Southeast Reef Fish Survey

2018 Update
Sampling Activities and
Relative Abundance

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SCDNR

June 2019 SAFMC meeting

Photos: SERFS

Southeast Reef Fish Survey
(SERFS)

MARMAP

SEAMAP-SA

SEFIS

R/V *Palmetto*

2018: 42 days
(9 days on the R/V *Lady Lisa*)

R/V *Savannah*

2018: 36 days

Marine **R**esources **M**onitoring, **A**ssessment & **P**rediction Program
South**e**ast **A**rea **M**onitoring & **A**ssessment **P**rogram (**S**outh **A**tlantic)
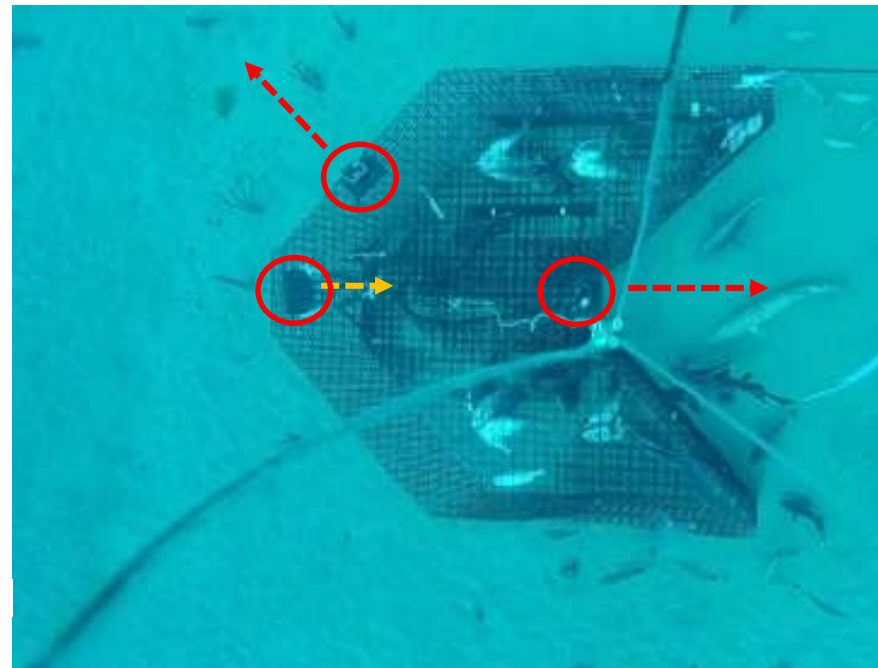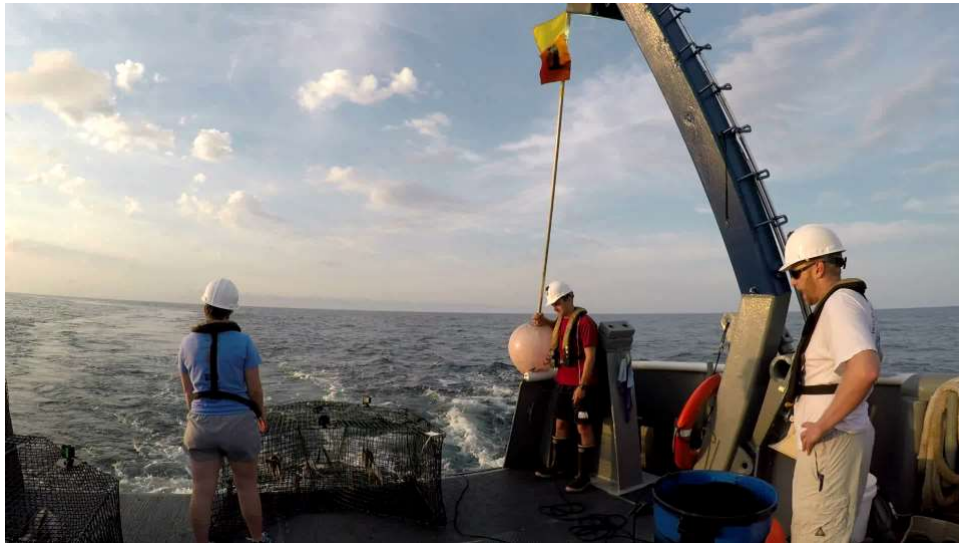**S**outh**e**ast **F**ishery-**I**ndependent **S**urvey


NOAA Ship *Pisces*

2018: 30 days

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Chevron Trap

- Target habitat: low to medium relief, live-bottom.

- Deployed in depths to ≈110 m.

- Consistent and standardized use since 1990.

- Soak time ≈90 minutes, baited with clupeids.

- 2-3 video cameras on each trap.

Short Bottom Longline

- Target habitat: high relief, live-bottom >90 meter depth.
    (Snowy Grouper, jacks, tilefish, Speckled Hind)
- Soak time ≈90 minutes, baited with whole squid.
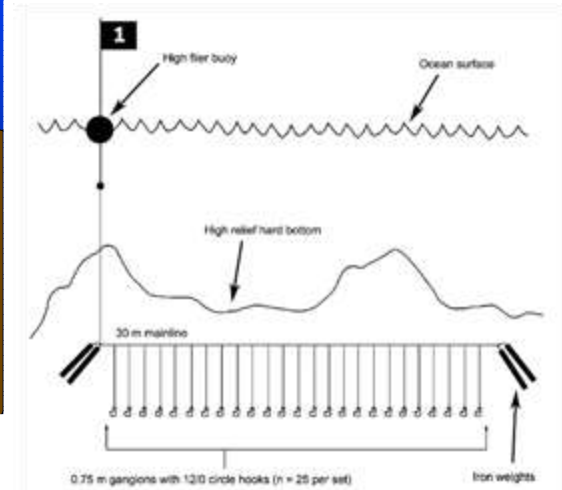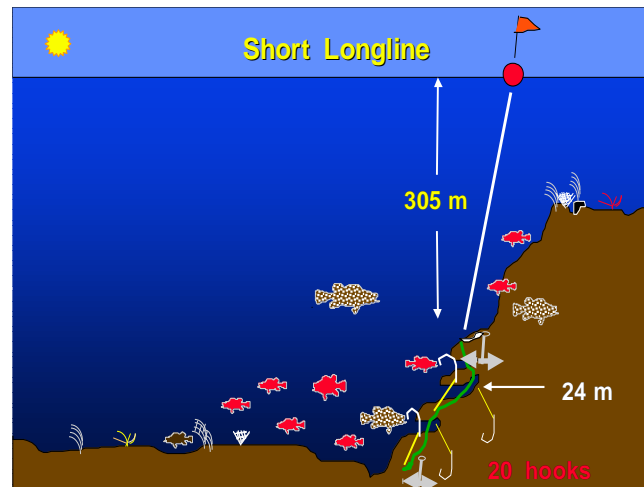
Sampling Stations

- Chevron Trap
  - ≈ 4,000 sampling stations.
  - 1,500 – 2,000 randomly selected annually.

- Short Bottom Longline
  - ≈ 300 sampling stations.
  - 100 – 150 randomly selected annually.

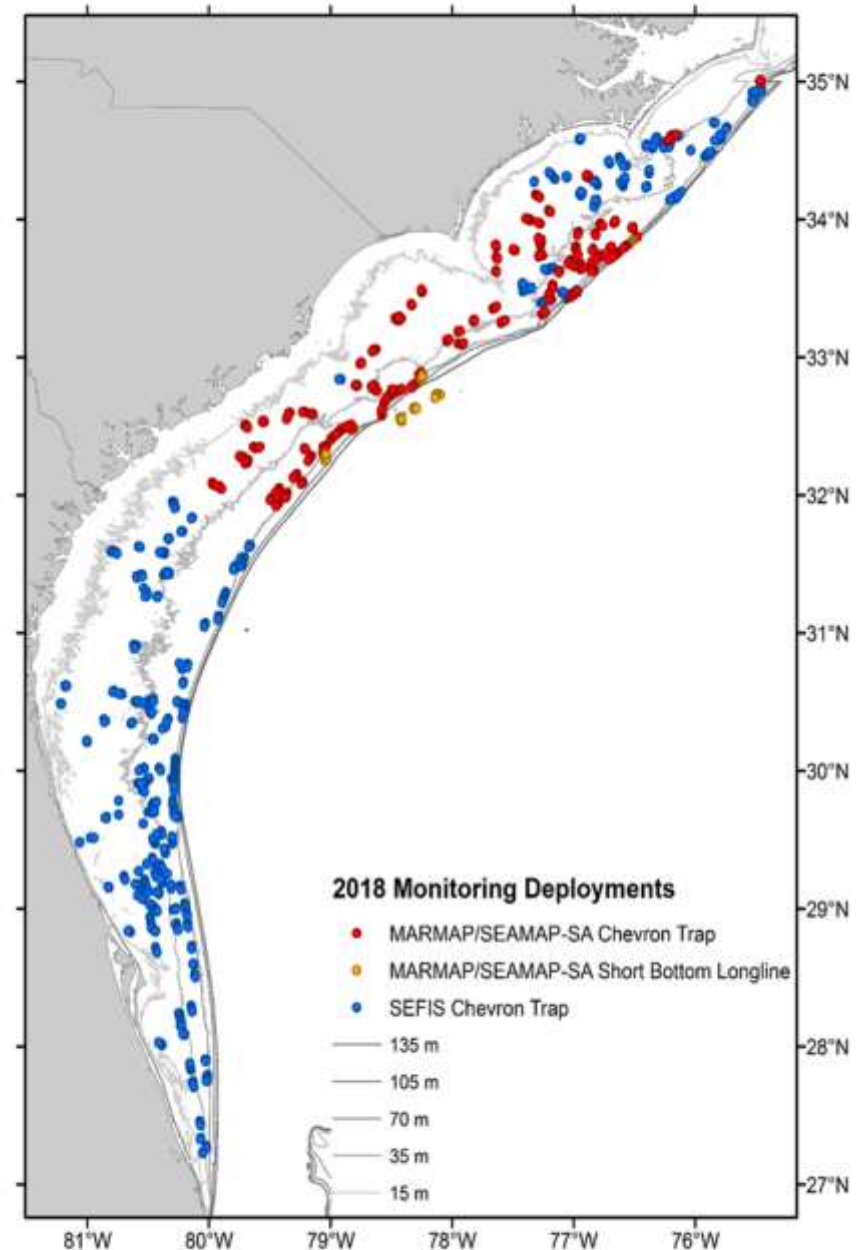**2018 Sampling Universes**

× Chevron Trap
× Short Bottom Longline
▢ Long Bottom Longline
— 135 m
— 105 m
— 70 m
— 35 m
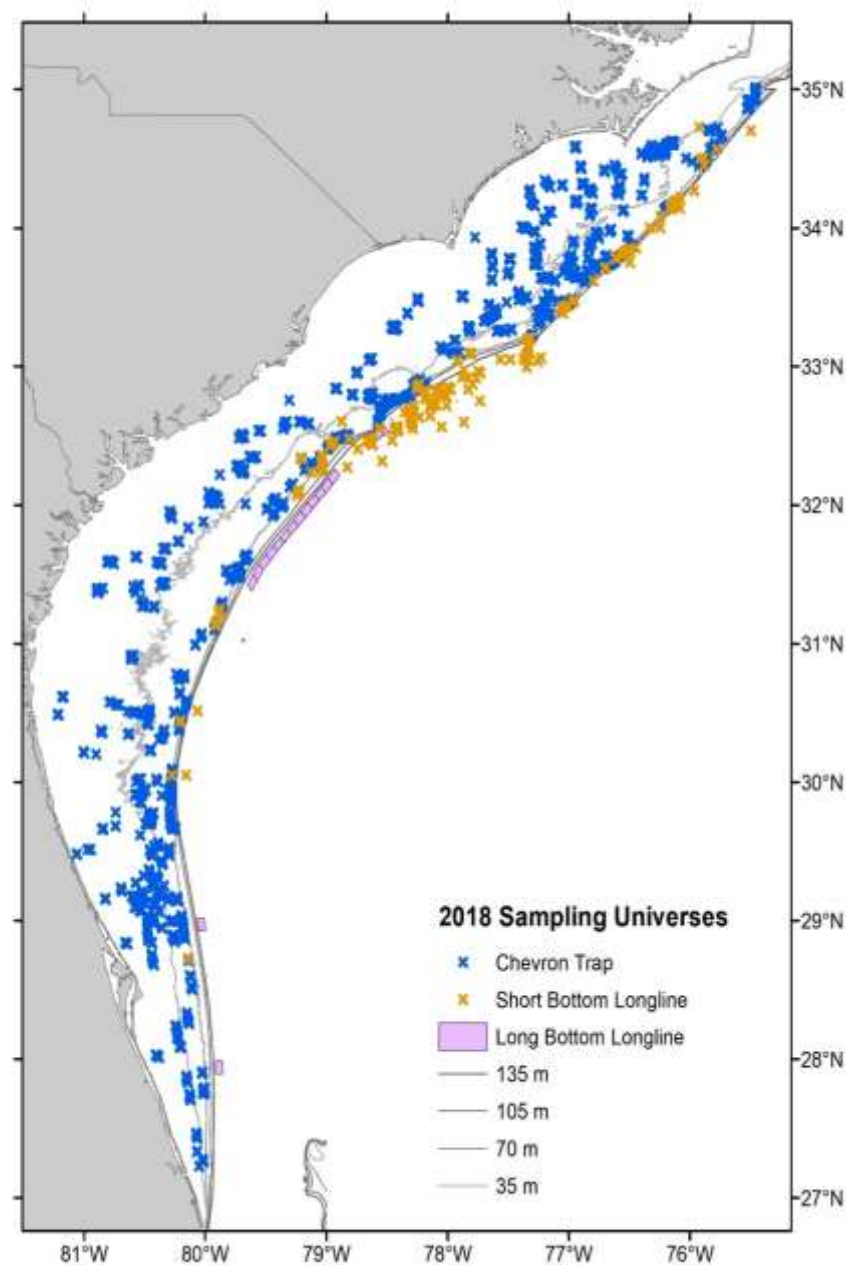
Processing and Data

