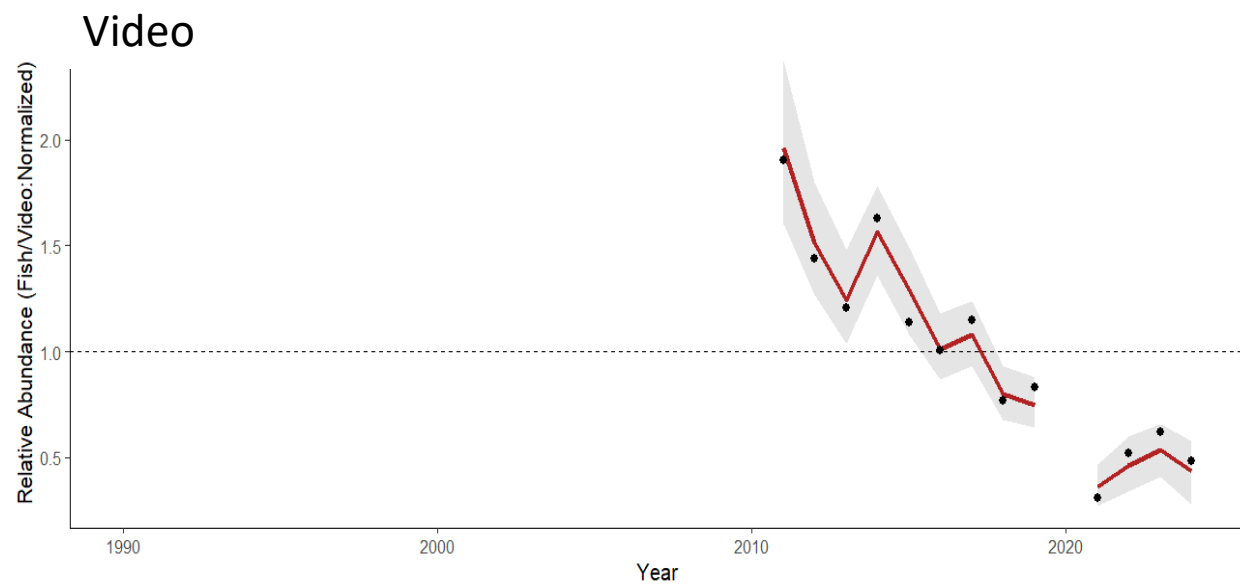
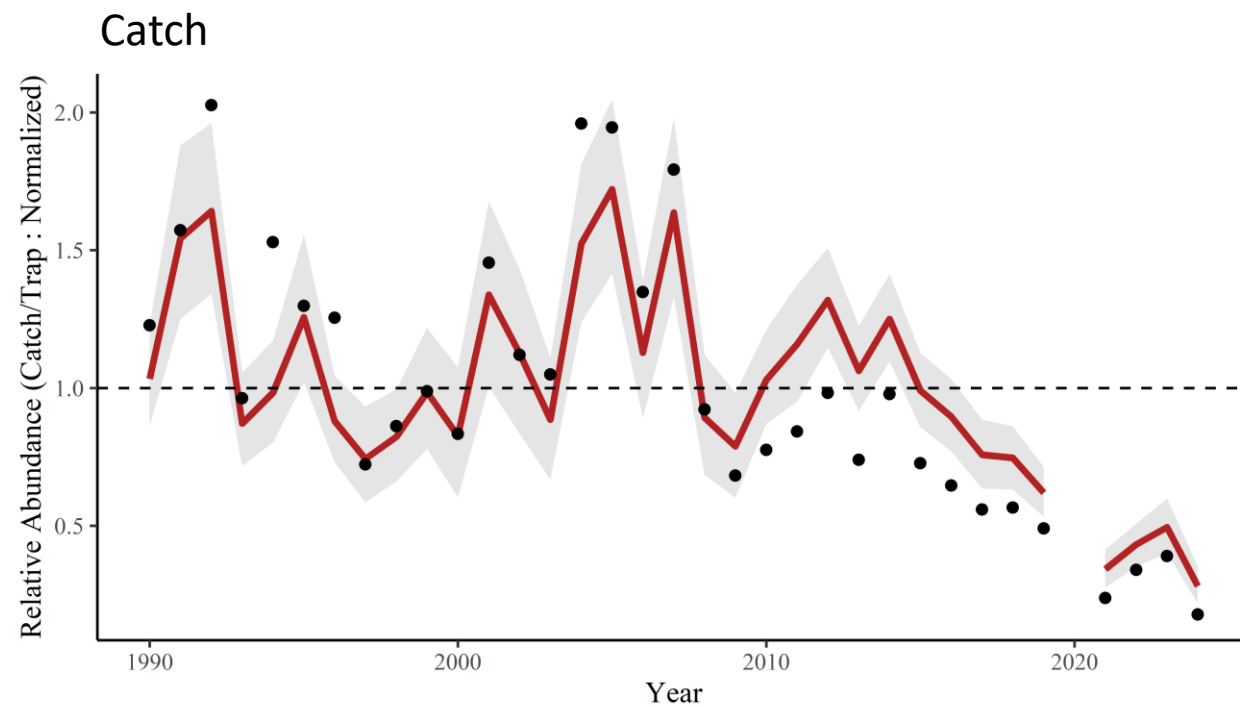
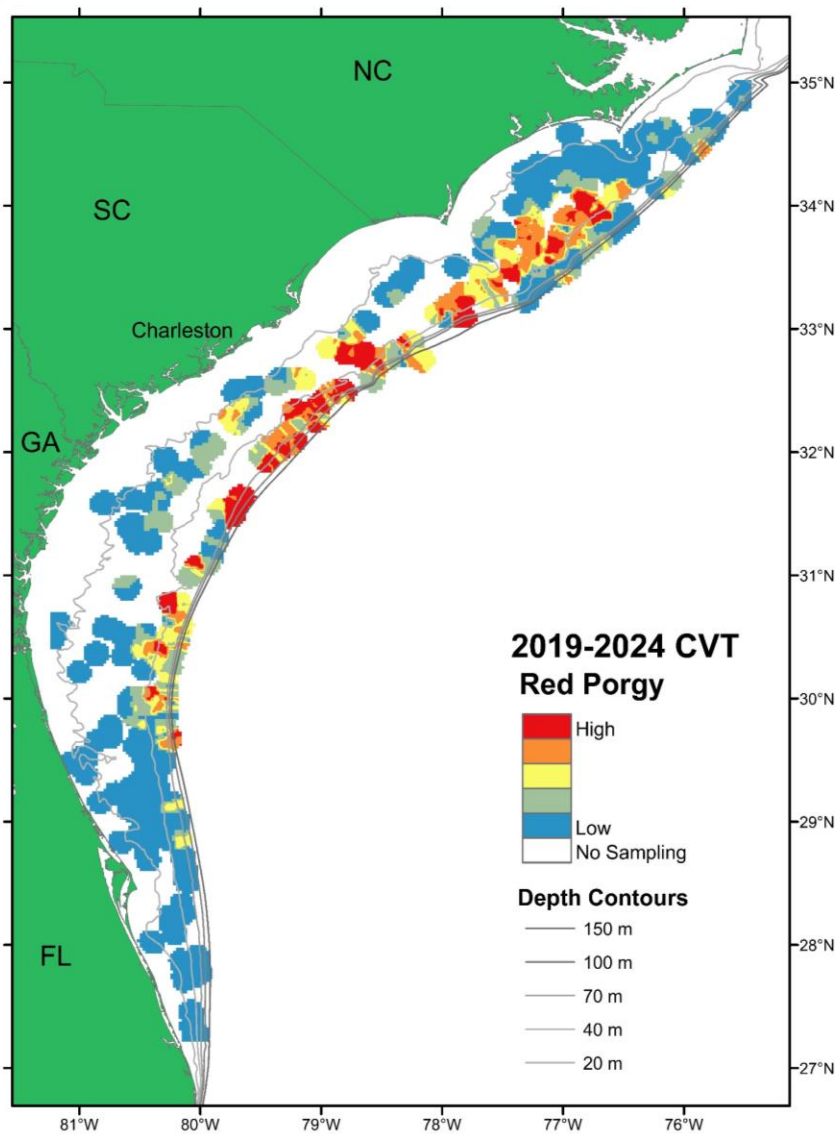


Stenotomus spp.