- MARMAP/SEAMAP-SA:
  - **Life history**
    processing & analyses
  - **Trap and longline indices**

- SEFIS
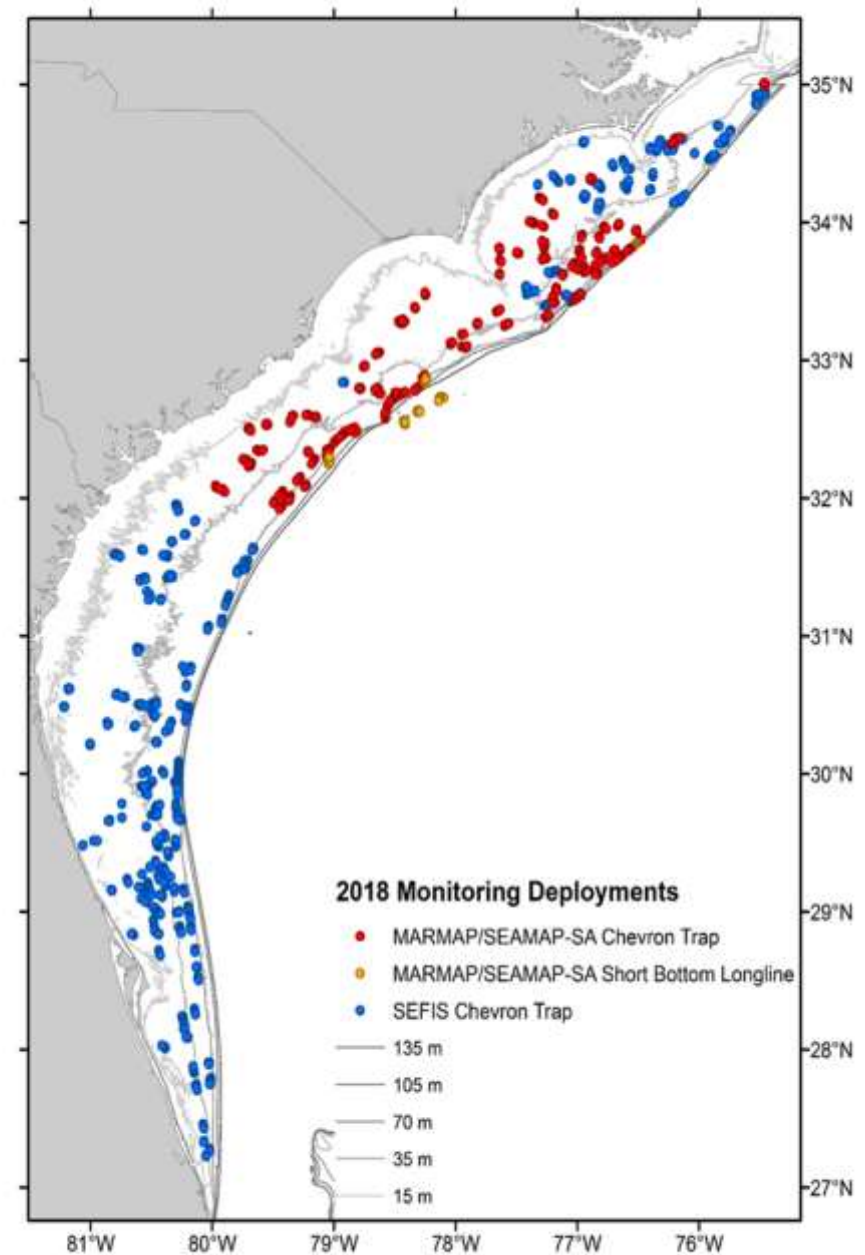 - **Video** processing & analyses

One combined database

2018

113 days at sea

2,280 gear deployments

2018 Monitoring Deployments

- ● MARMAP/SEAMAP-SA Chevron Trap
- ● MARMAP/SEAMAP-SA Short Bottom Longline
- ● SEFIS Chevron Trap
- —— 135 m
- —— 105 m
- —— 70 m
- —— 35 m
- —— 15 m

2018 Summary

- 1,784 Chevron Traps

- 77 Short Bottom Longlines

- 324 CTD deployments

- 47,342 fish (82 species) collected

- 11,367 fish (41 species) processed
  for life history (age, repro., etc.)

2018 Monitoring Deployments

- MARMAP/SEAMAP-SA Chevron Trap
- MARMAP/SEAMAP-SA Short Bottom Longline
- SEFIS Chevron Trap
- 135 m
- 105 m
- 70 m
- 35 m
- 15 m

2018 Most encountered species

Common Name	Chevron	Short BLL	Total
Tomtate	23,723		23,723
Black Sea Bass	7,657		7,657
Vermilion Snapper	3,210	1	3,210
Scup & Longspine Porgy	2,734		2,735
Red Snapper	1,963		1,983
White Grunt	1,974		1,975
Red Porgy	1,859	1	1,860
Gray Triggerfish	1,268		1,268
Bank Sea Bass	775		775
Sand Perch	593		593
Spottail Pinfish	376		376
Knobbed Porgy	100		100
Pinfish	100		100
Almaco Jack	63	10	73
Scamp	43	6	68
Snowy Grouper	23	44	67

Overview of CPUE

- Chevron trap (1990-2018)

- Short bottom longline (1996-2018)

- Standardization:

    Zero-Inflated Negative Binomial model (ZINB)

    Most appropriate method, reduces uncertainty

- Annual "Trends Report"

Trends Overview Caveats

- Summary overview, not an update of stock status

- Constraints, stratification, units, and models for CPUE may be different from those used in (SEDAR) stock assessments (e.g. CVID)

- Not all species have been assessed or updated (through SEDAR process) and not all trends in analyses have been discussed in (SEDAR) assessment framework

Figures

- Index graphs
  - Normalized to long term average (=1).
  - Black line = ZINB standardized index.
  - Gray area = ± 95% CI.
  - Red dot = nominal values (not standardized).

MARMAP/SEAMAP-SA/SEFIS Reef Fish Survey Update - SAFMC meeting, June 2019
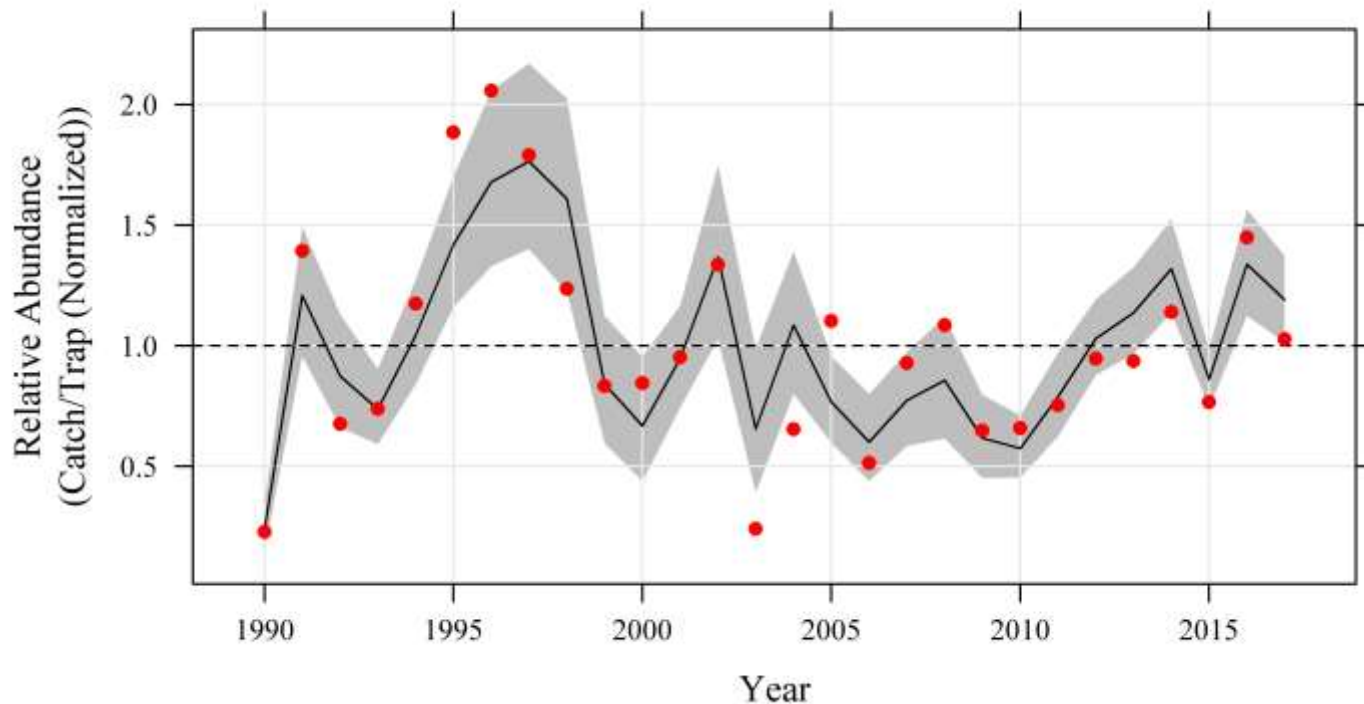
Figures maps

- Nominal CPUE in quartiles.
- Warmer colors = higher catch.
- Two maps: 1997-2001 and 2013-2018

1997-2001 Chevron

- High
- Low
- Absent
- 135 m
- 105 m
- 70 m
- 35 m

2014-2018 Chevron Traps

- High
- Low
- Absent
- 135 m
- 105 m
- 70 m
- 35 m
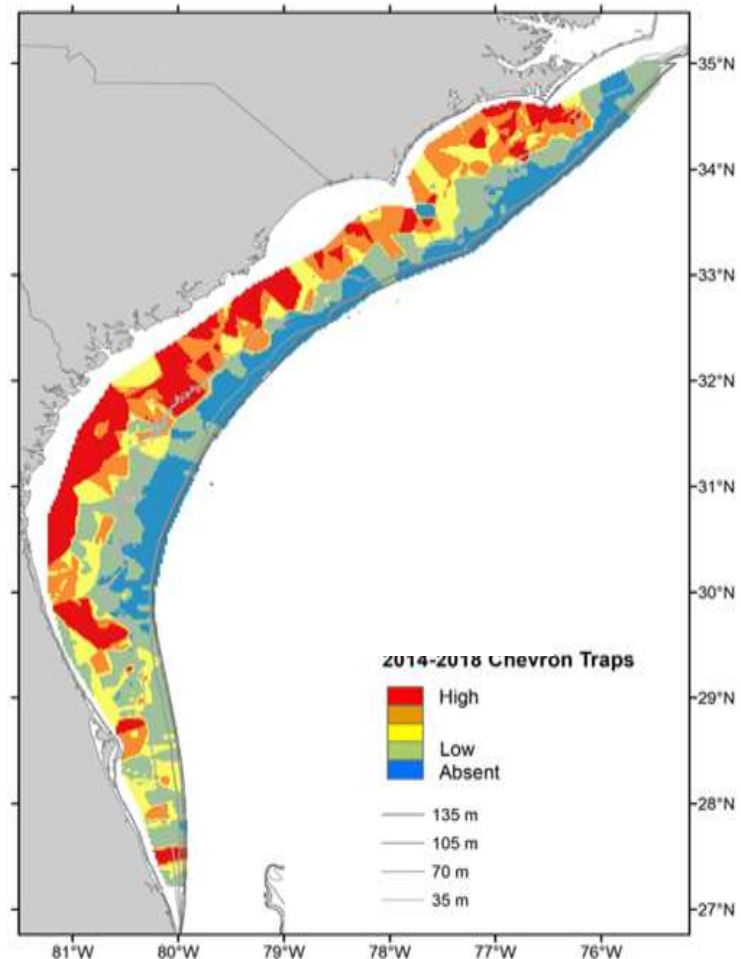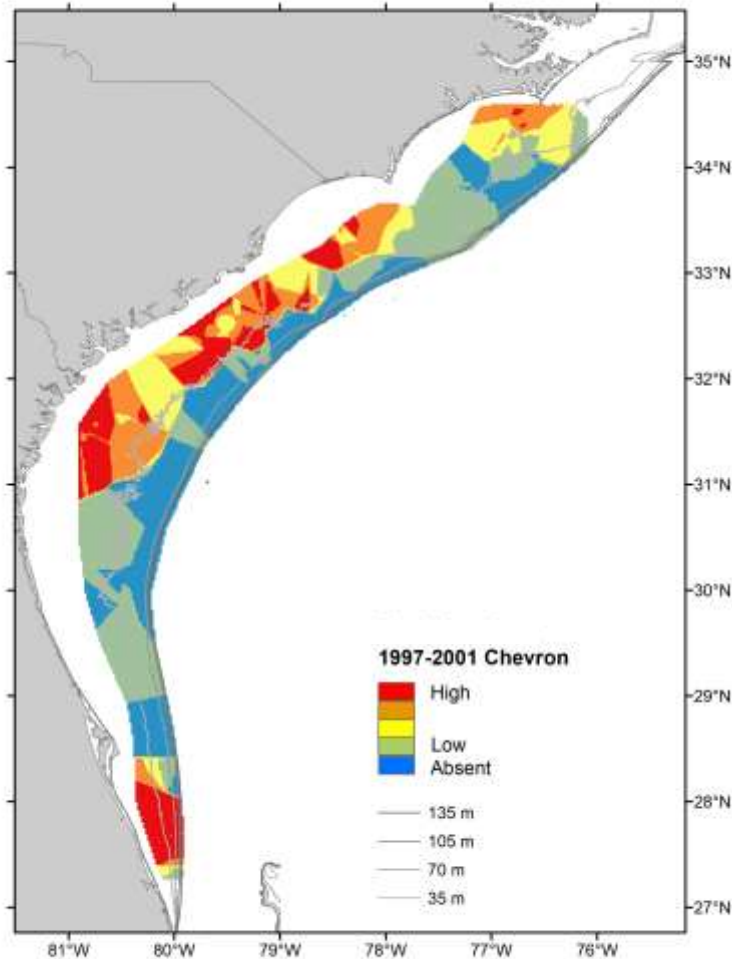
Fishery-Independent Abundance Trends 2018

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Photo: SERFS

Gray Triggerfish – Chevron Trap

Gray Triggerfish
2014-2018 Chevron Traps

- High
- Low
- Absent

- 135 m
- 105 m
- 70 m
- 35 m
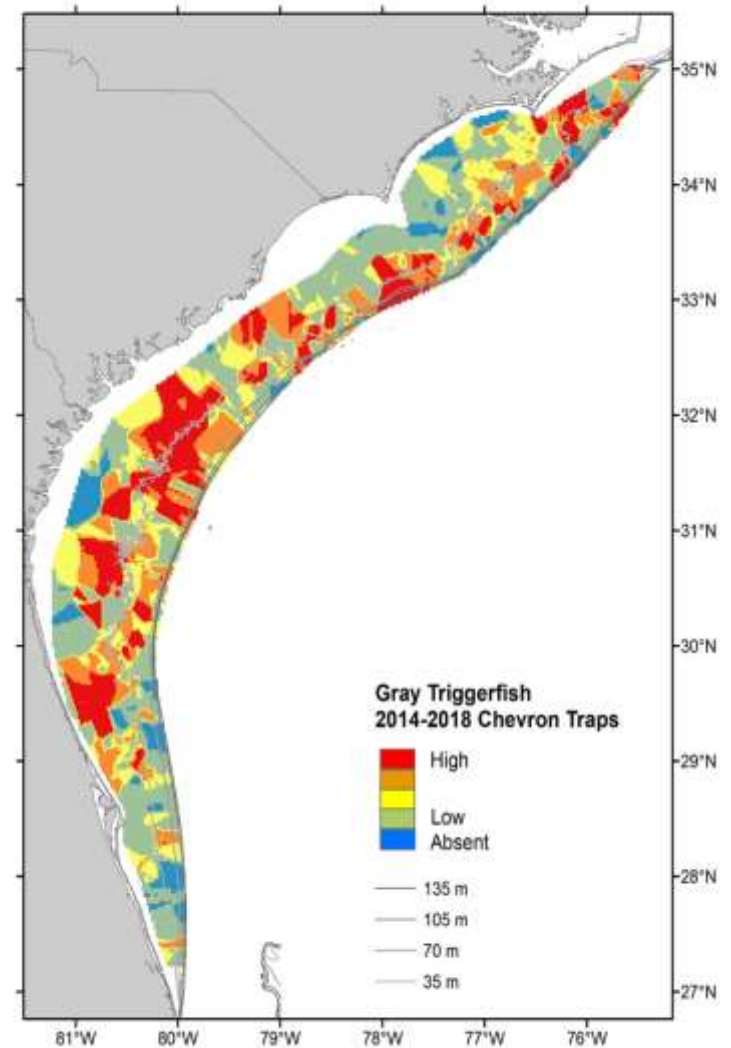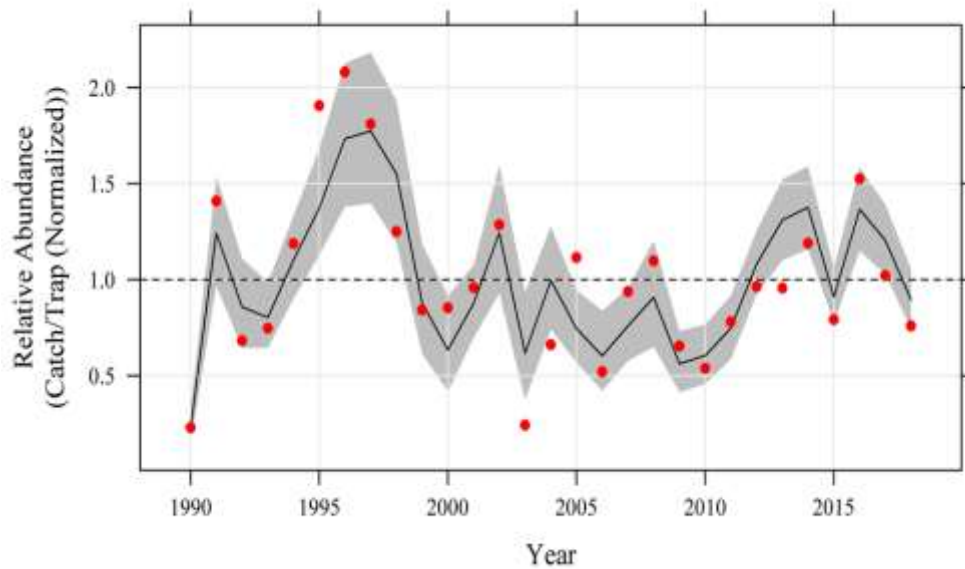
Tomtate – Chevron Trap
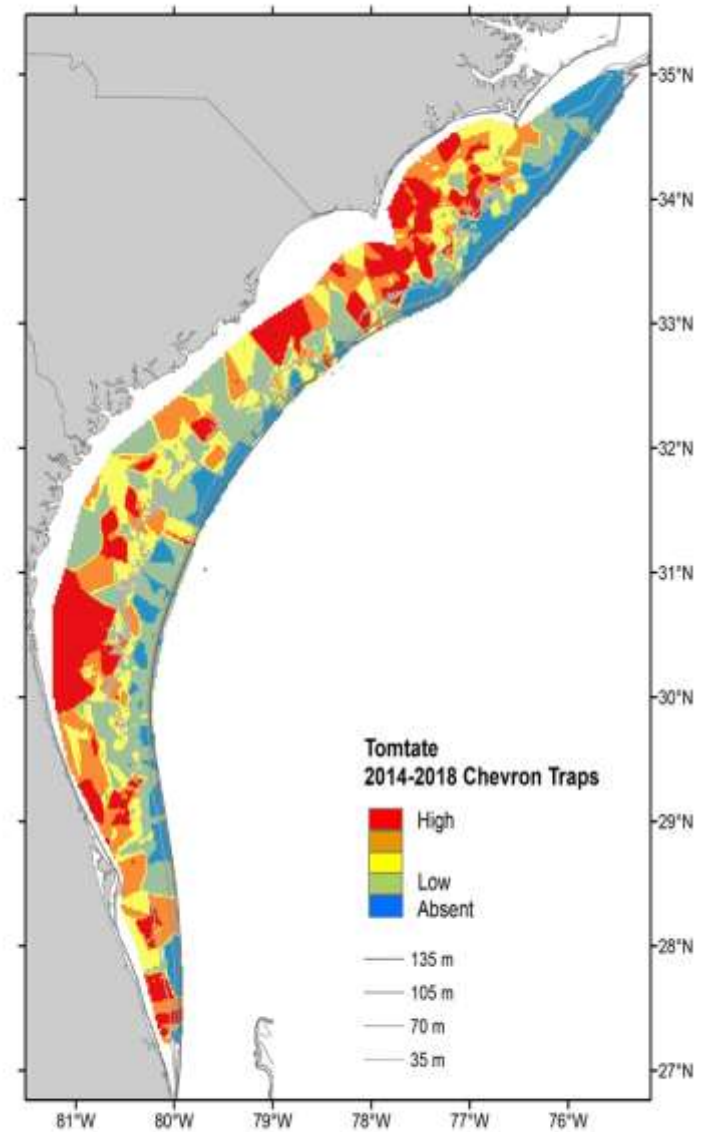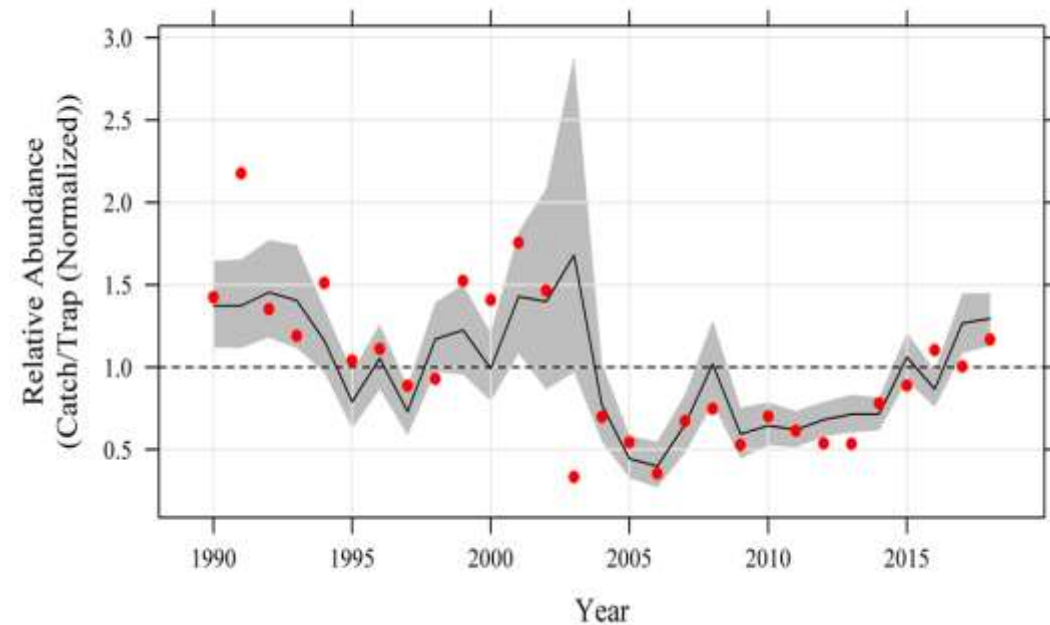
White Grunt – Chevron Trap