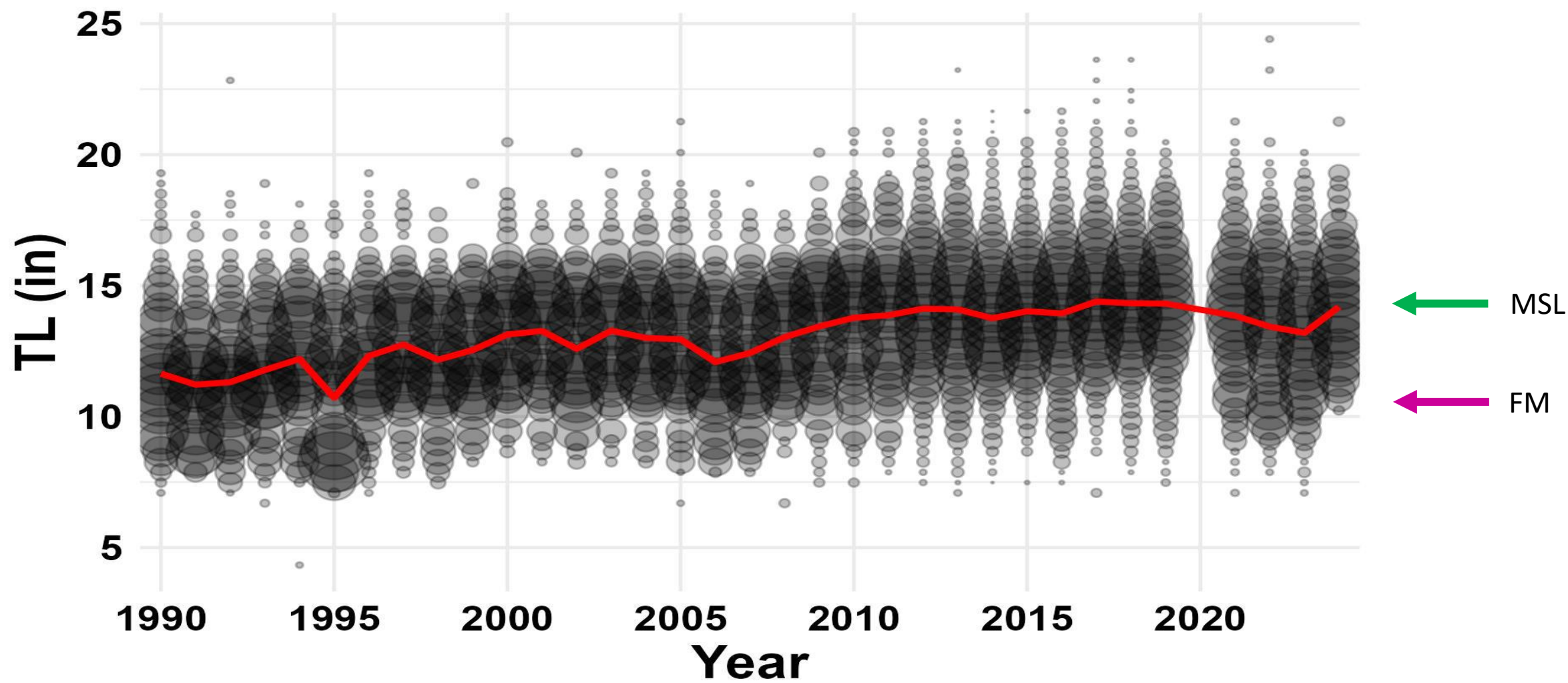


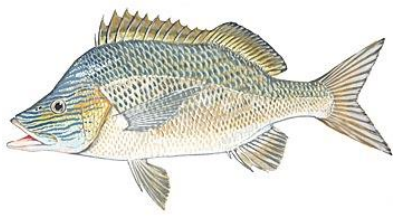
Red Porgy



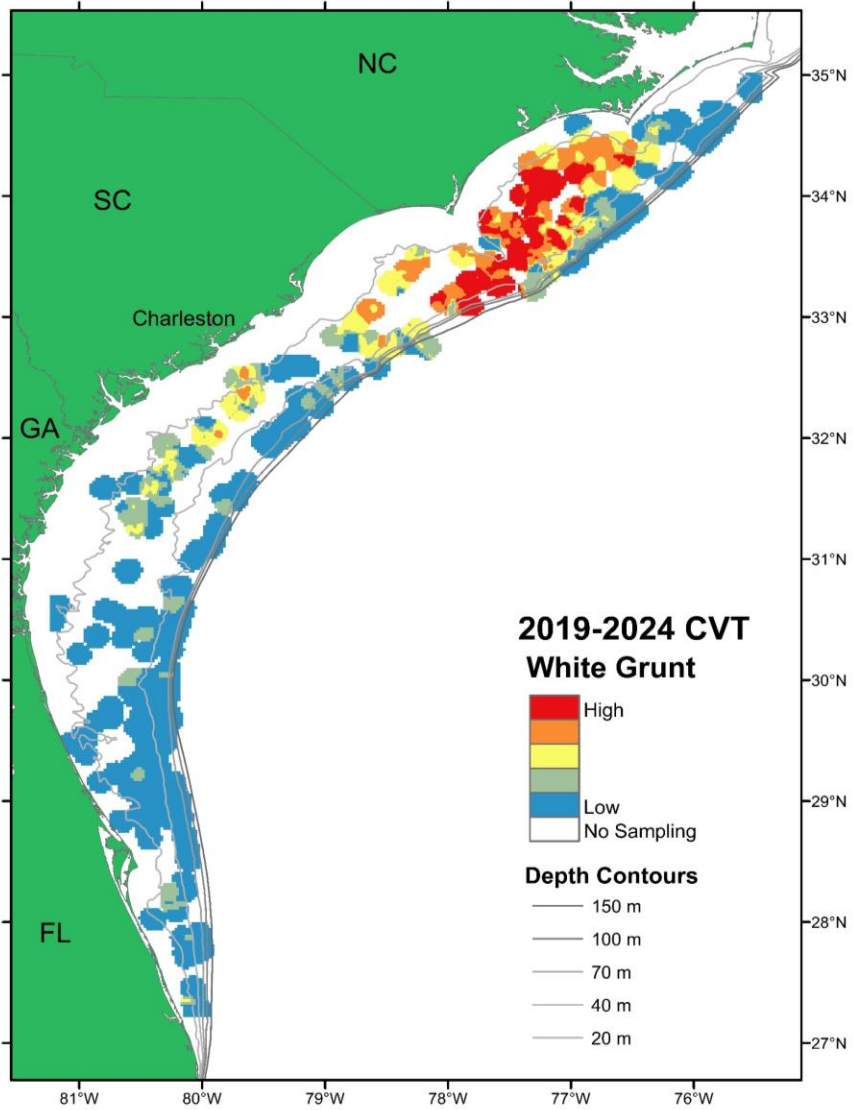


Red Porgy

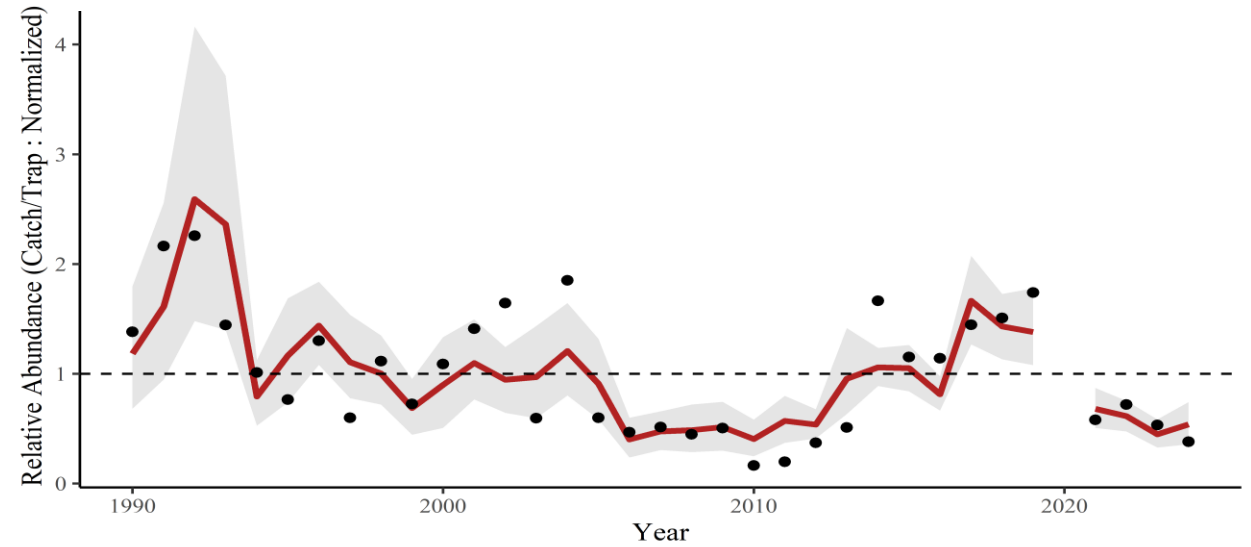




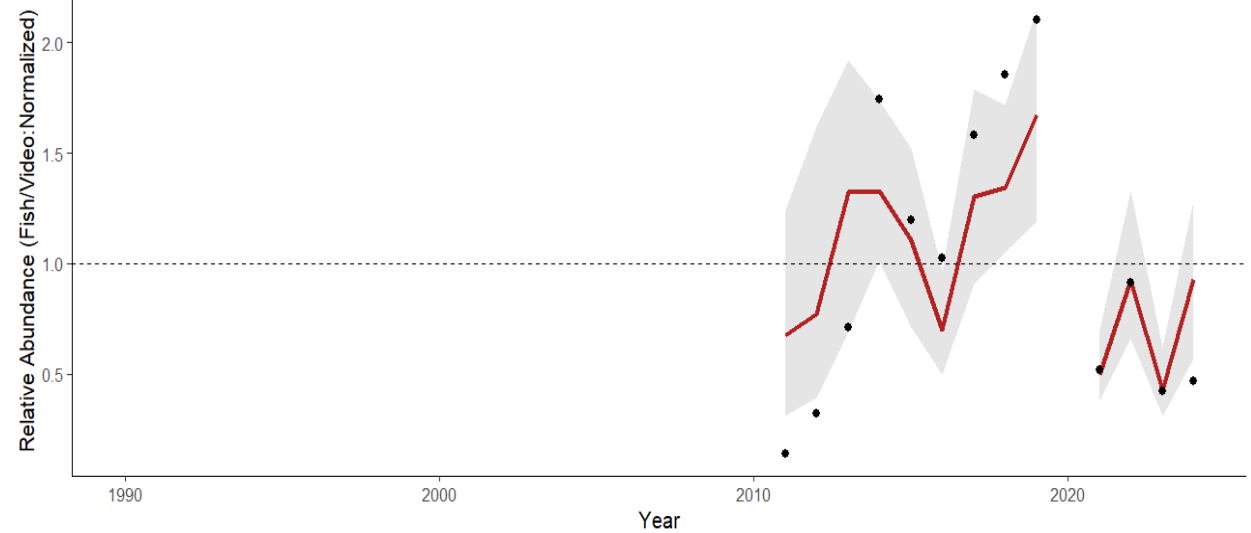
White Grunt

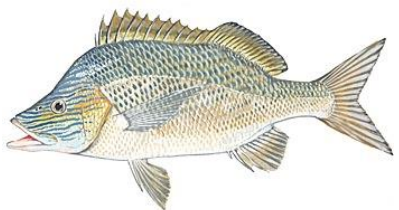


Catch

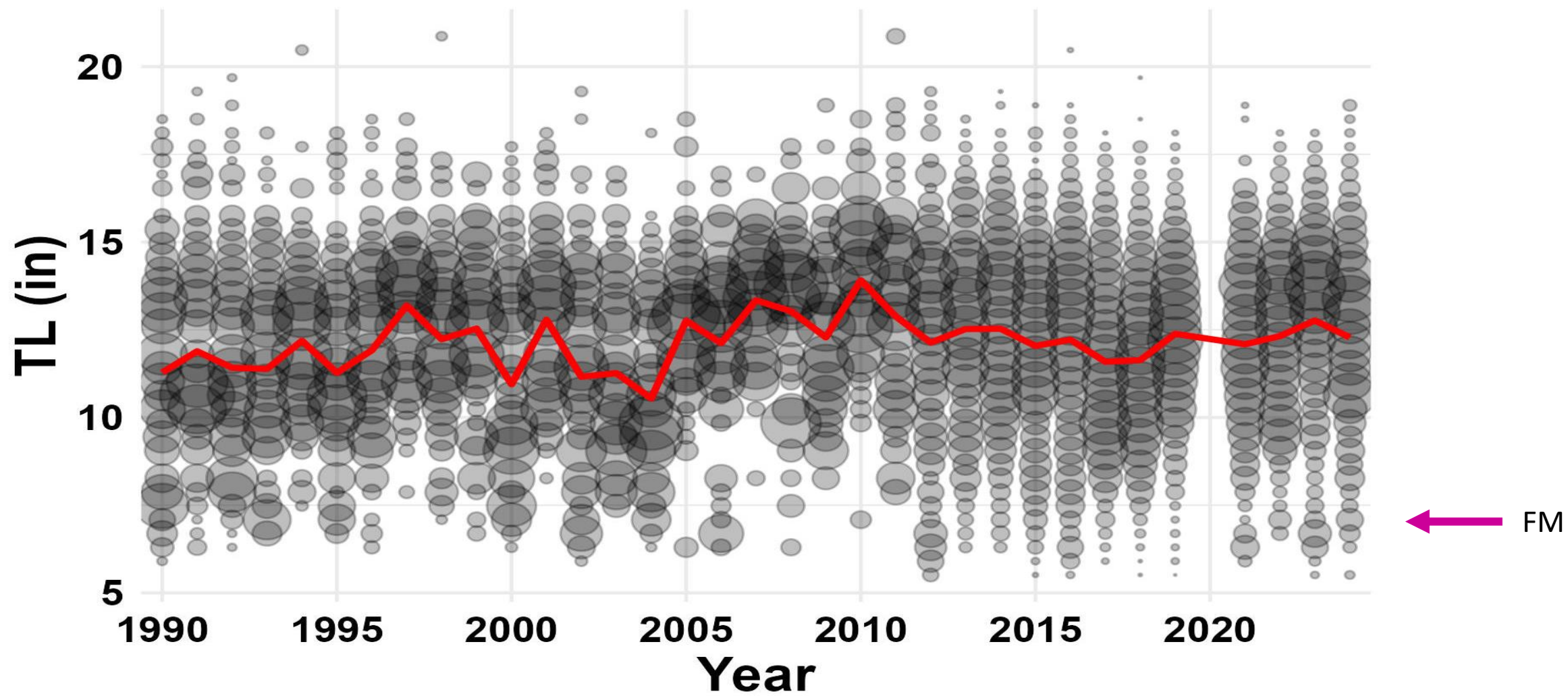


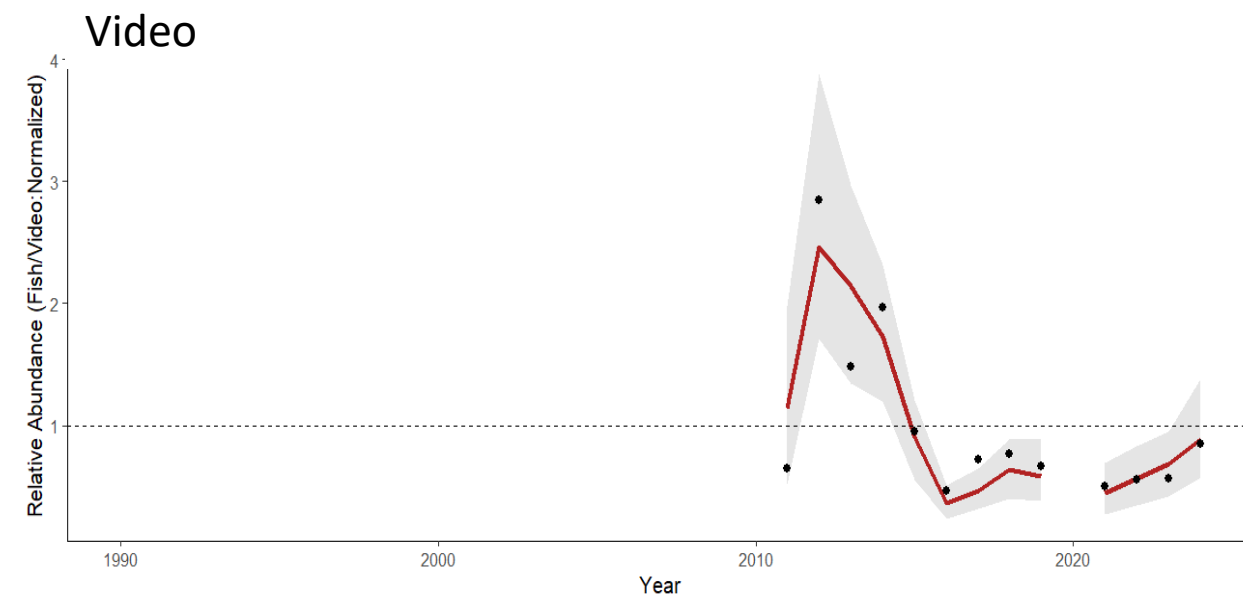
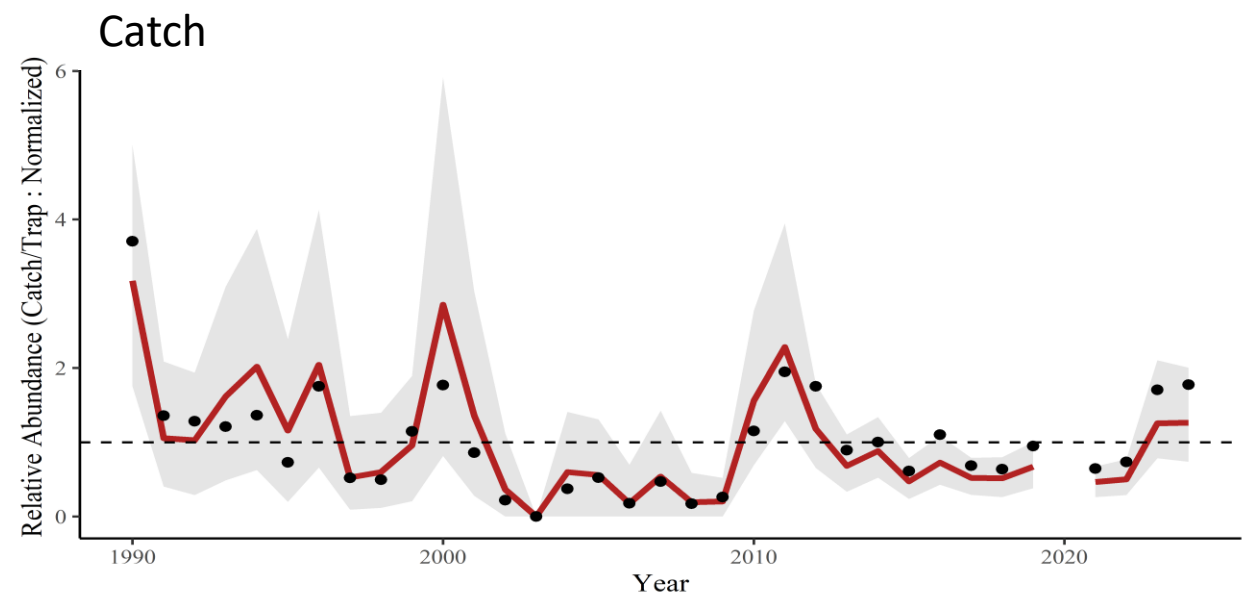
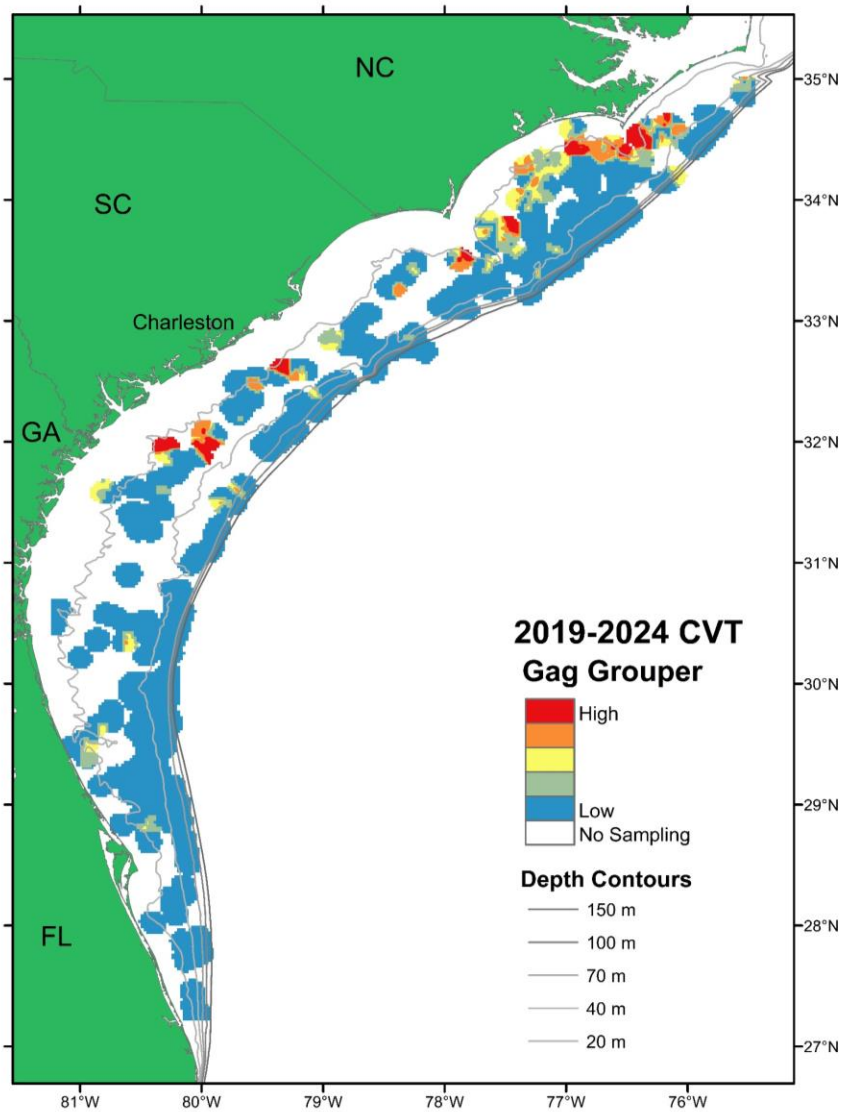
Video