White Grunt
2014-2018 Chevron Traps

High
Low
Absent

135 m
105 m
70 m
35 m

Red Snapper – Chevron Trap

Average CPUE 2.8

**Red Snapper
2014-2018 Chevron Traps**

- High
- Low
- Absent

— 135 m
— 105 m
— 70 m
— 35 m
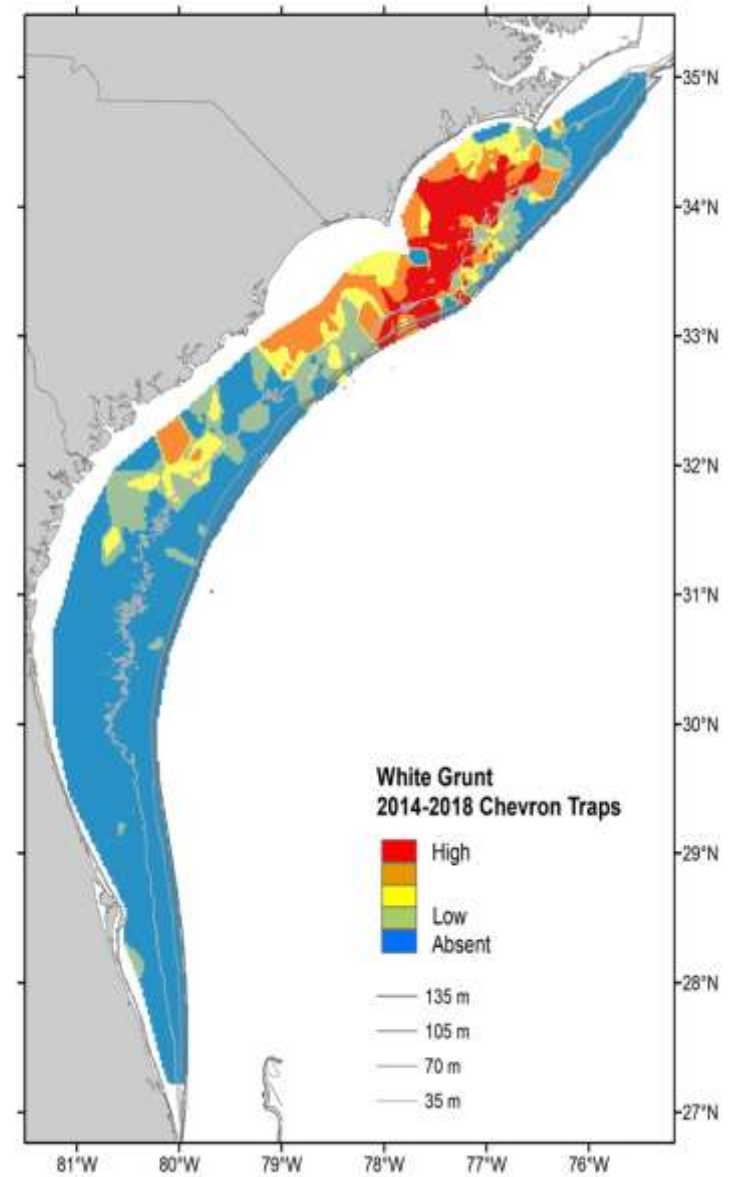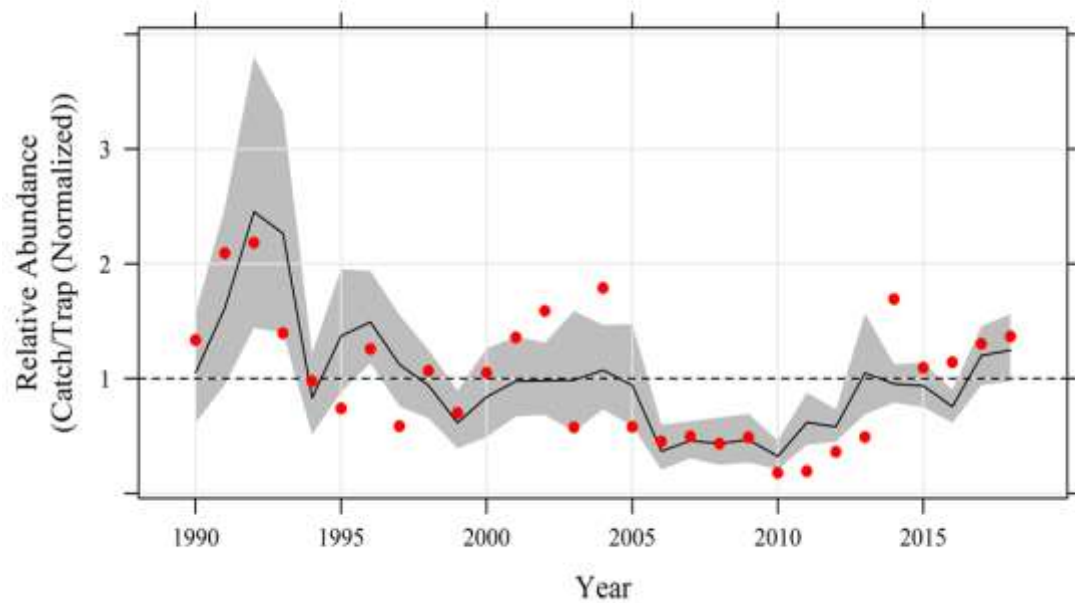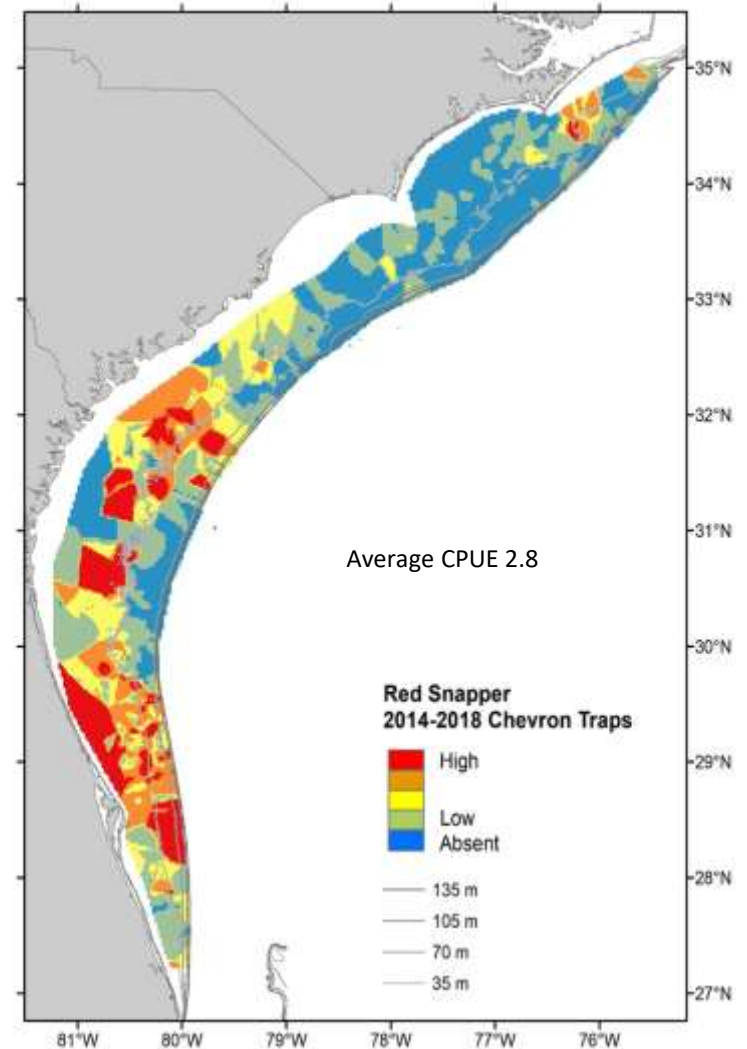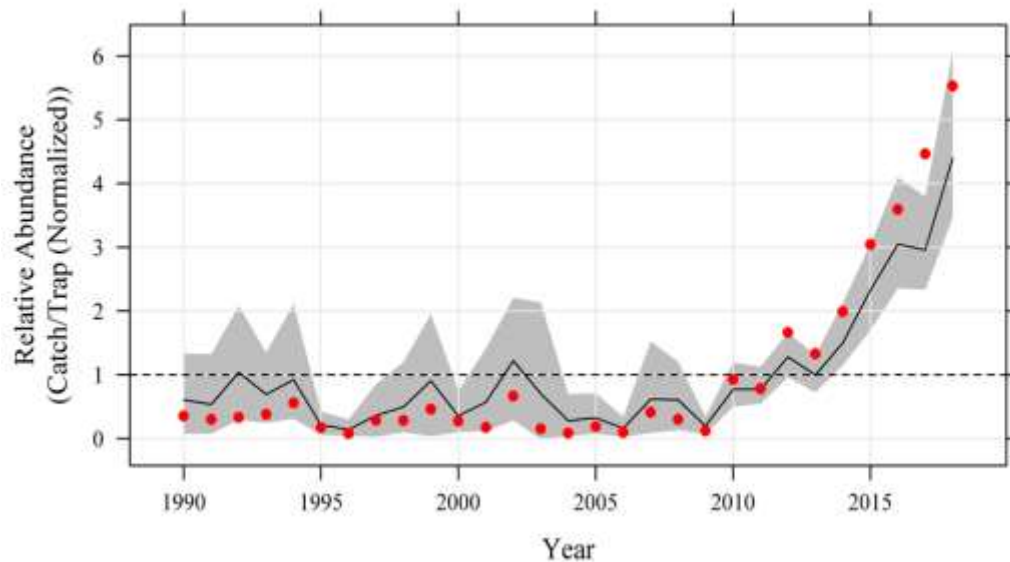
Vermilion Snapper – Chevron Trap
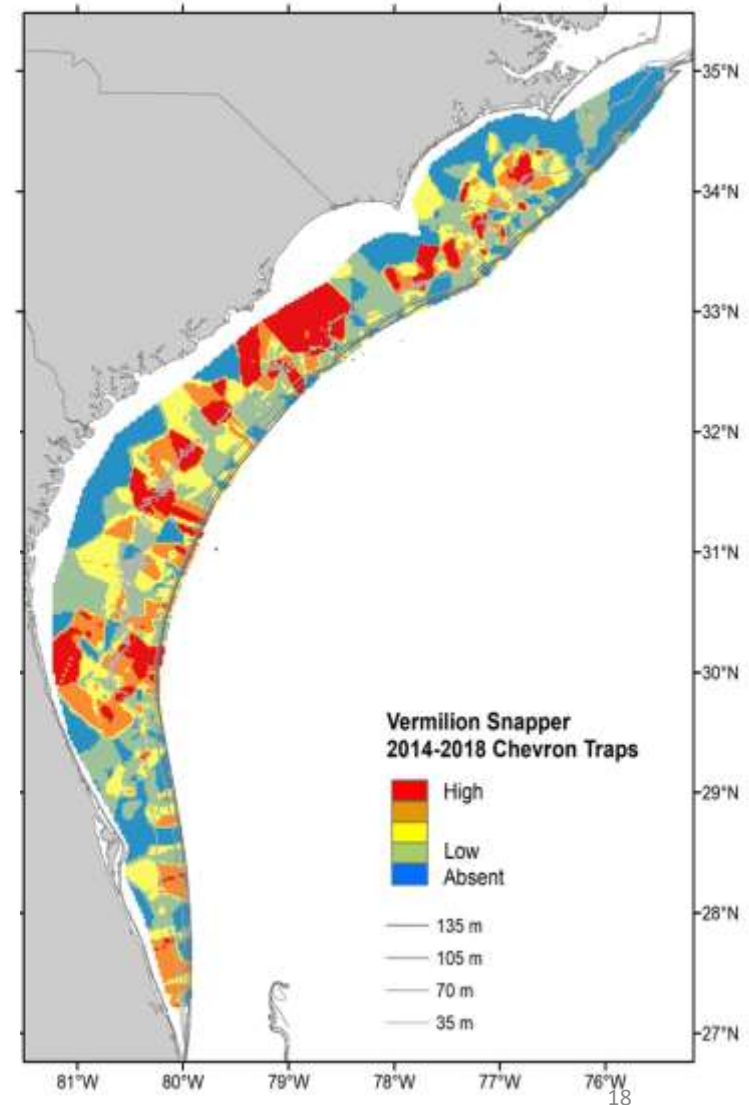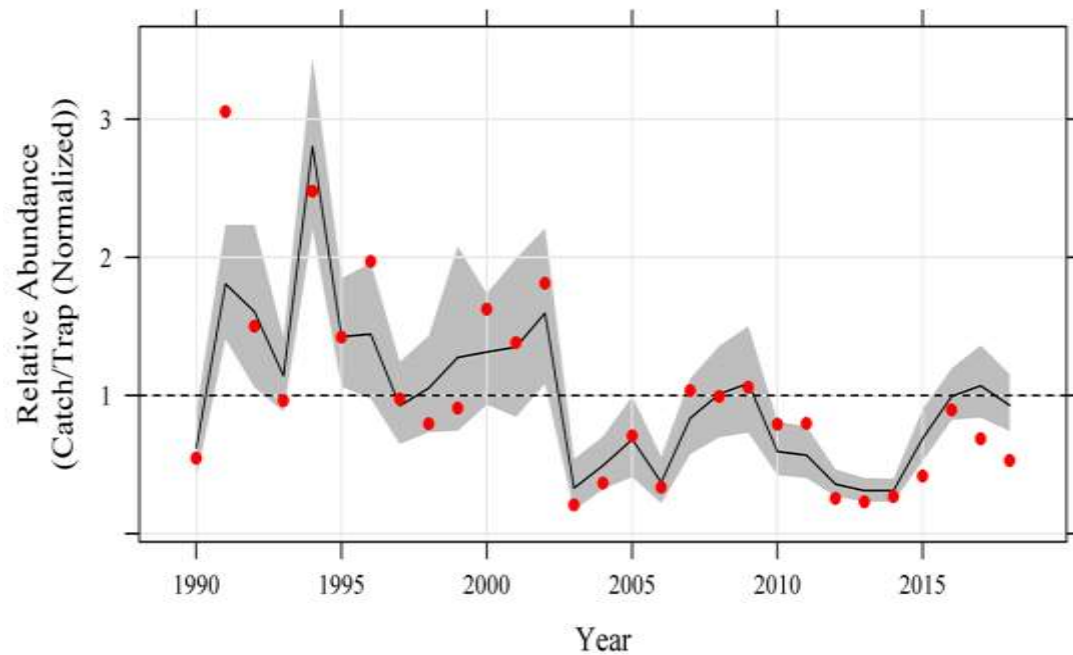
Black Sea Bass – Chevron Trap
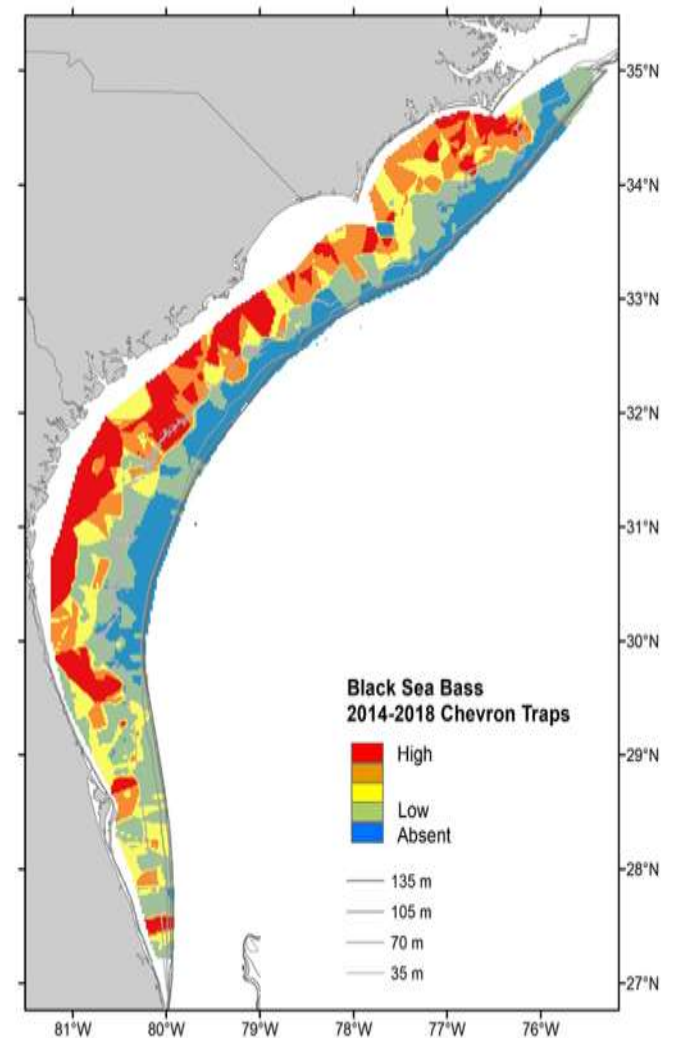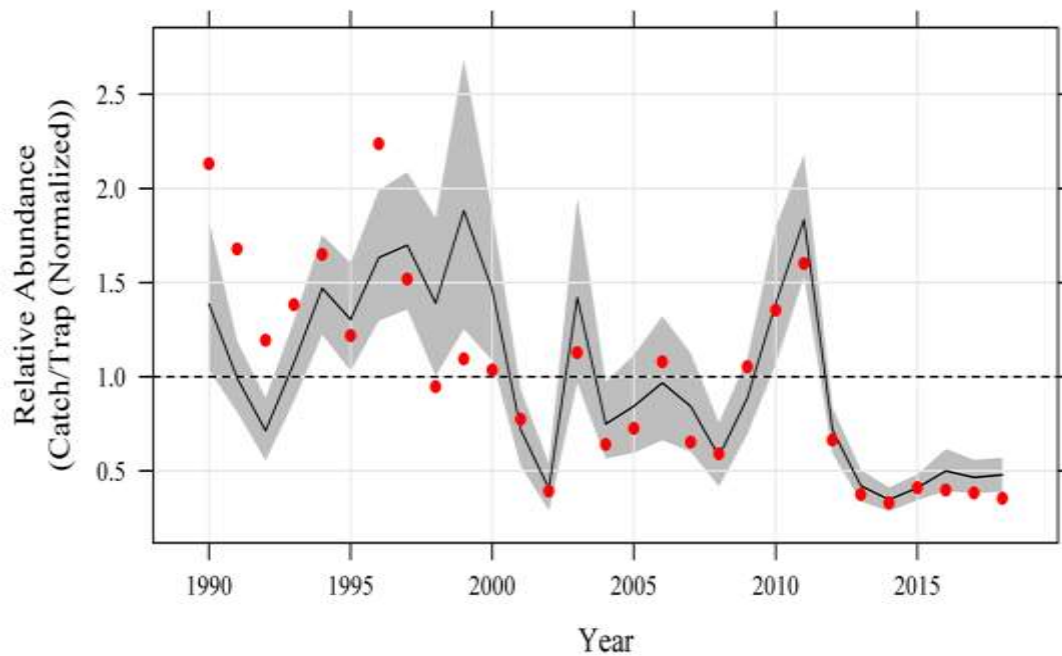
Bank Sea Bass – Chevron Trap