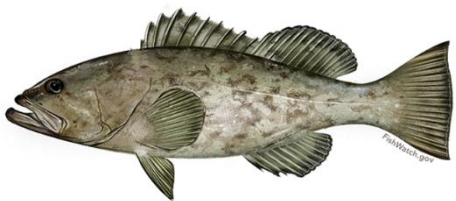




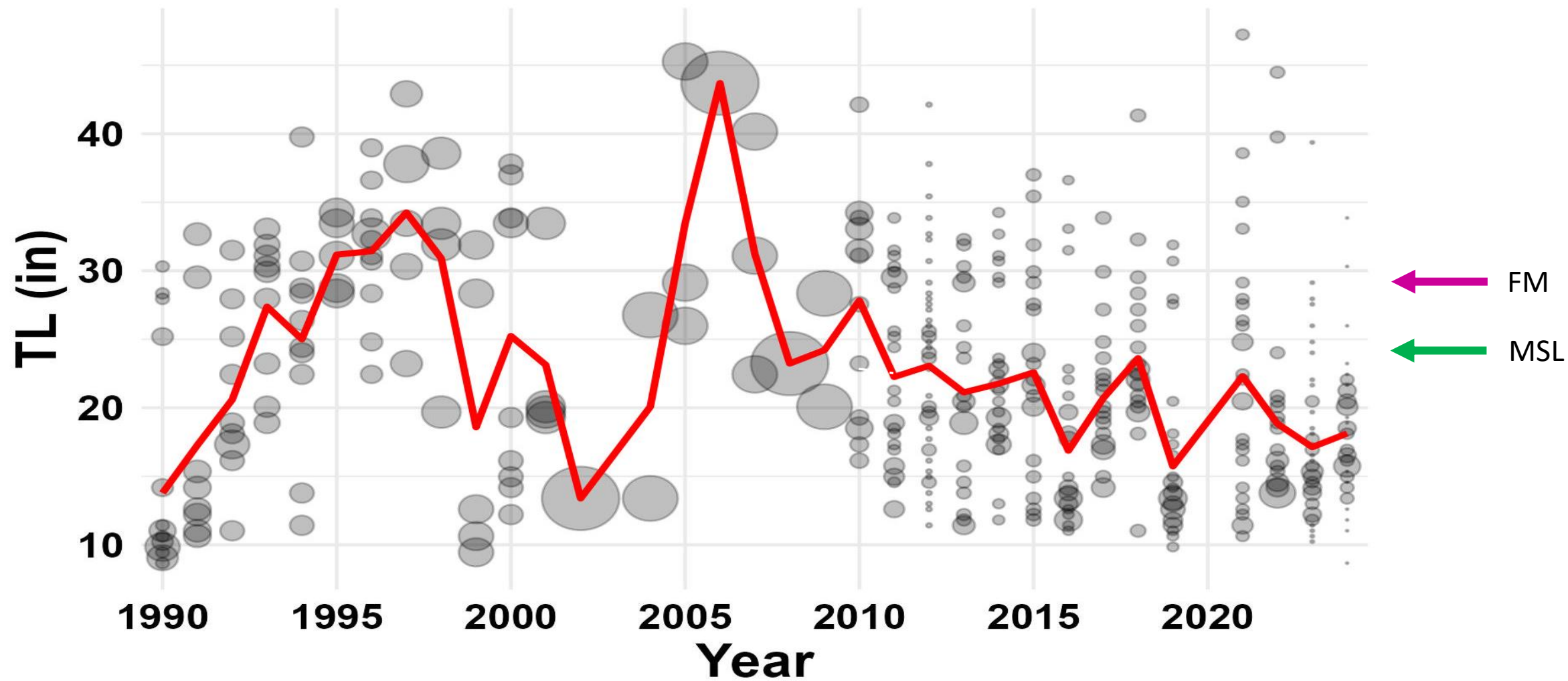
White Grunt

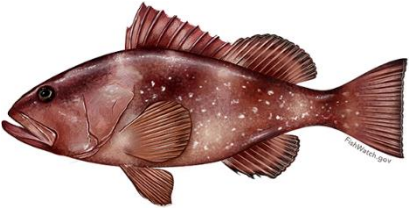




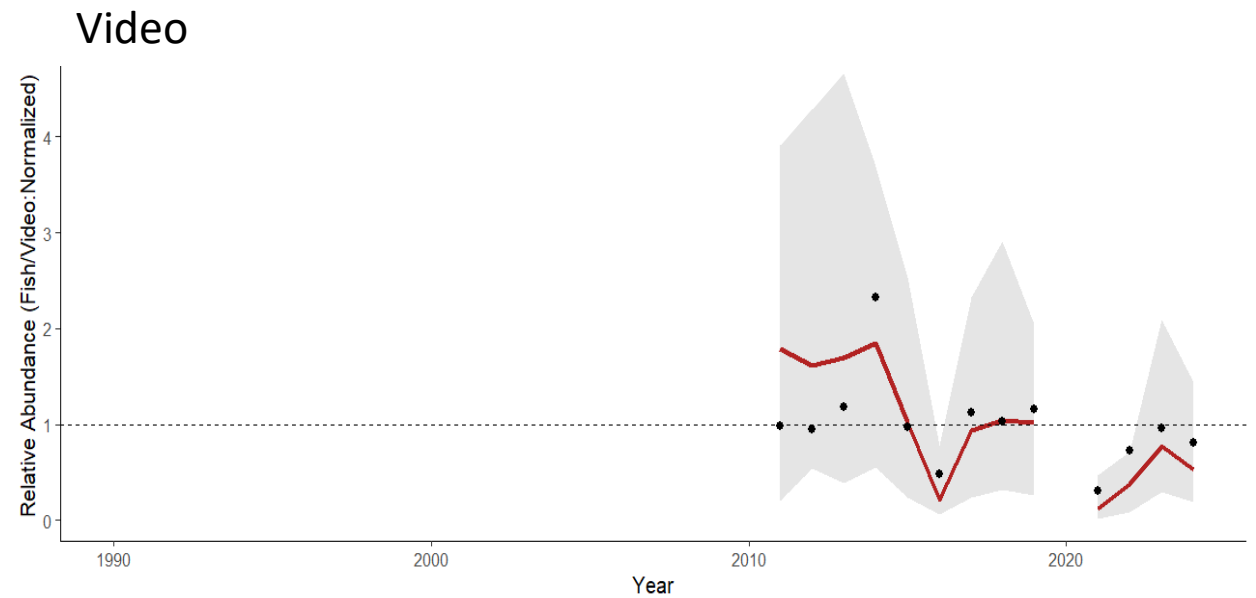
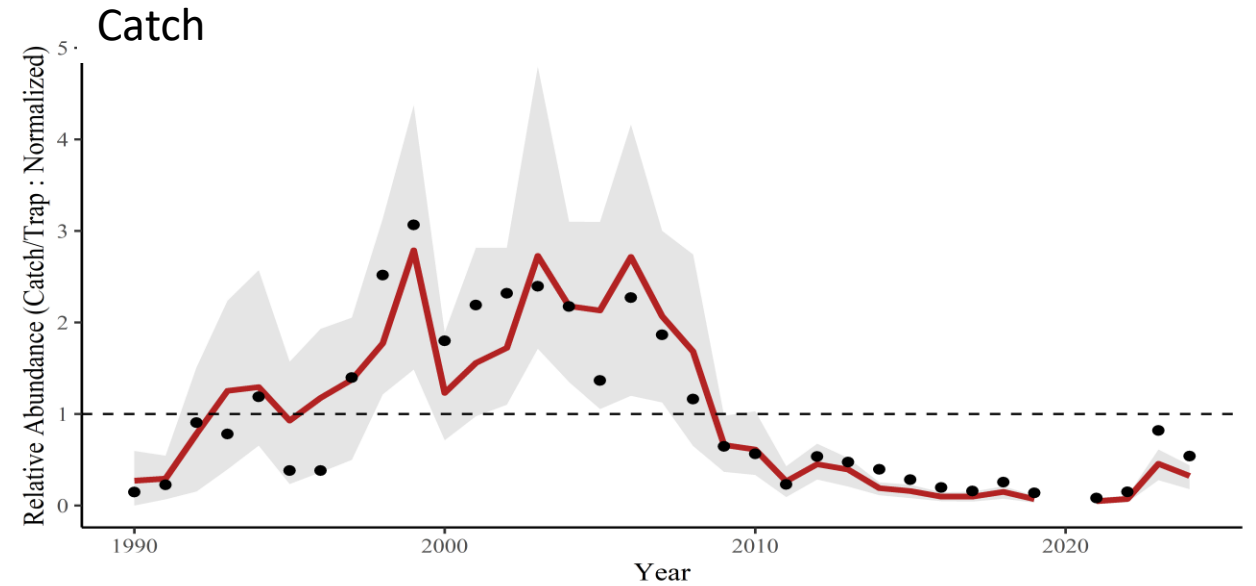
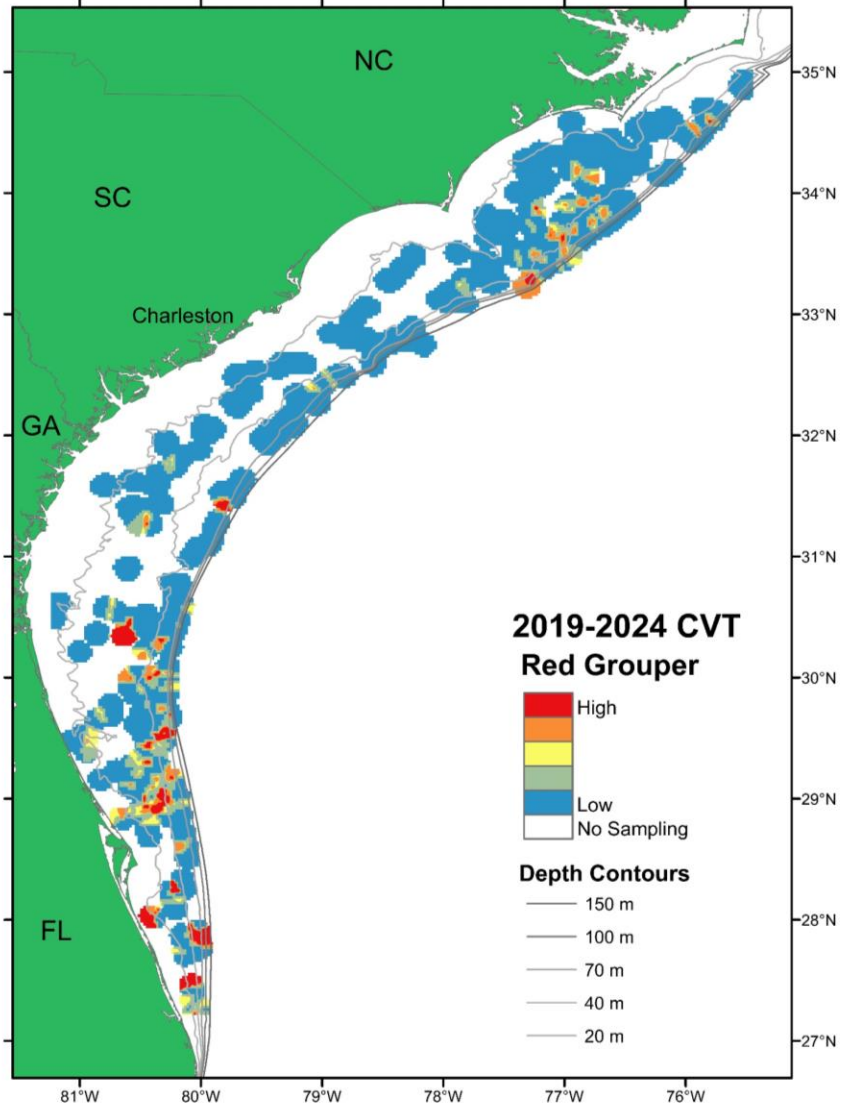