Gag – Chevron Trap

Gag Grouper
2014-2018 Chevron Traps

High

Low
Absent

— 135 m
— 105 m
— 70 m
— 35 m

Red Grouper – Chevron Trap

Average CPUE: 0.1

Red Grouper
2014-2018 Chevron Traps
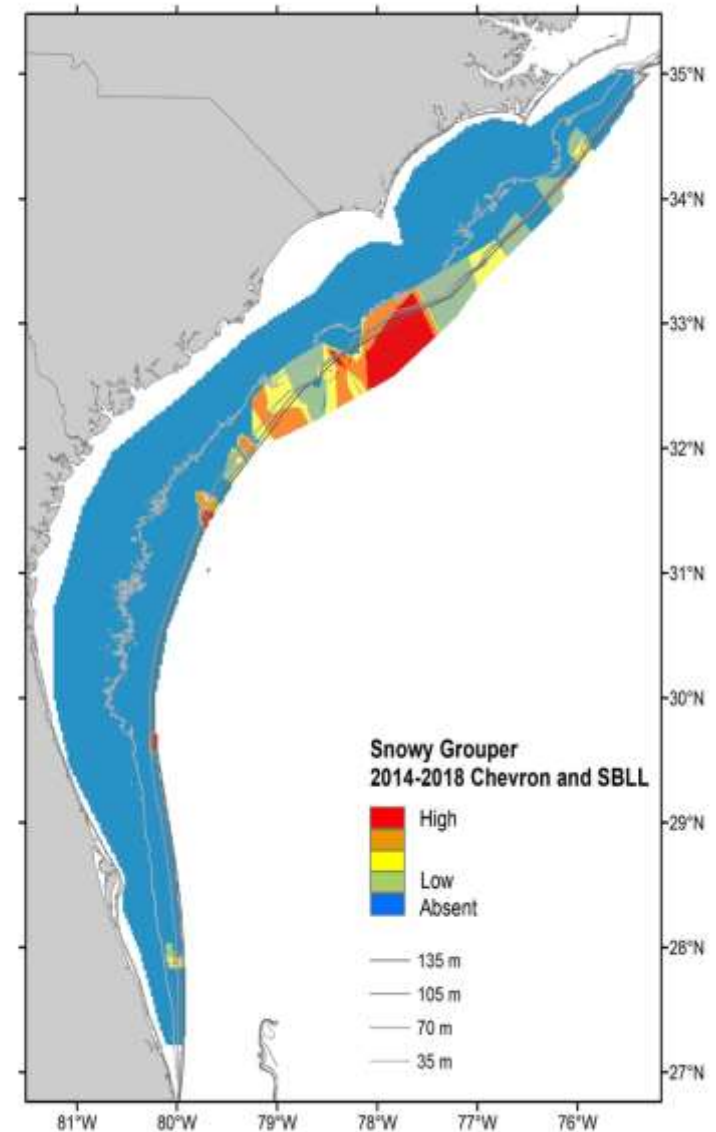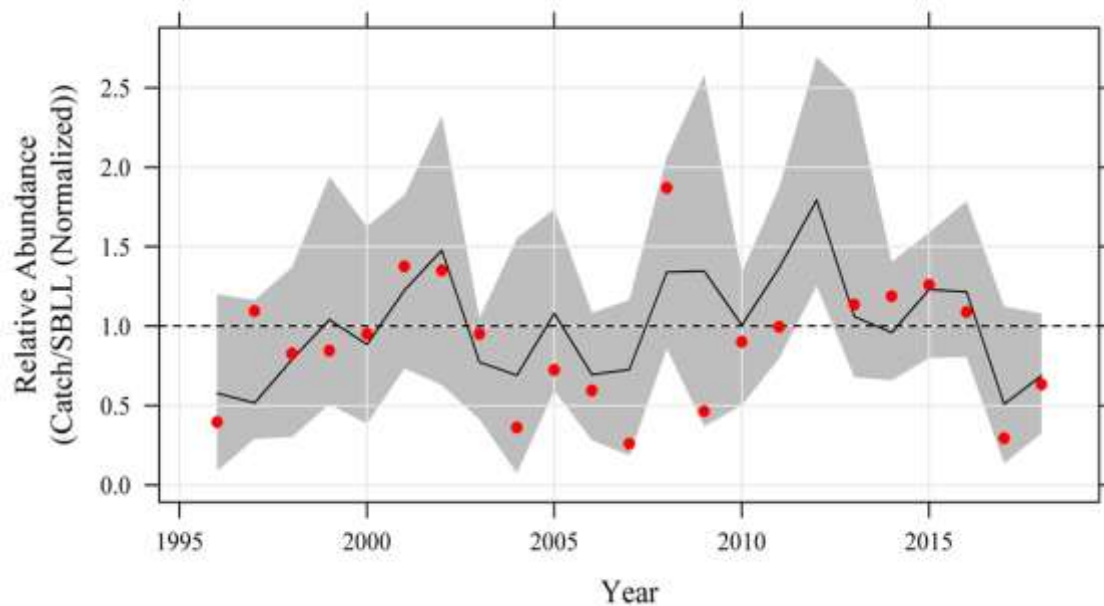
- High
- Low
- Absent

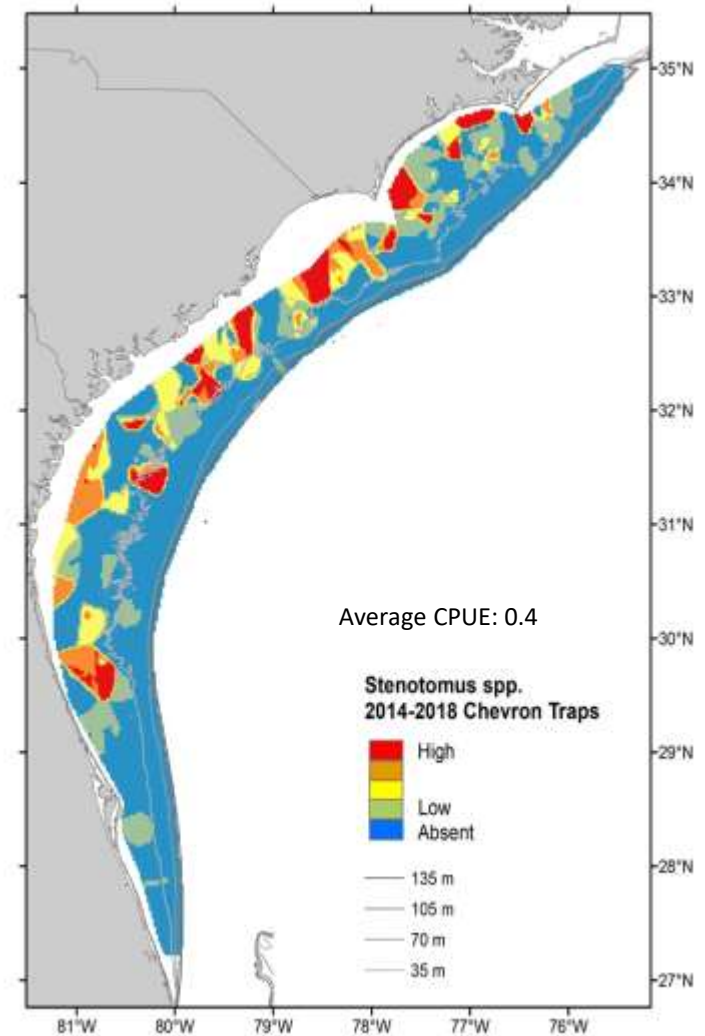— 135 m
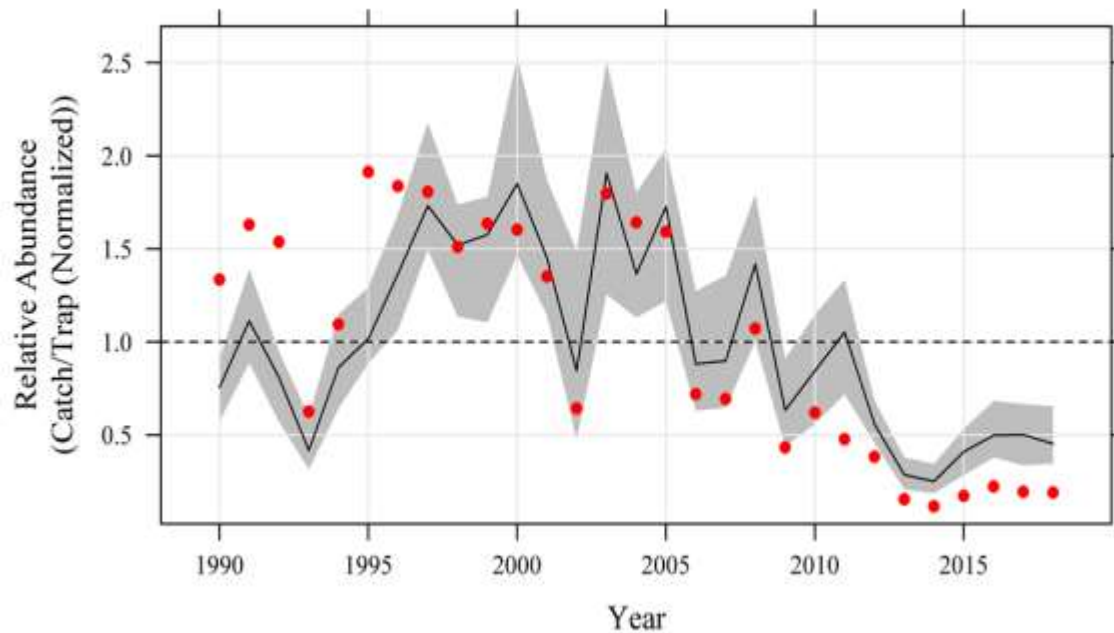— 105 m
— 70 m
— 35 m
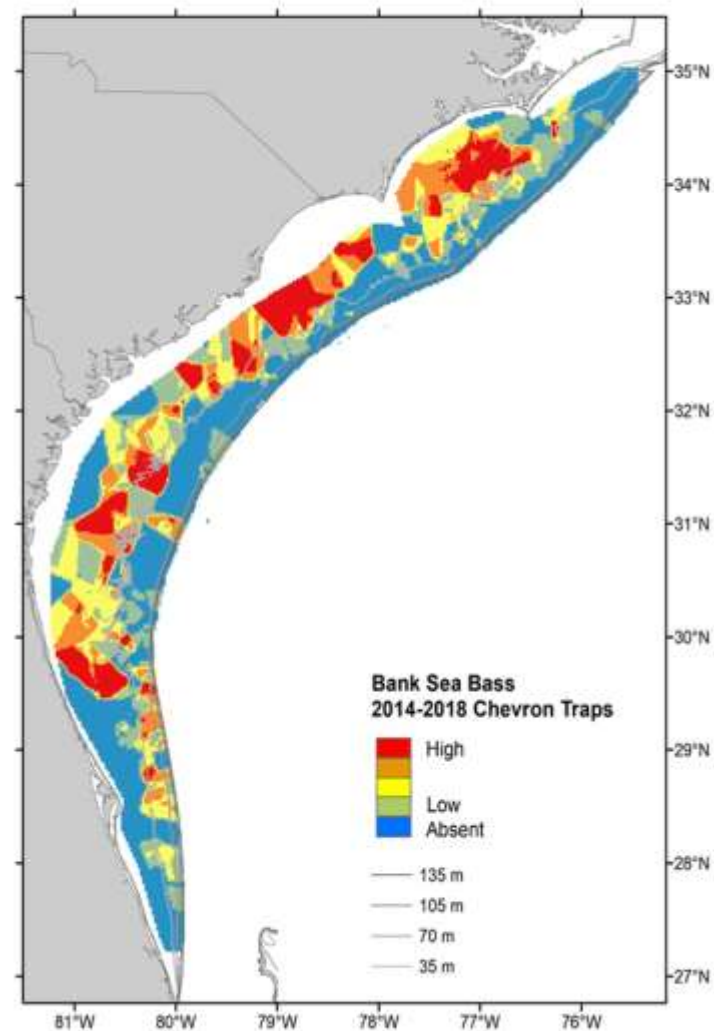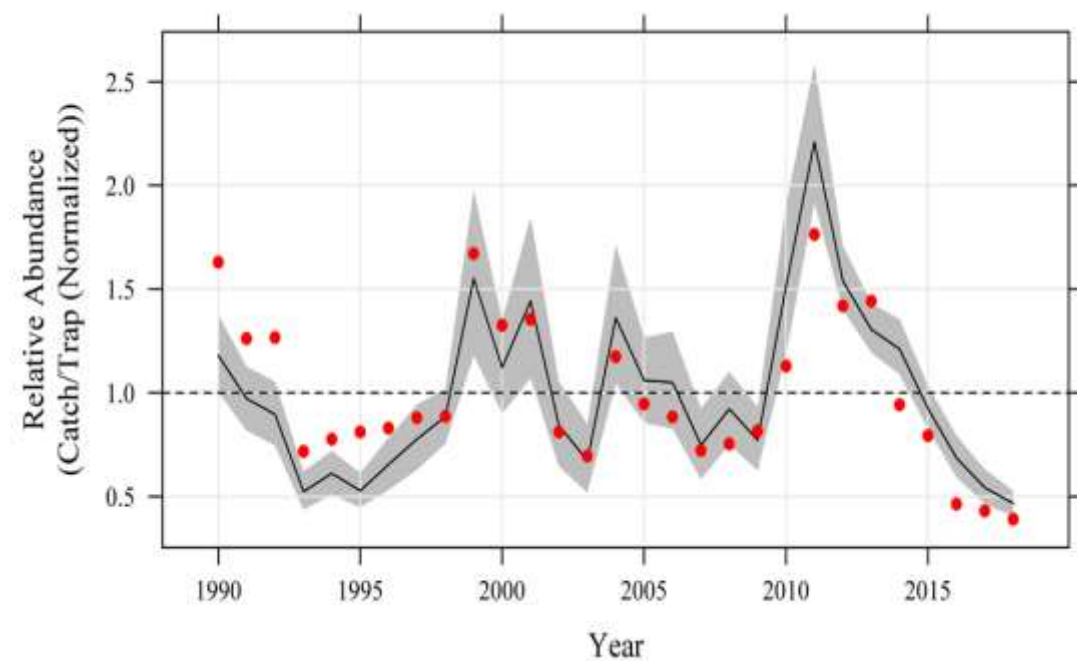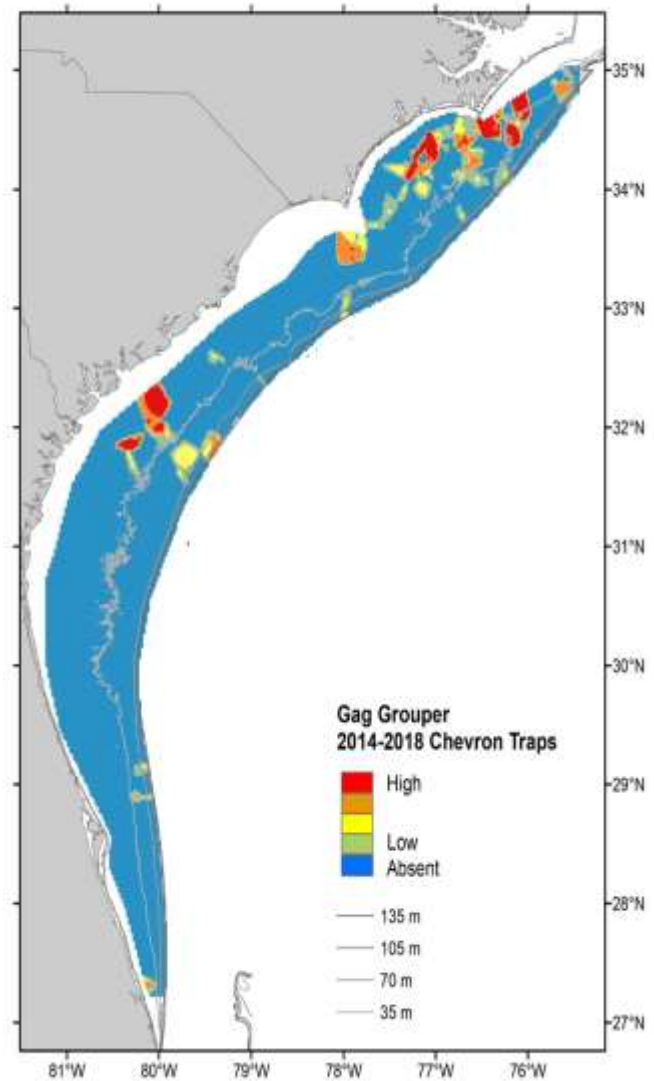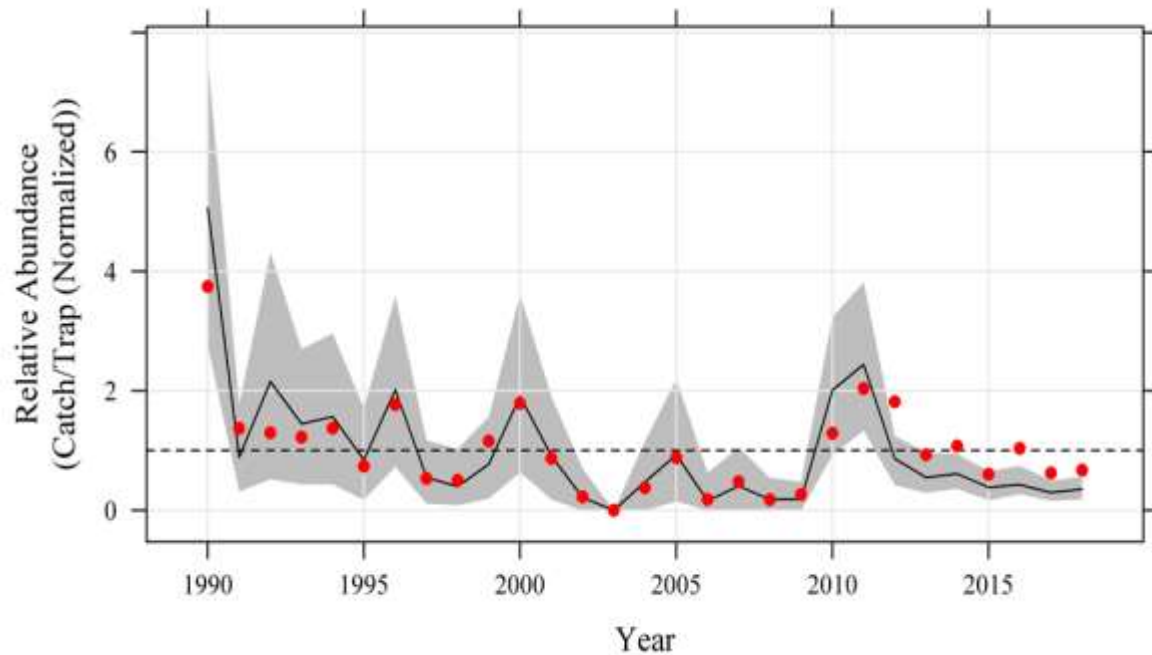