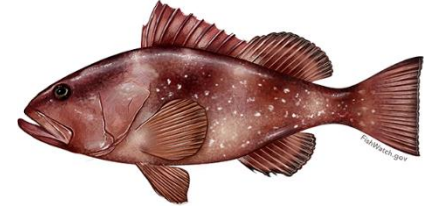
Gag



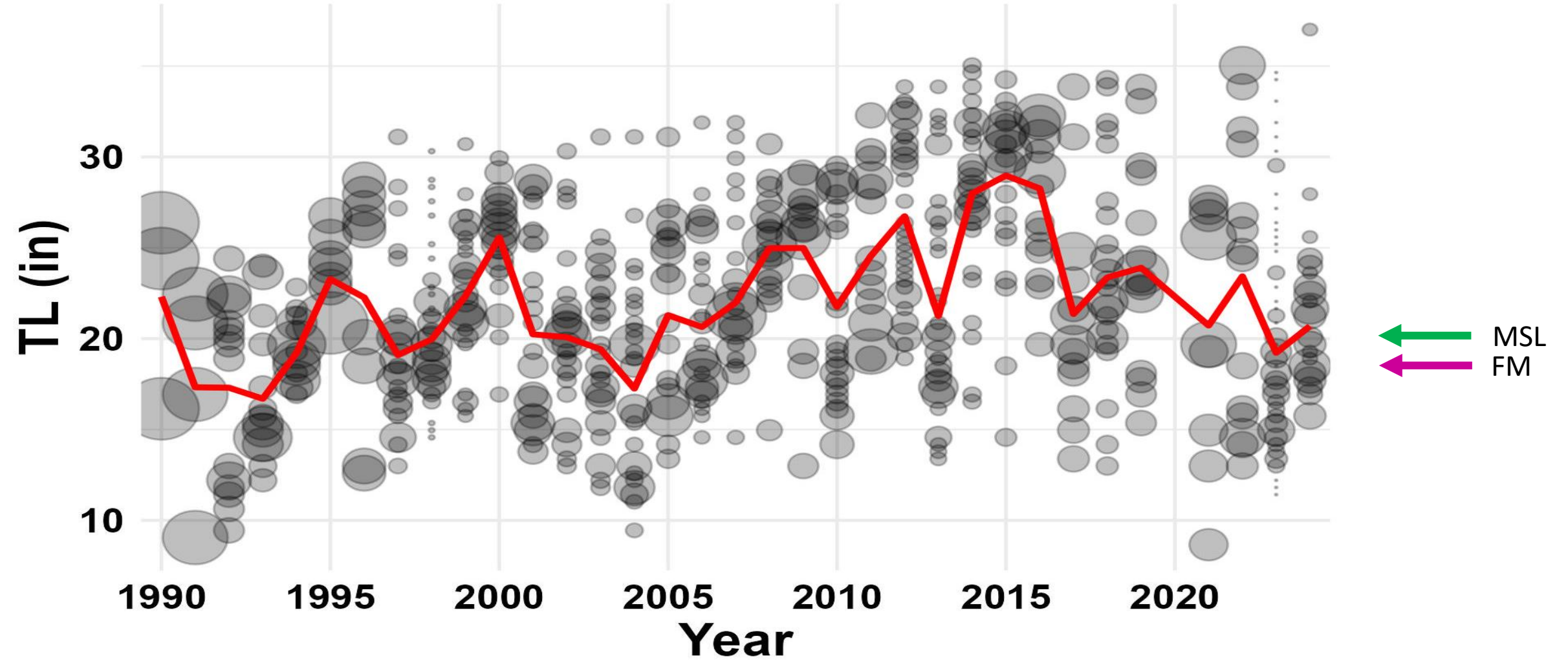


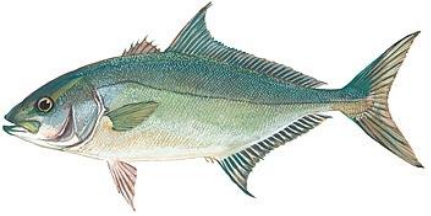
Red Grouper



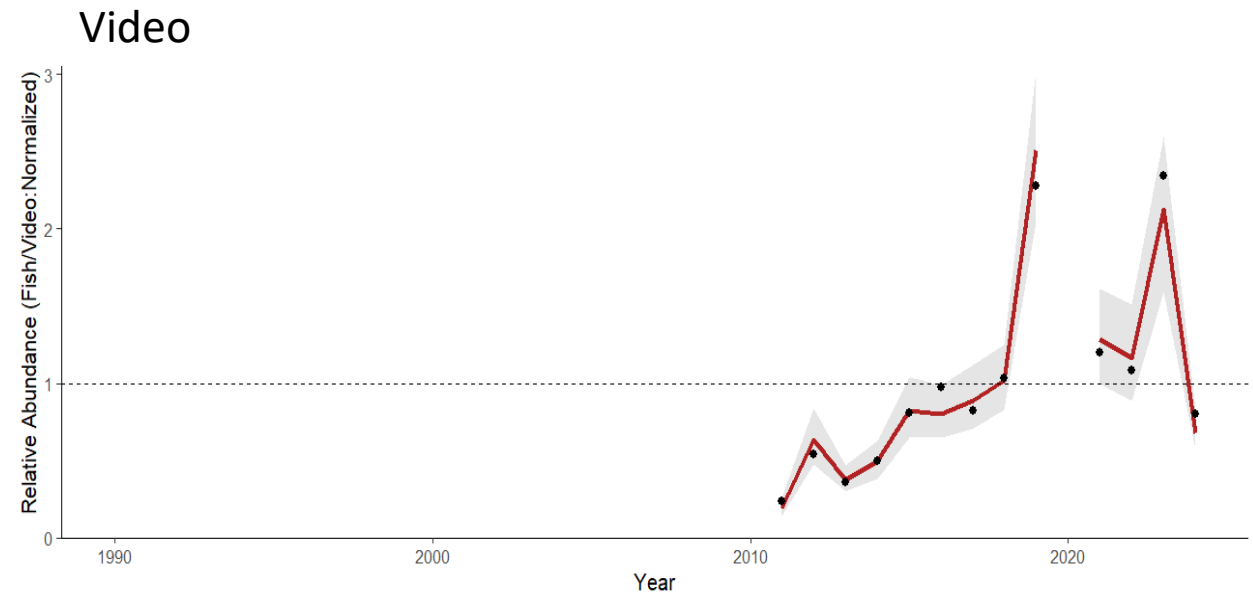
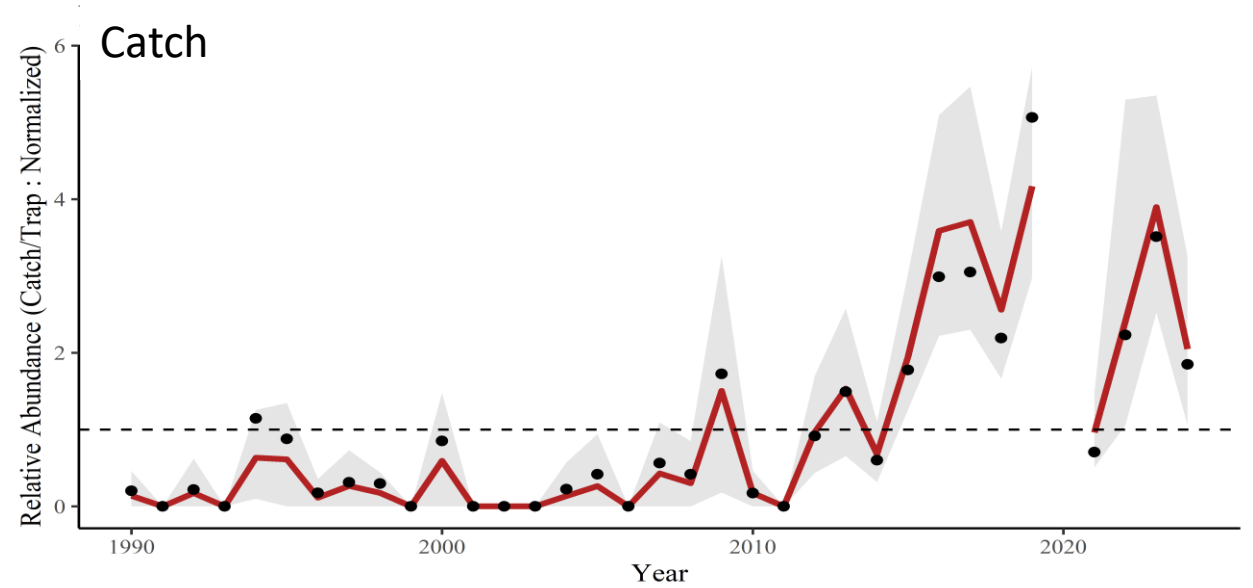
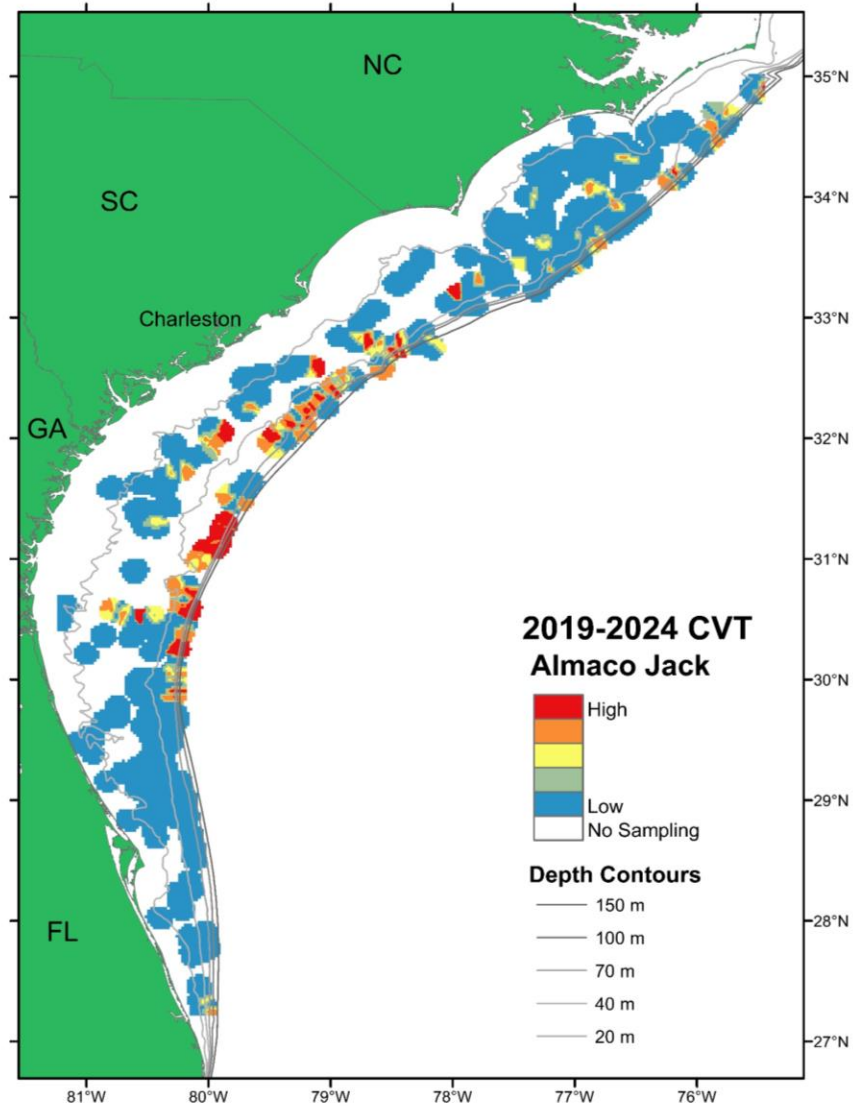


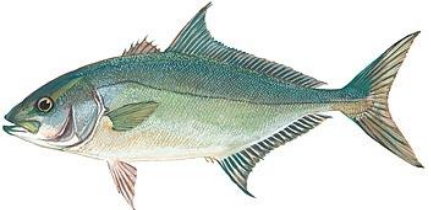
Red Grouper



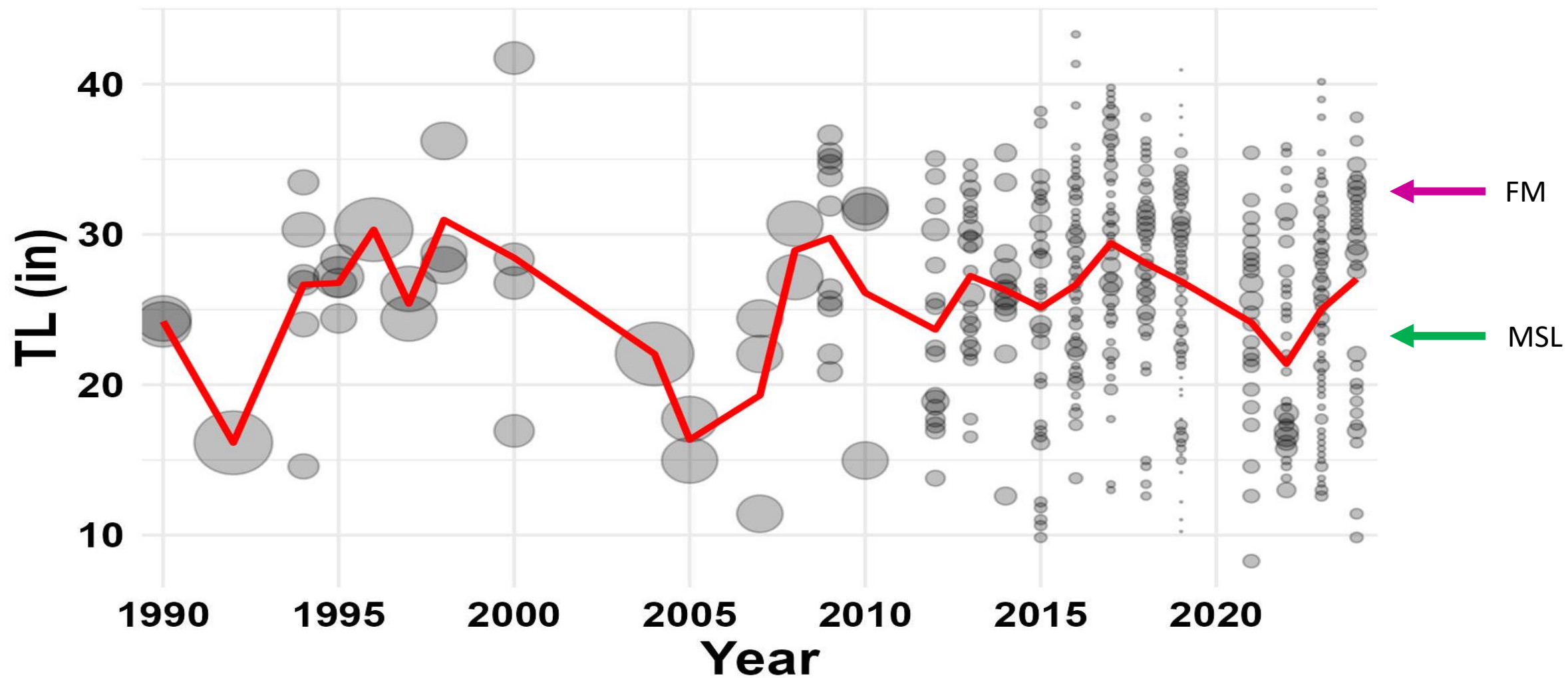


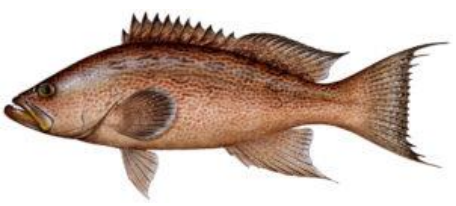
Almaco Jack



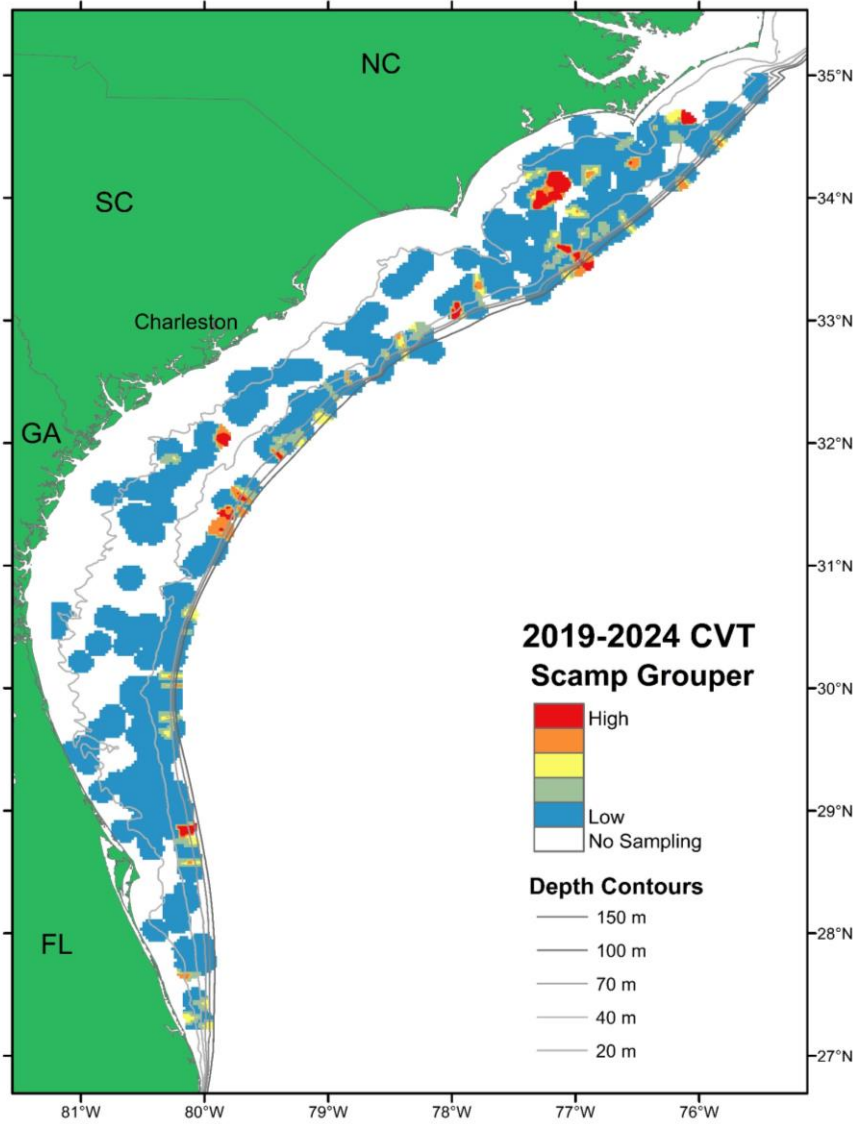


Almaco Jack

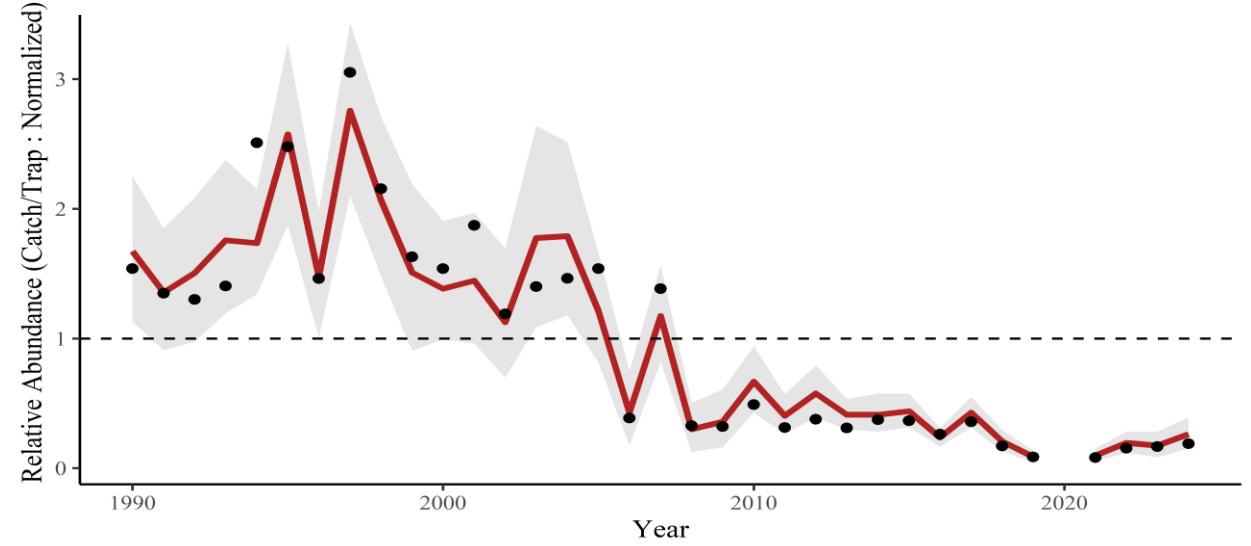




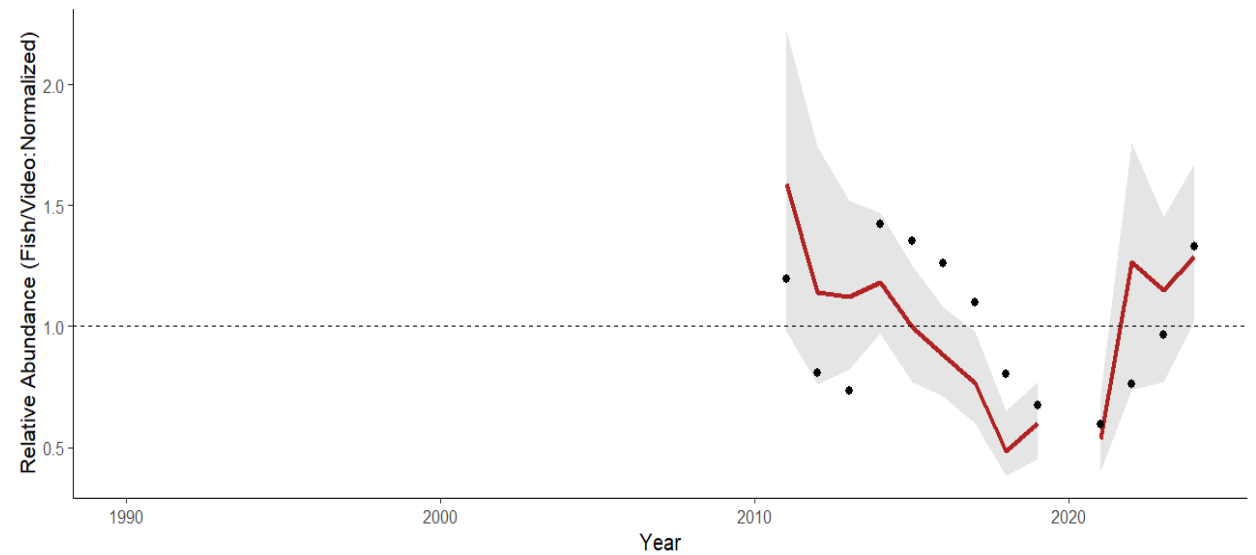
Scamp

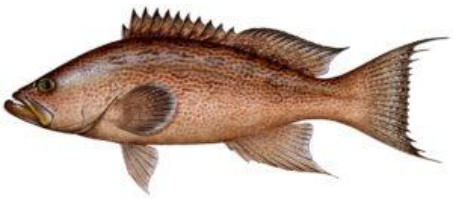


Catch

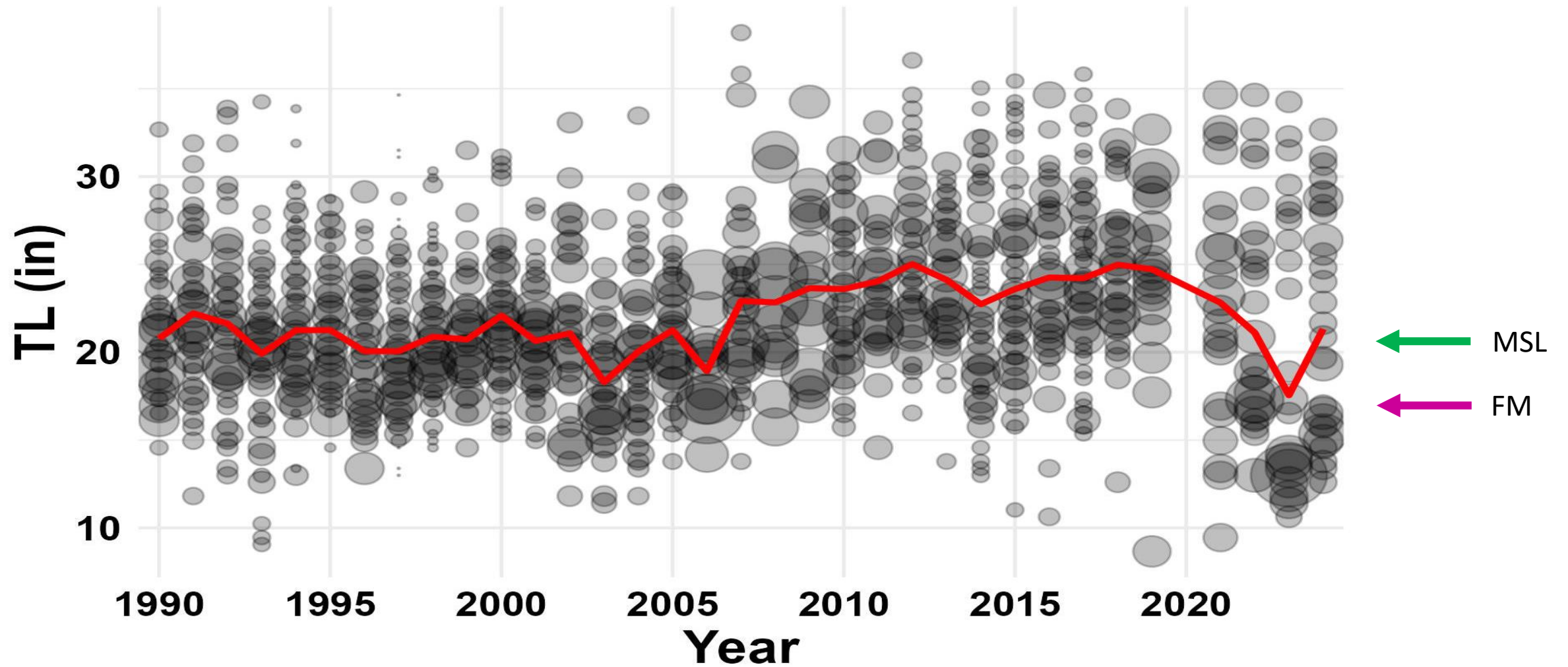


Video

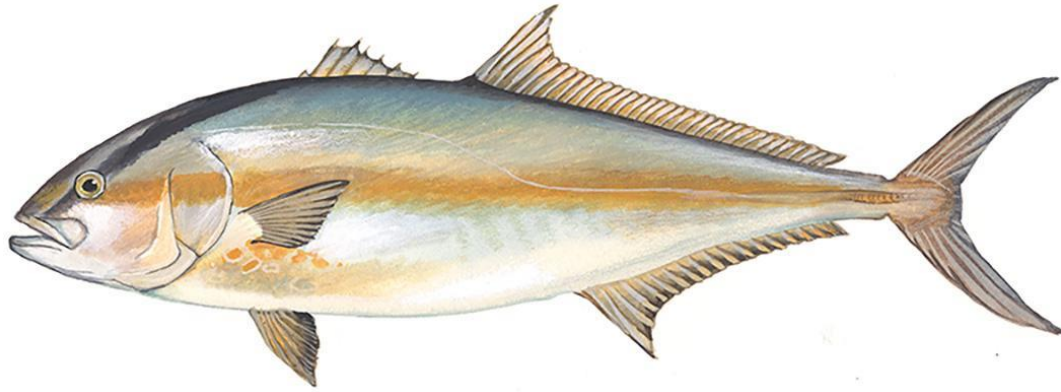




Scamp



CVT Video Only Selected Species

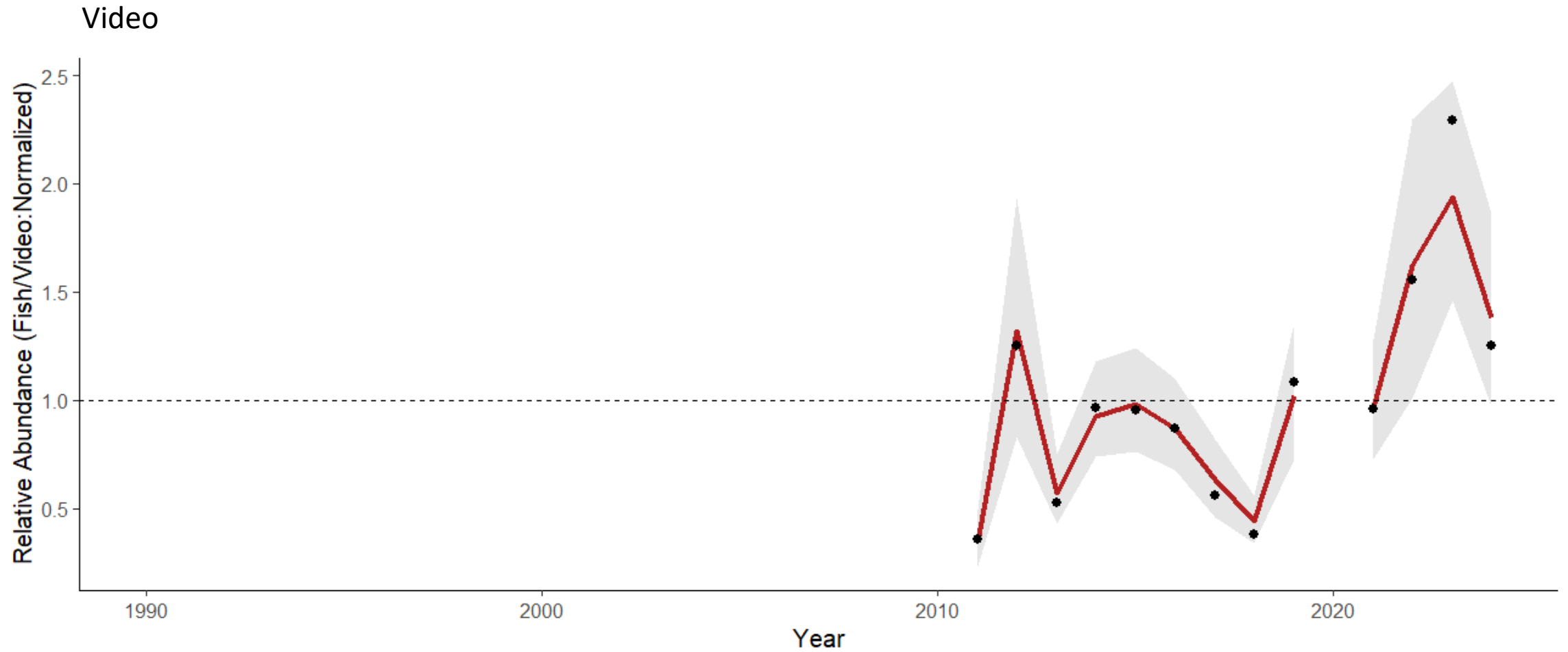
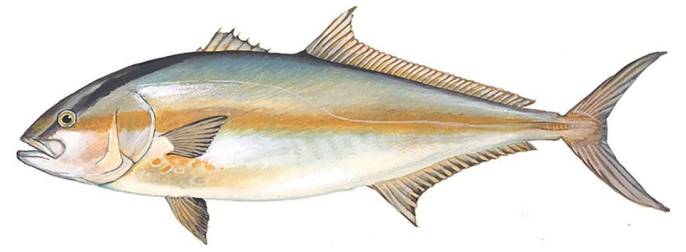


Greater Amberjack

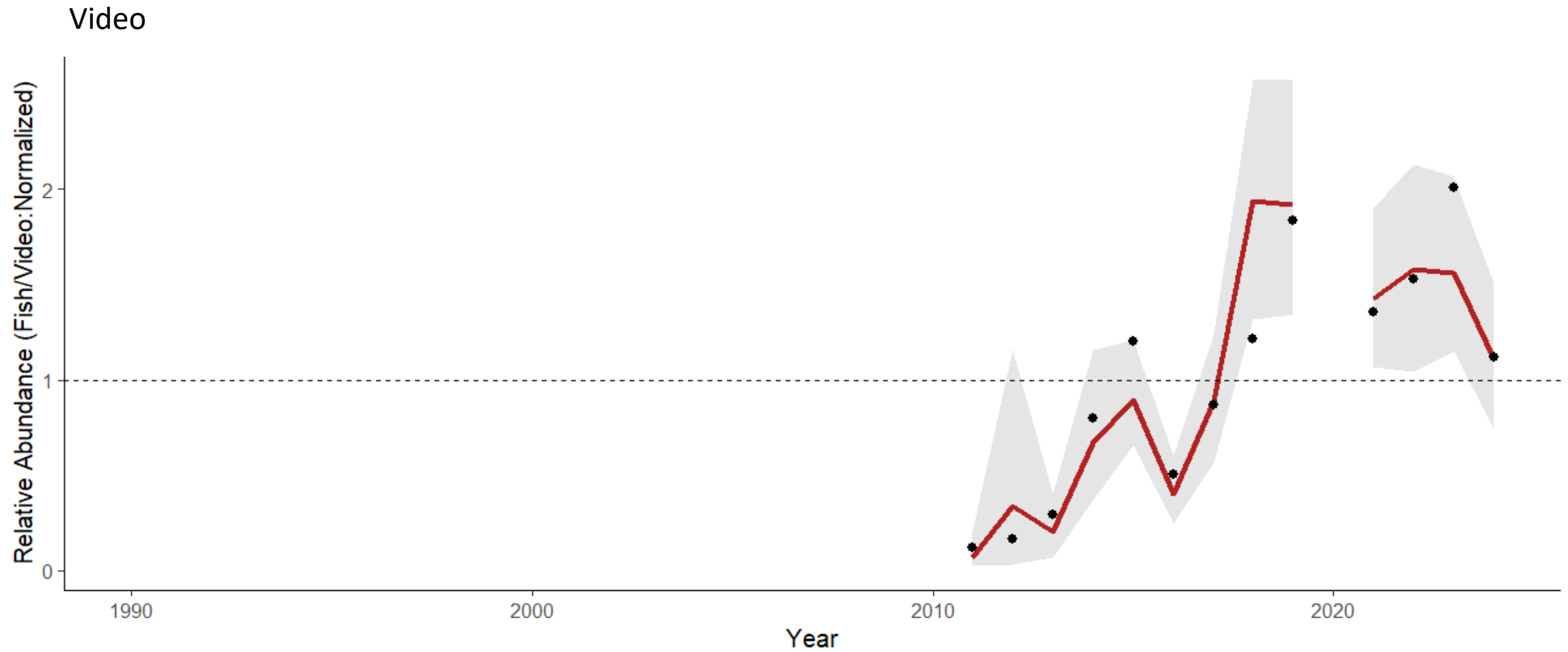


Mutton Snapper

Greater Amberjack



Mutton Snapper

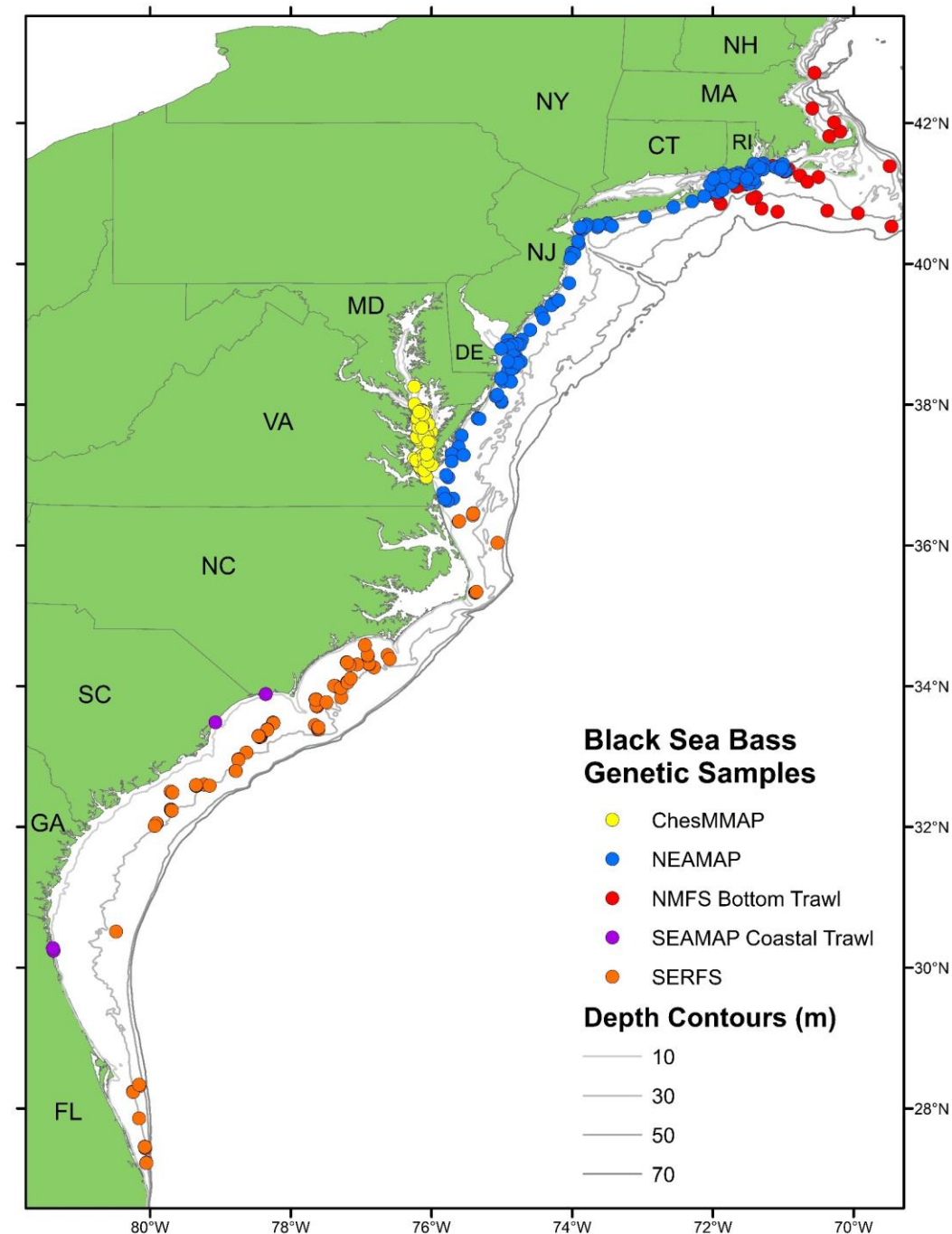


Other Reef Fish Activities (SCDNR)

Black Sea Bass East Coast-wide Genetic Structure
5 Coast-wide Fishery-Independent Surveys
Fin clips for genetic material FL – MA

Historical break at Hatteras?
Southern Stock north-ward movement?
Mixing?