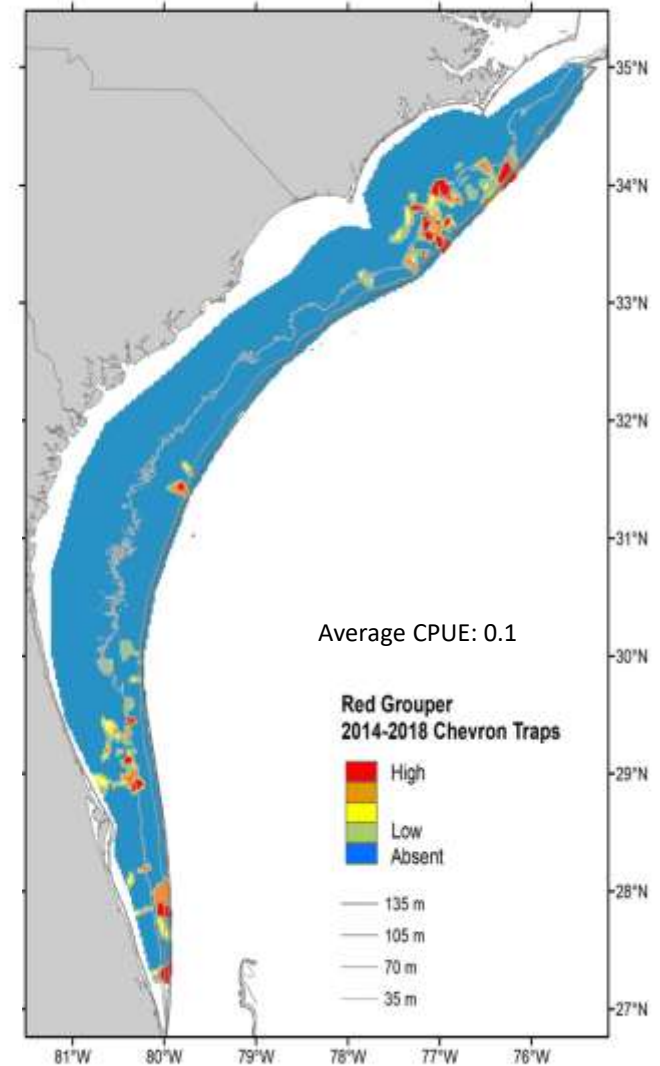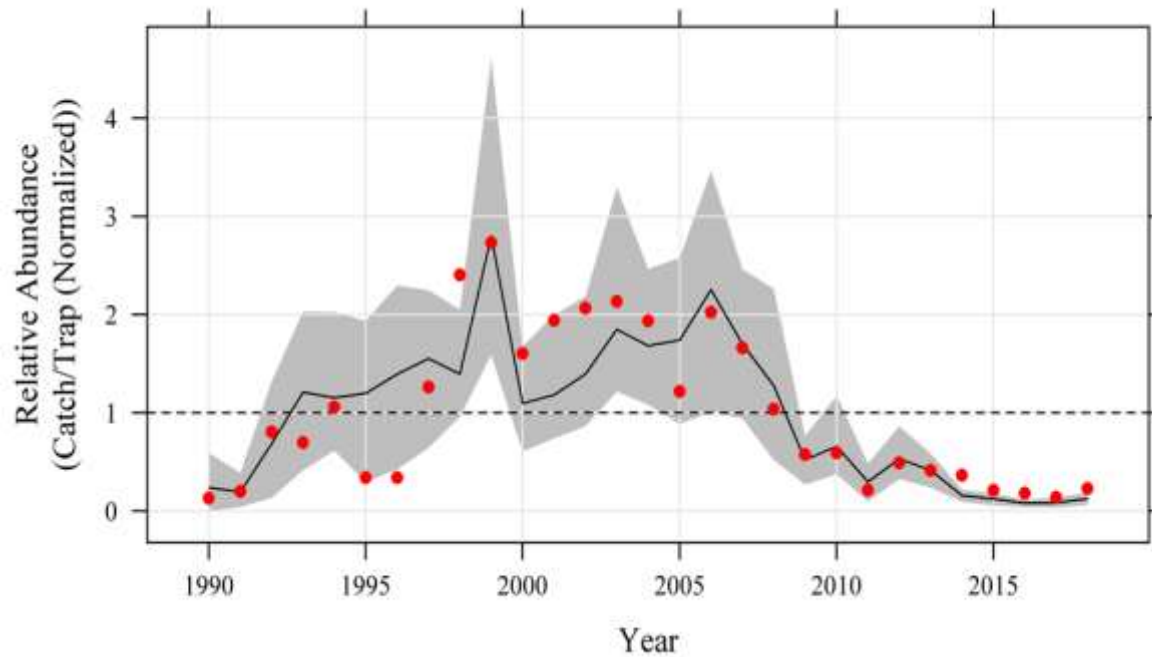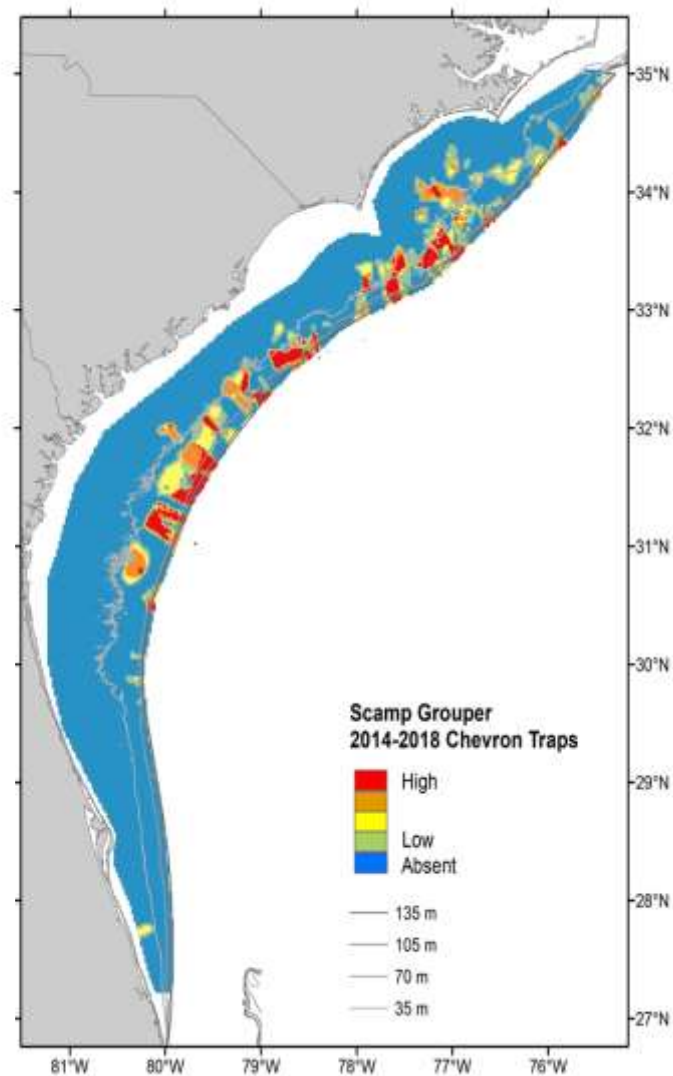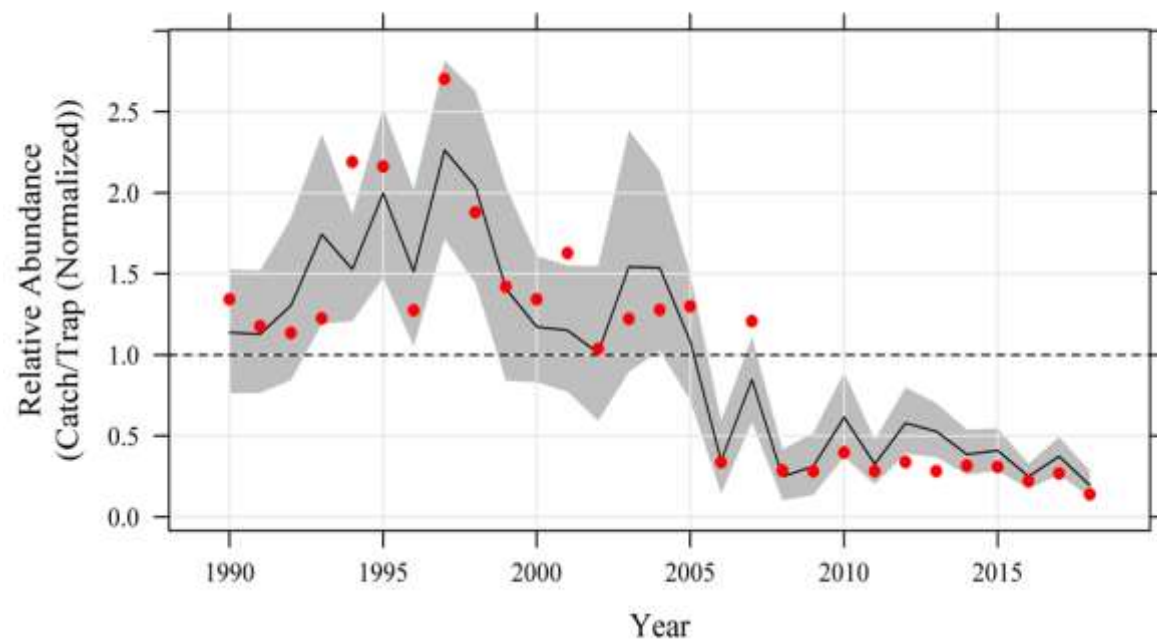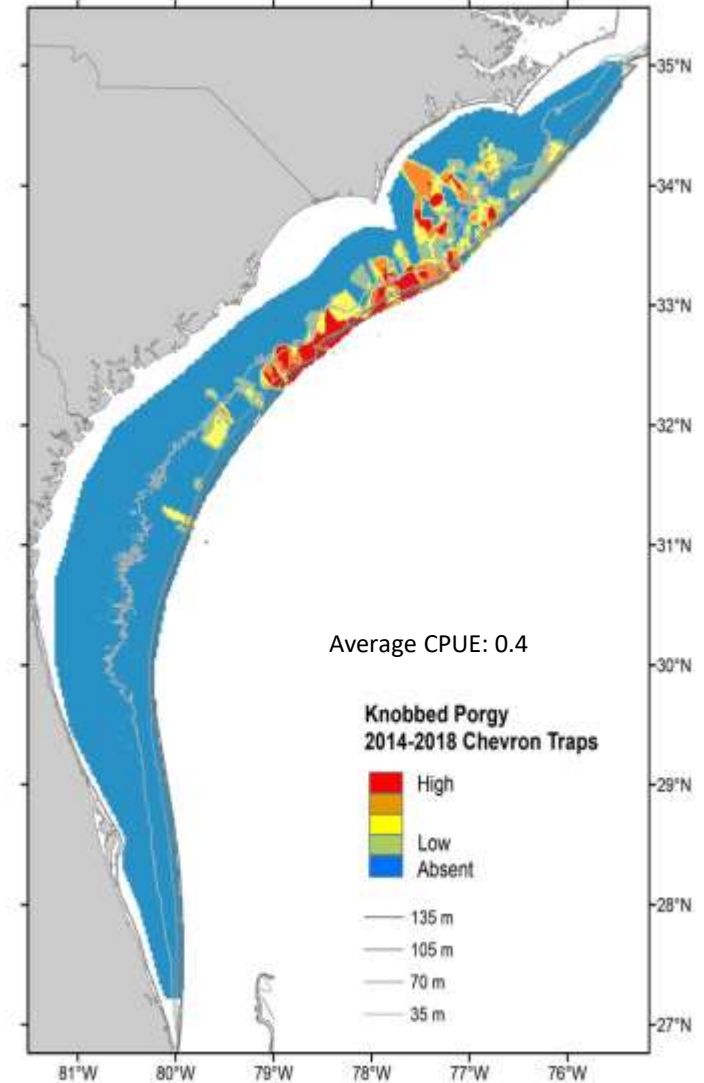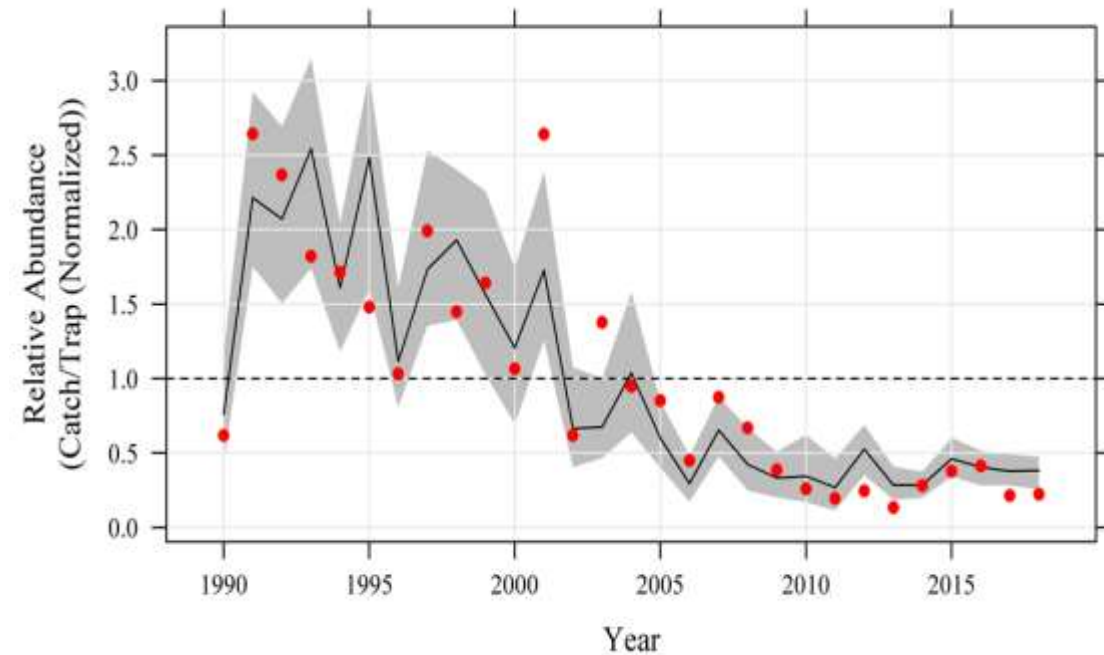
Scamp – Chevron Trap