Presentation at October SSC Meeting



2025 SERFS Activities

R/V *Palmetto*



R/V *Savannah*



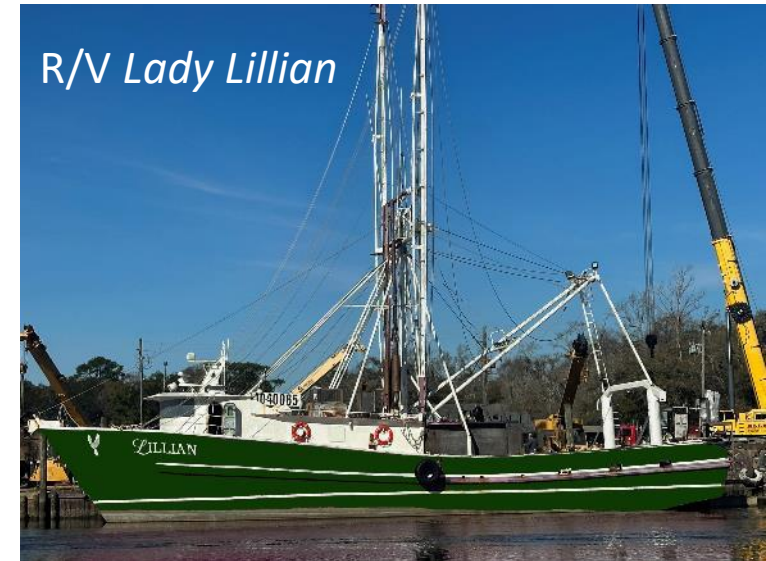
Sampling Season:

Mid-April → Mid-October

3 vessels- Chevron Video Trap

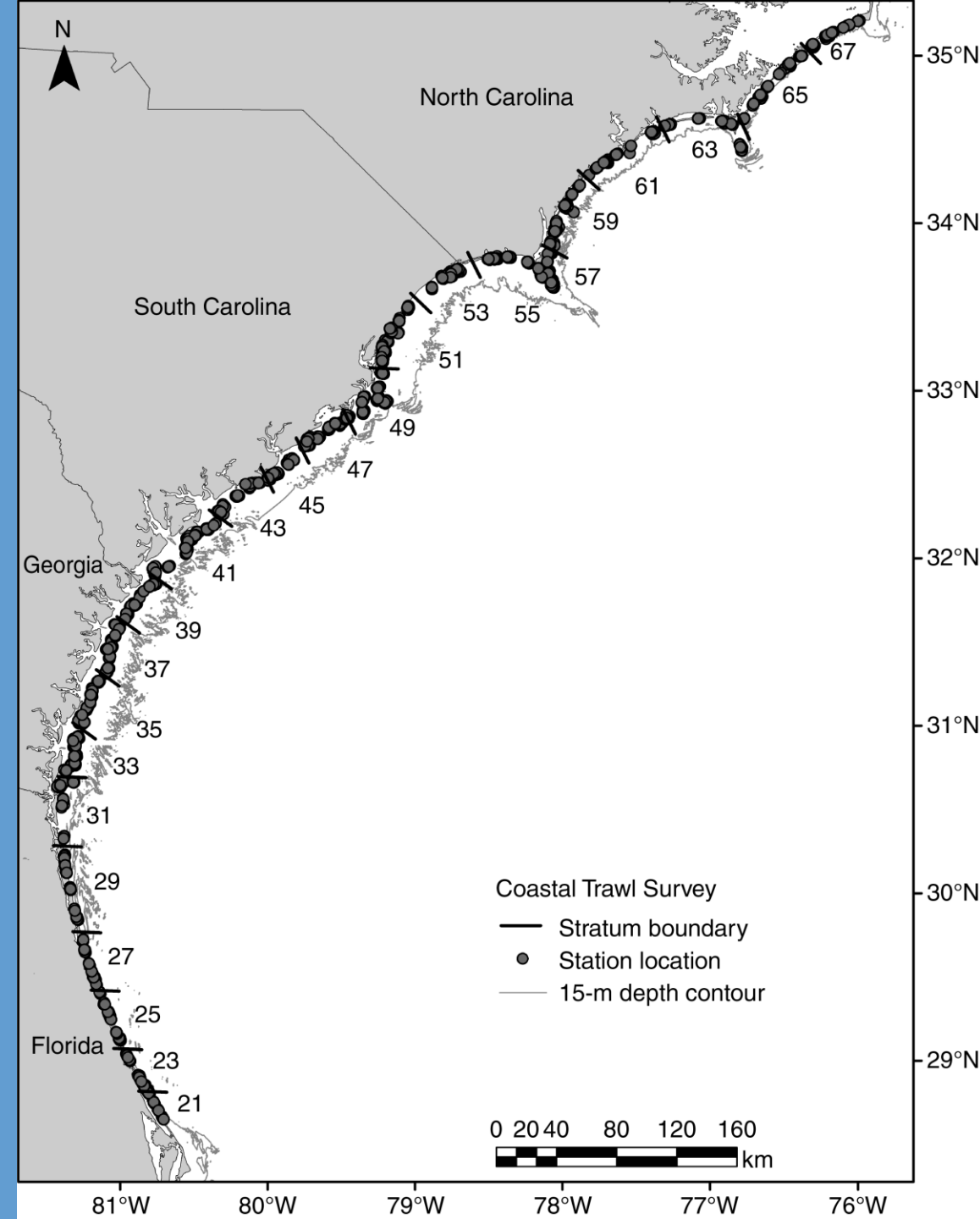
Southern Expansion (w/ FWRI) camera pods*

R/V *Lady Lillian*



Coastal Trawl Survey

- Funded through SEAMAP-SA
- Stratified, random sampling design
 - 24 latitude-based strata
 - Fixed stations, annual random selection
 - Target stations 102 per season
- 2021: one net processed
- 2023: Spring, Summer, Fall to Spring, Fall
- 2024: Vessel and Gear Changes



Coastal Trawl Survey

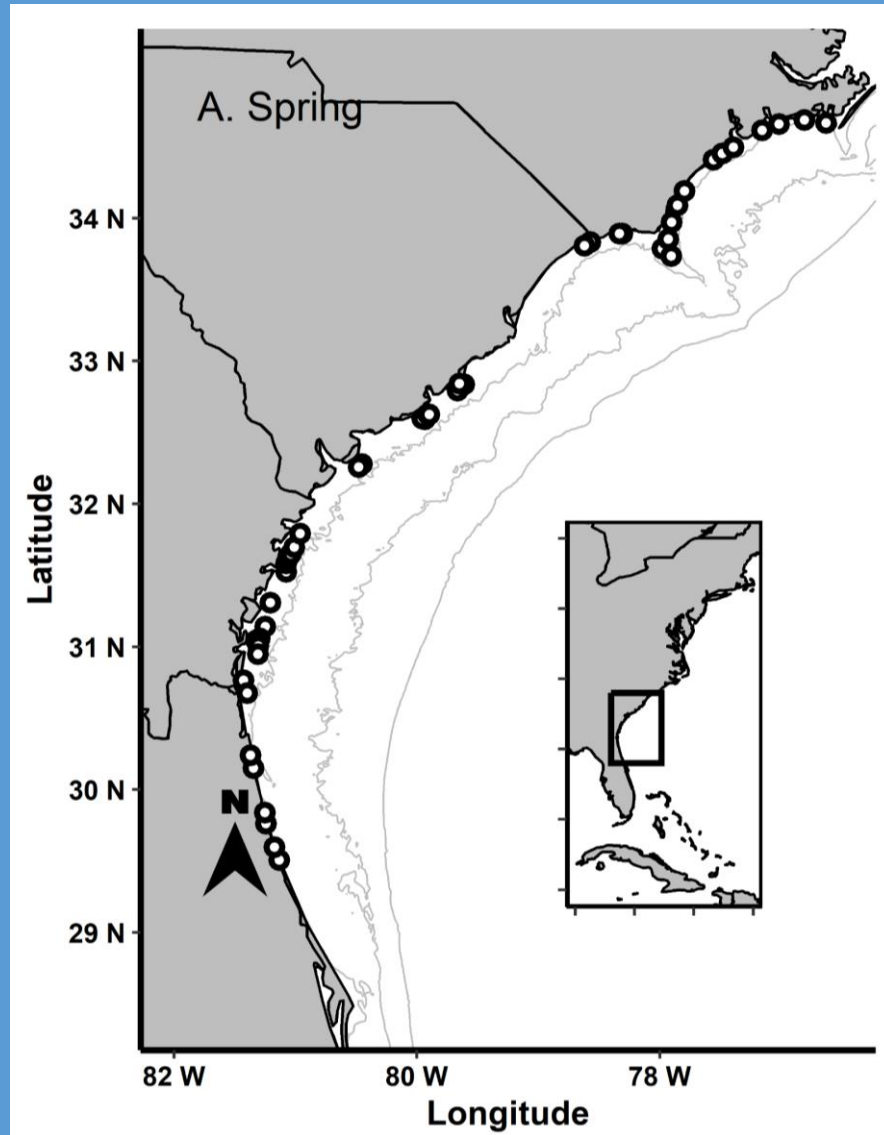
- 2024 Vessel and Gear Changes
- R/V Lady Lillian, stern trawler
- 60' Webster Trawl (high rise, flat net)
- Same mesh sizes
- Net Geometry to correct effort
- DOY, not Season, for Index Calculations
- ZINB standardization

R/V Lady Lillian

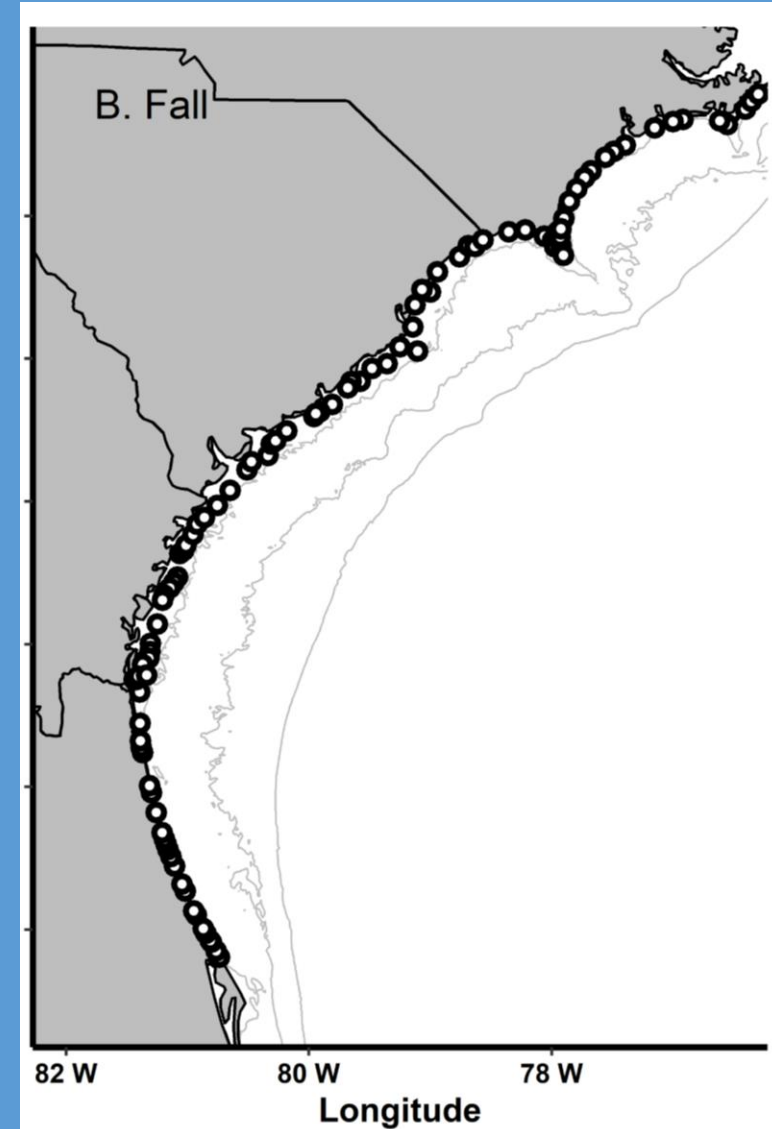


Coastal Trawl Sampling Effort 2024

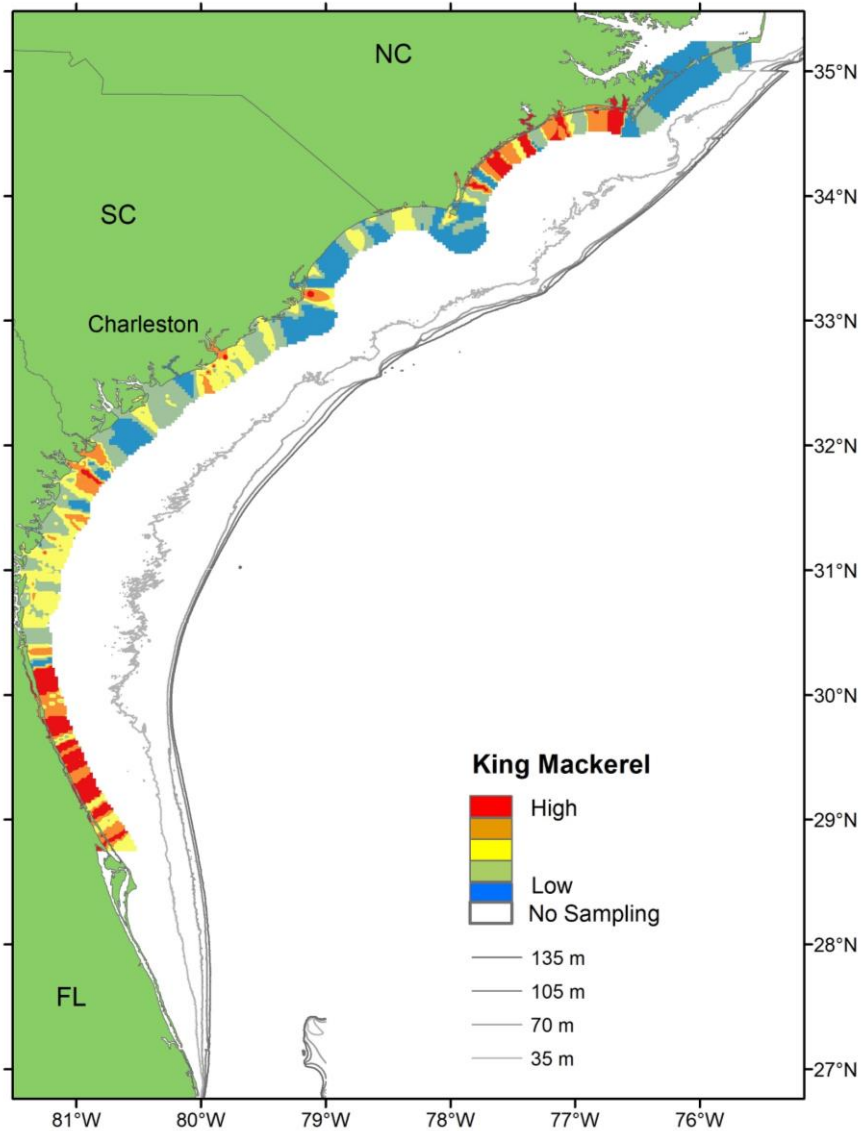
46 of 102 stations sampled in “Spring”



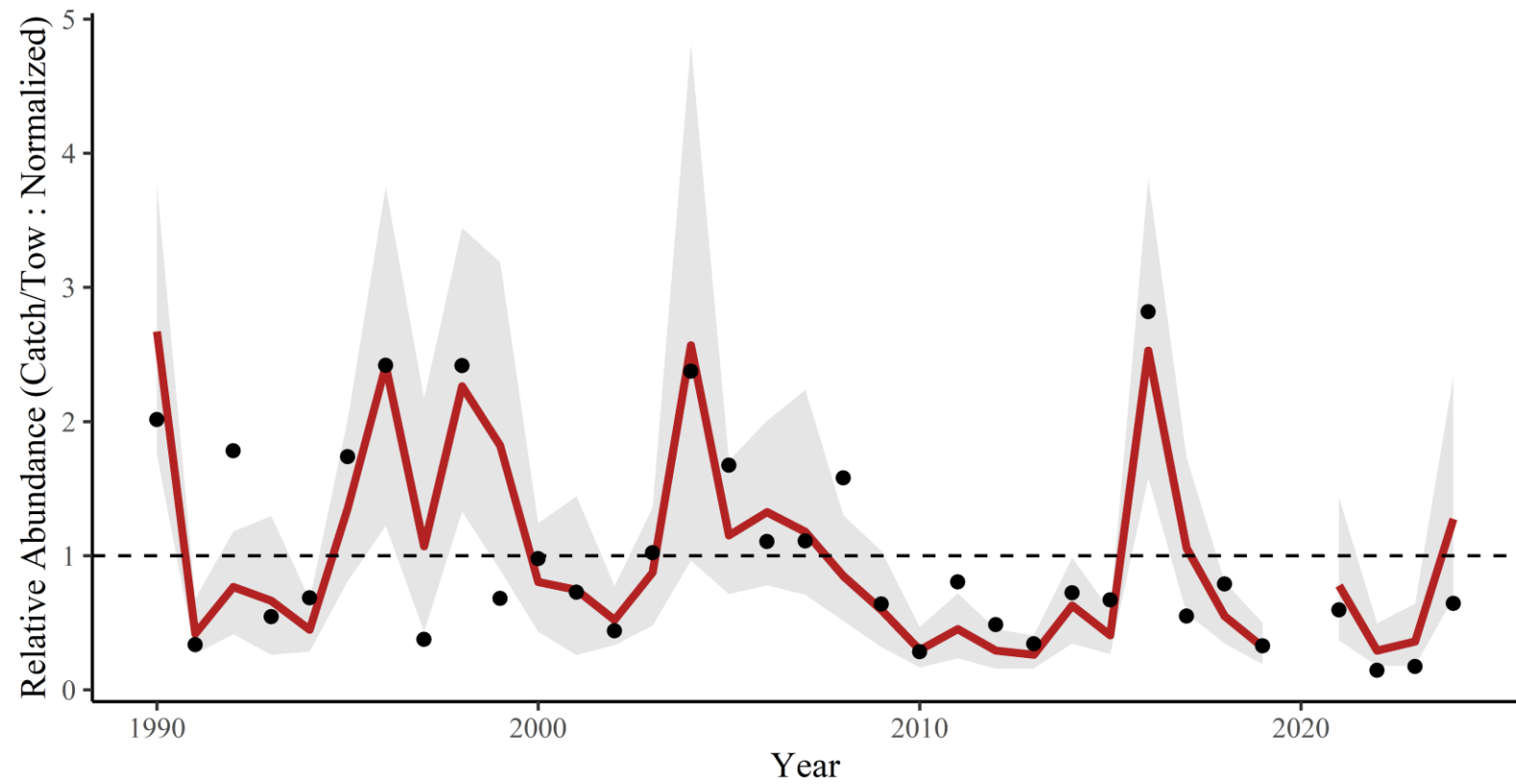
101 of 102 stations sampled in “Fall”



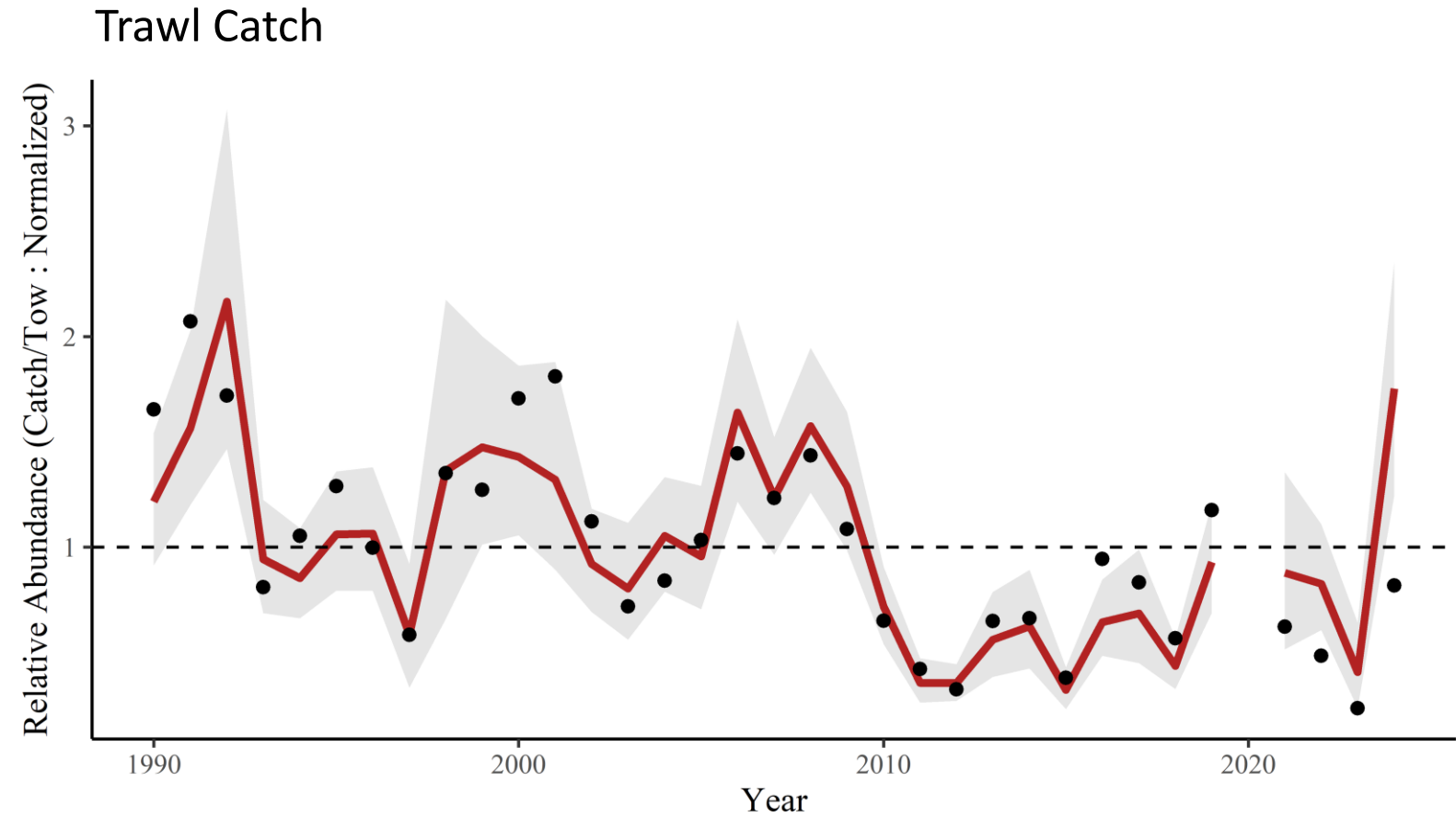
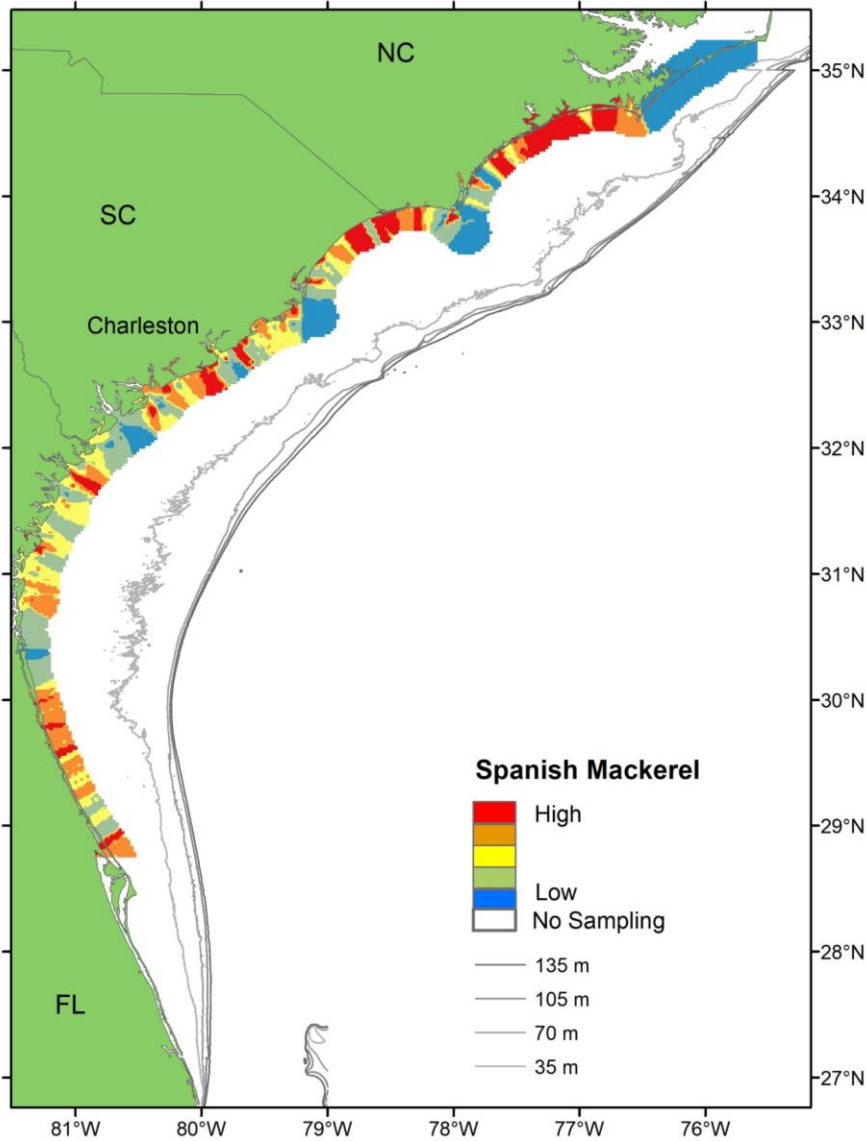
King Mackerel (Age-0 +)



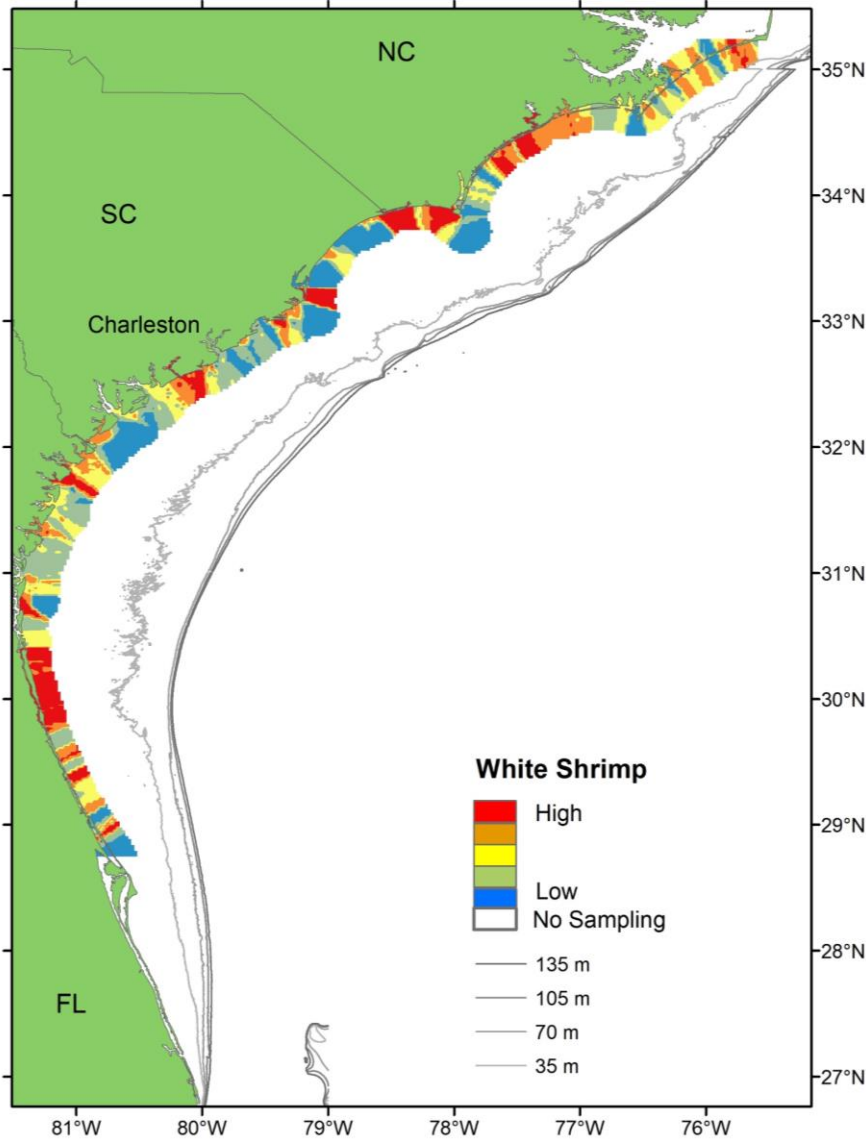
Trawl Catch



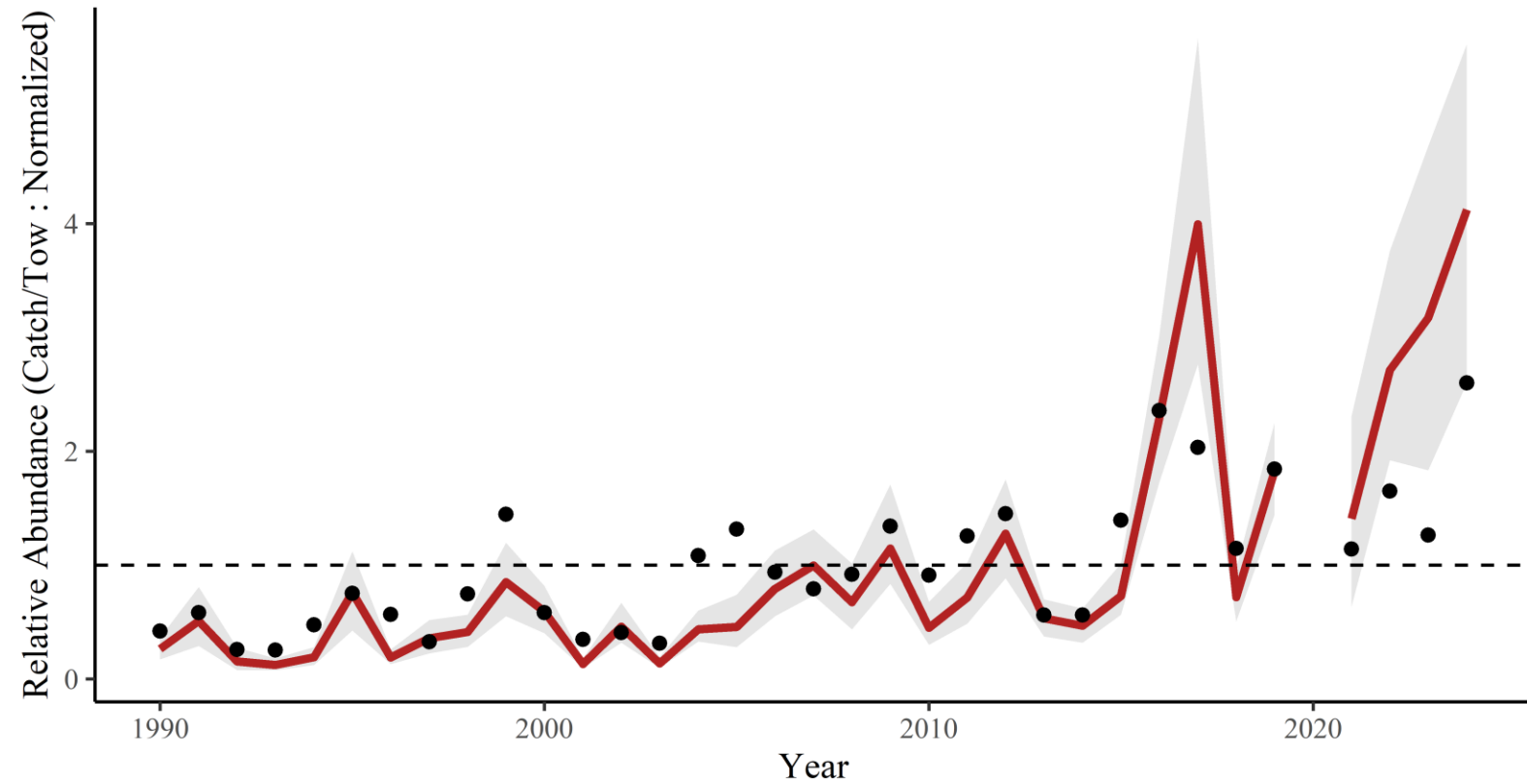
Spanish Mackerel (Age-0 +)



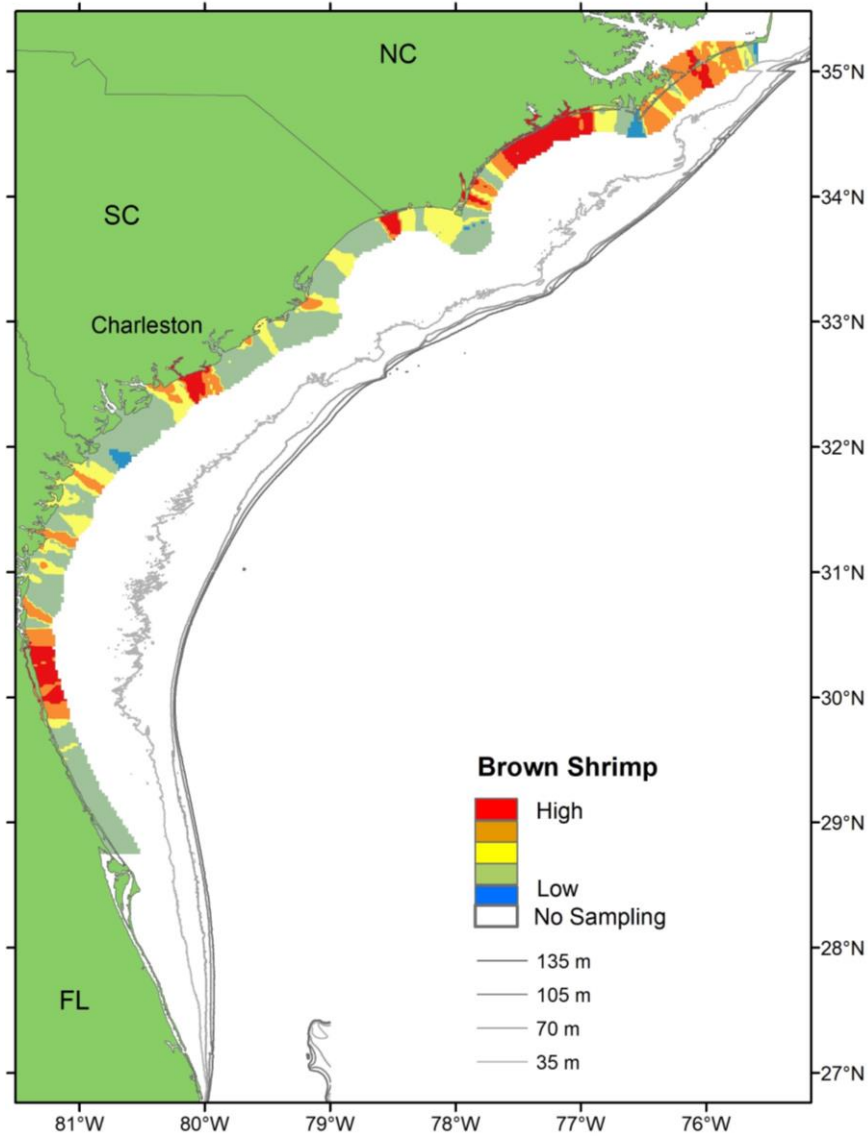
White Penaeid Shrimp



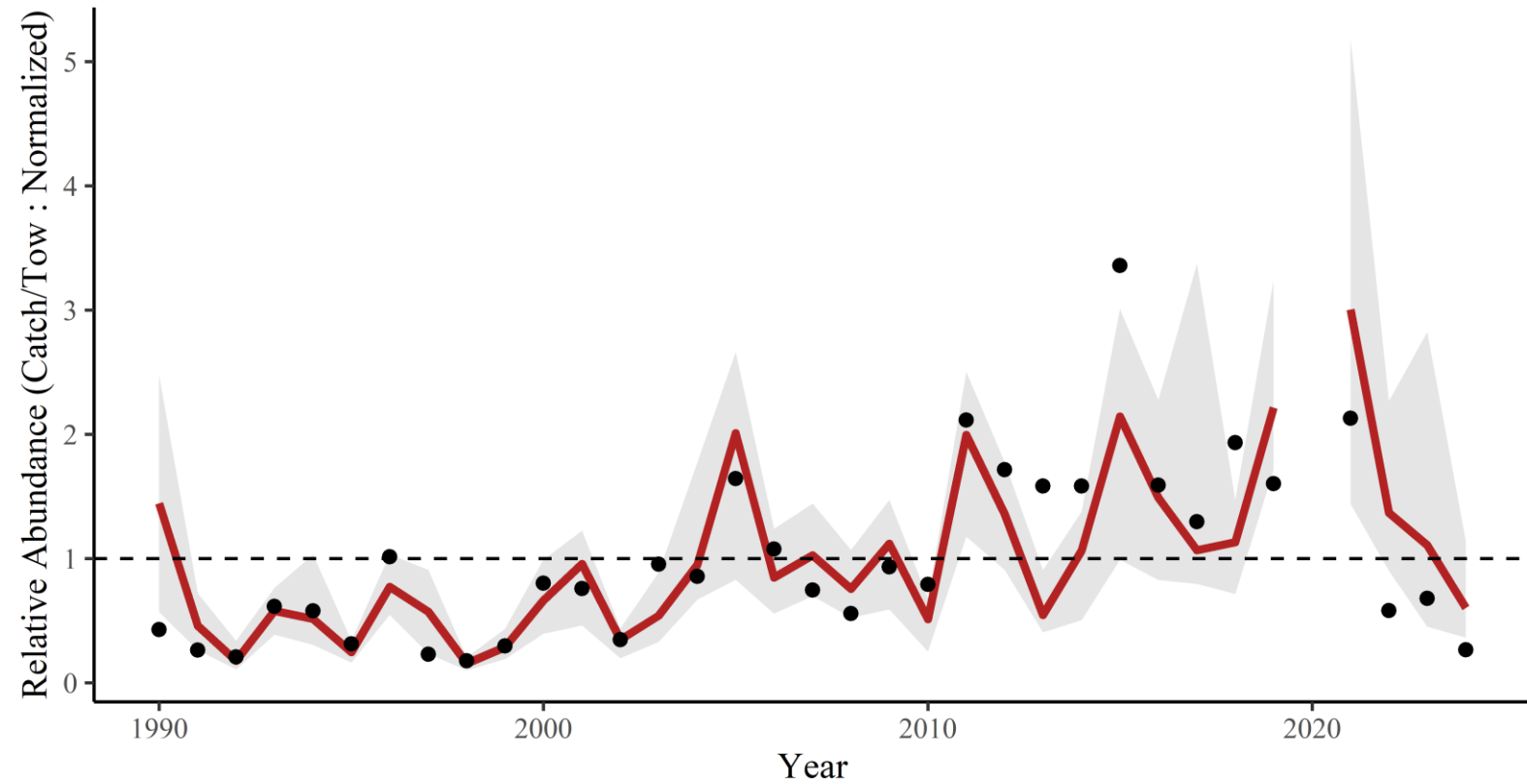
Trawl Catch



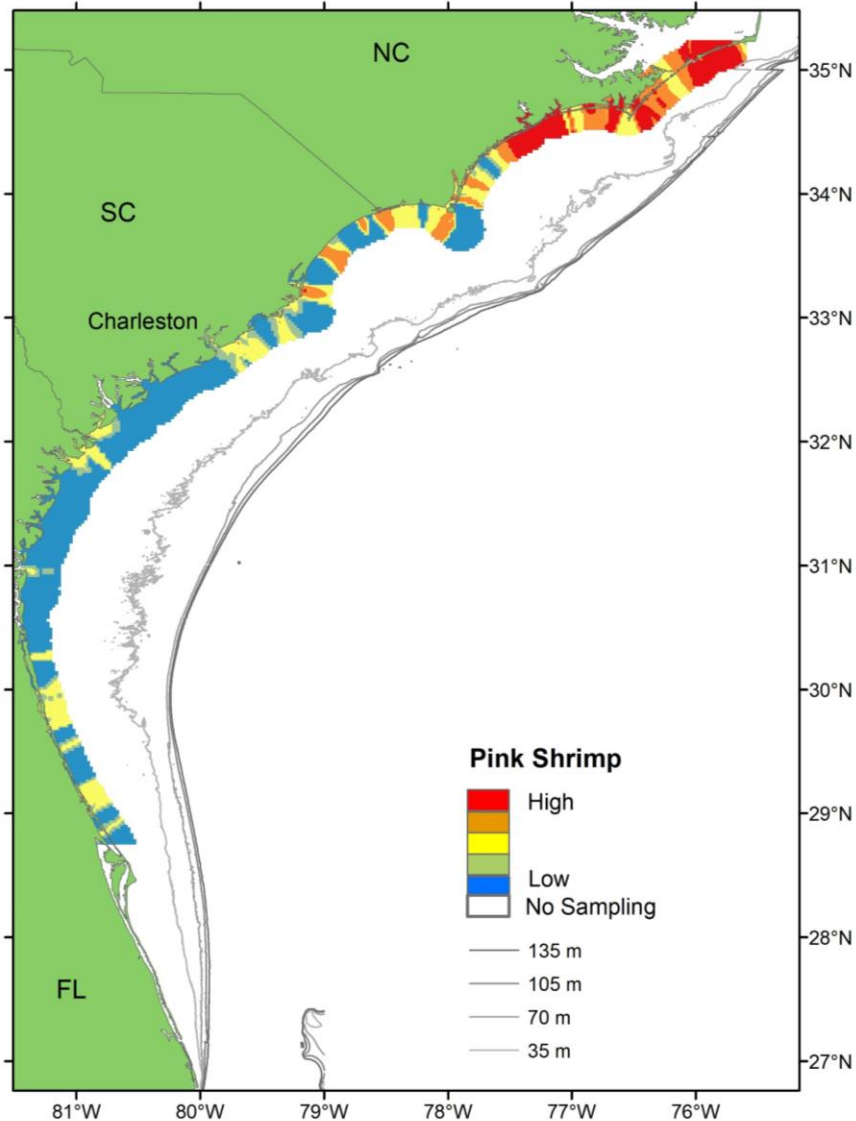
Brown Penaeid Shrimp



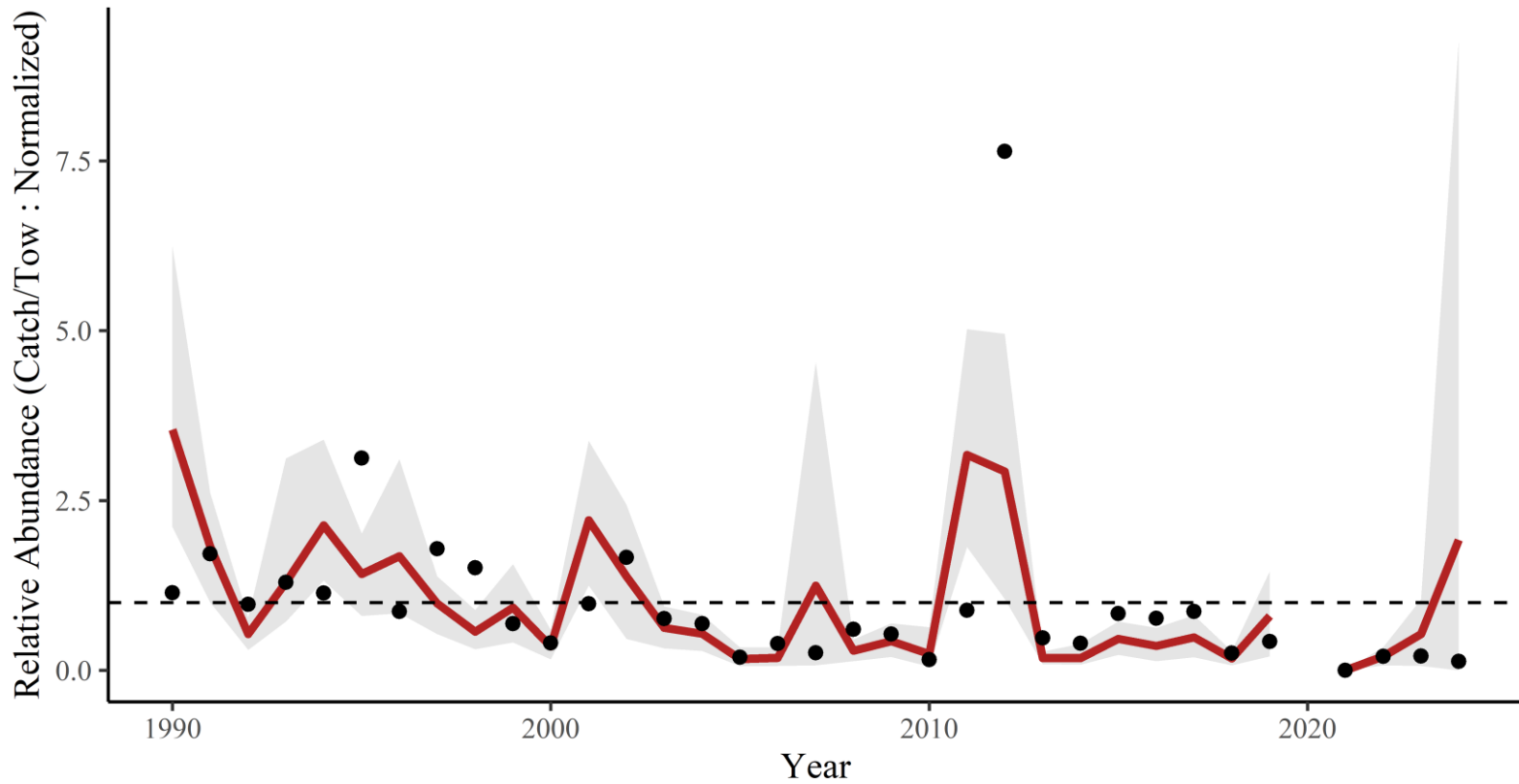
Trawl Catch



Pink Penaeid Shrimp



Trawl Catch





Acknowledgements:

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

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SCDNR support
Illustrations: SAFMC



Questions?



R/V Lady Lillian Ops

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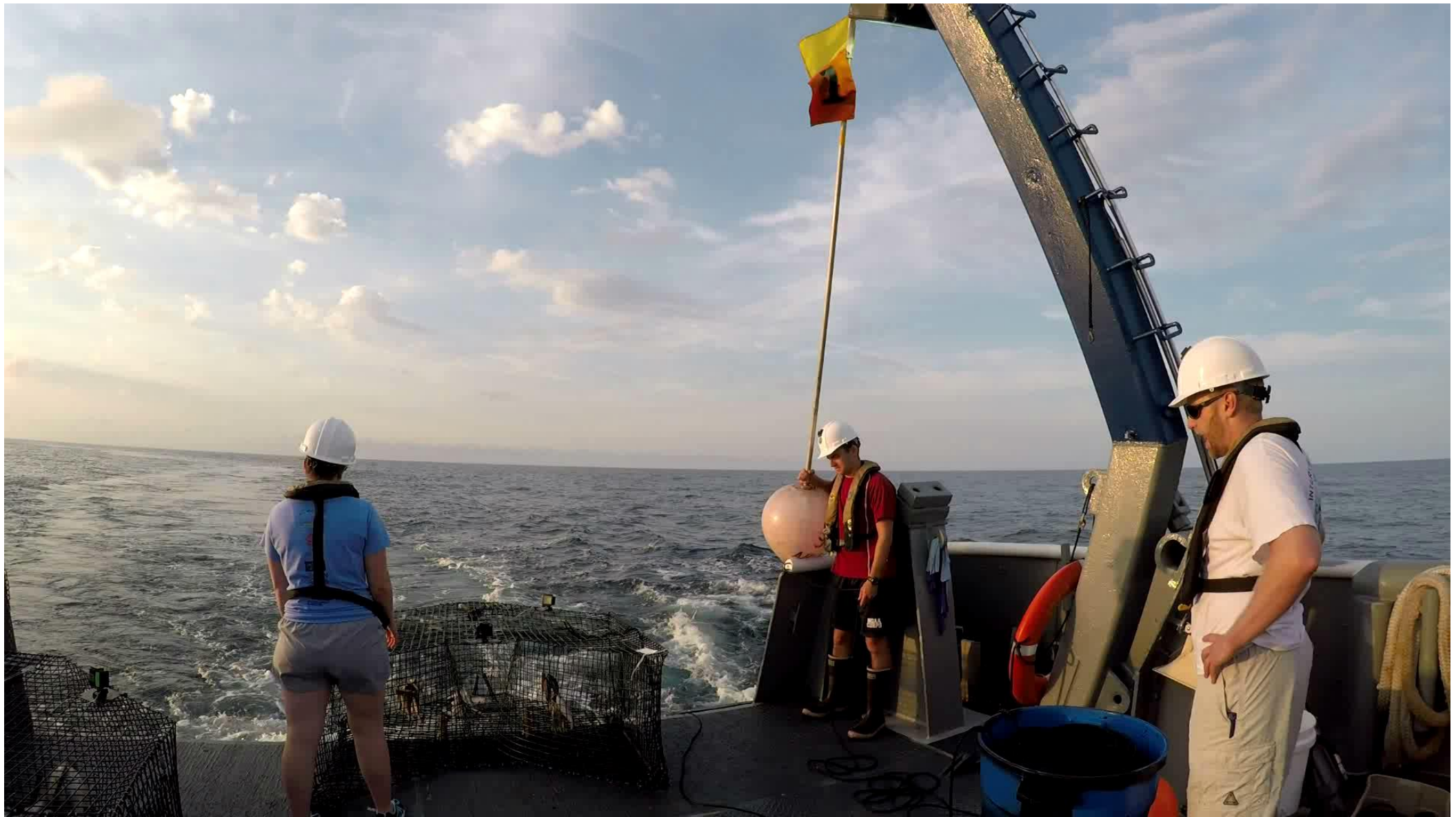


R/V Lady Lillian Ops

Questions?



R/V Lady Lillian Ops



Questions?