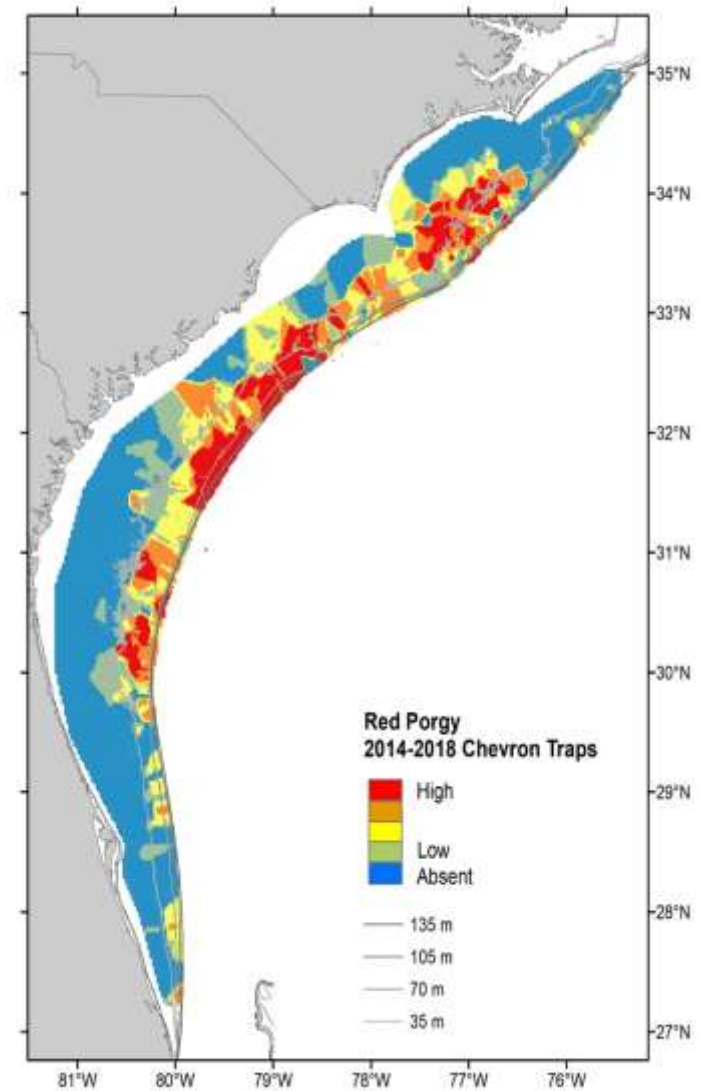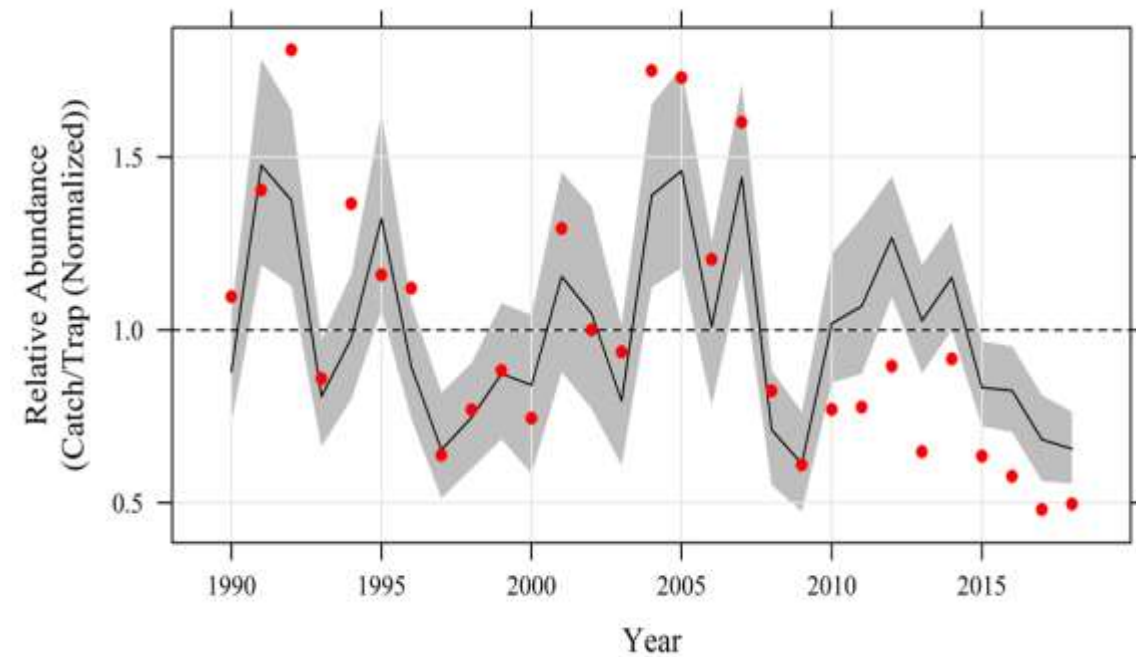# Snowy Grouper – Chevron Trap
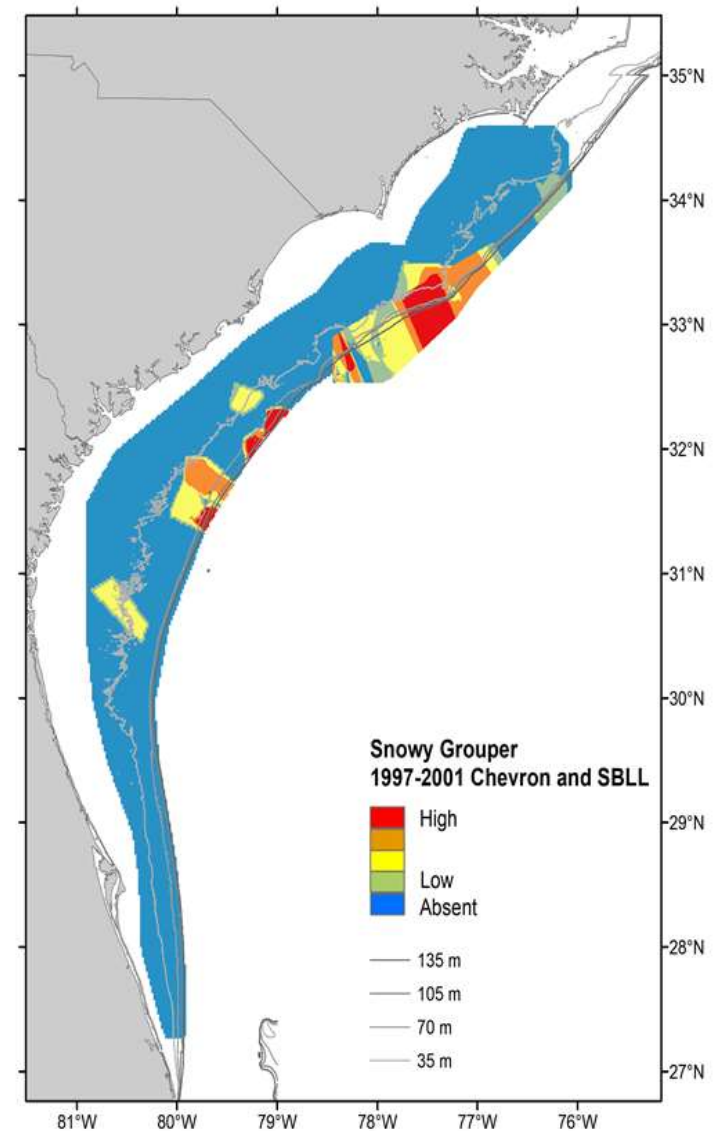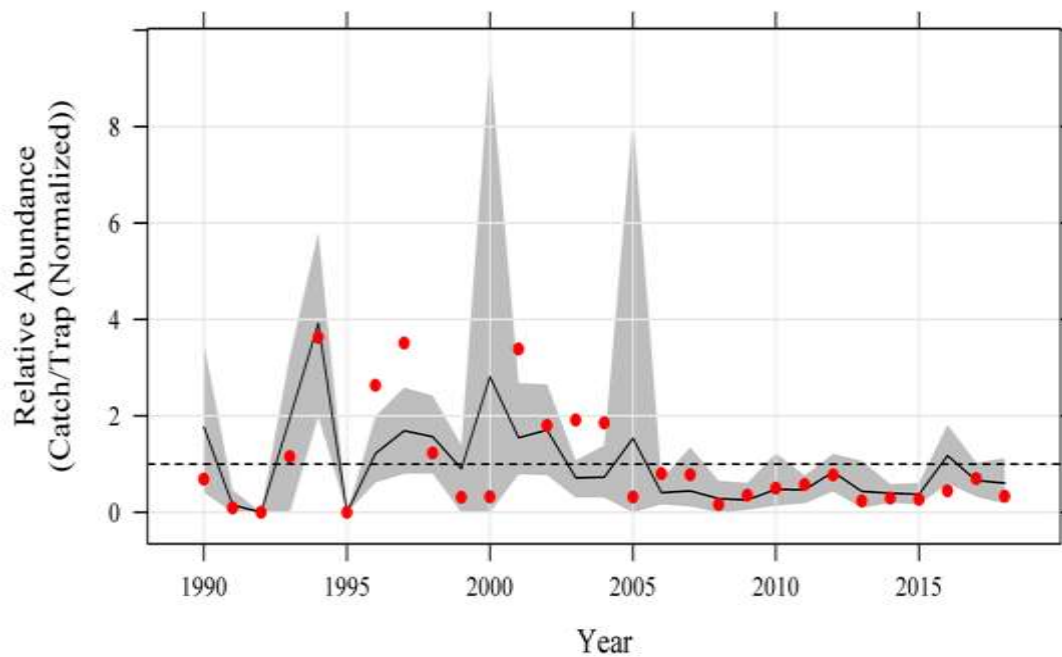
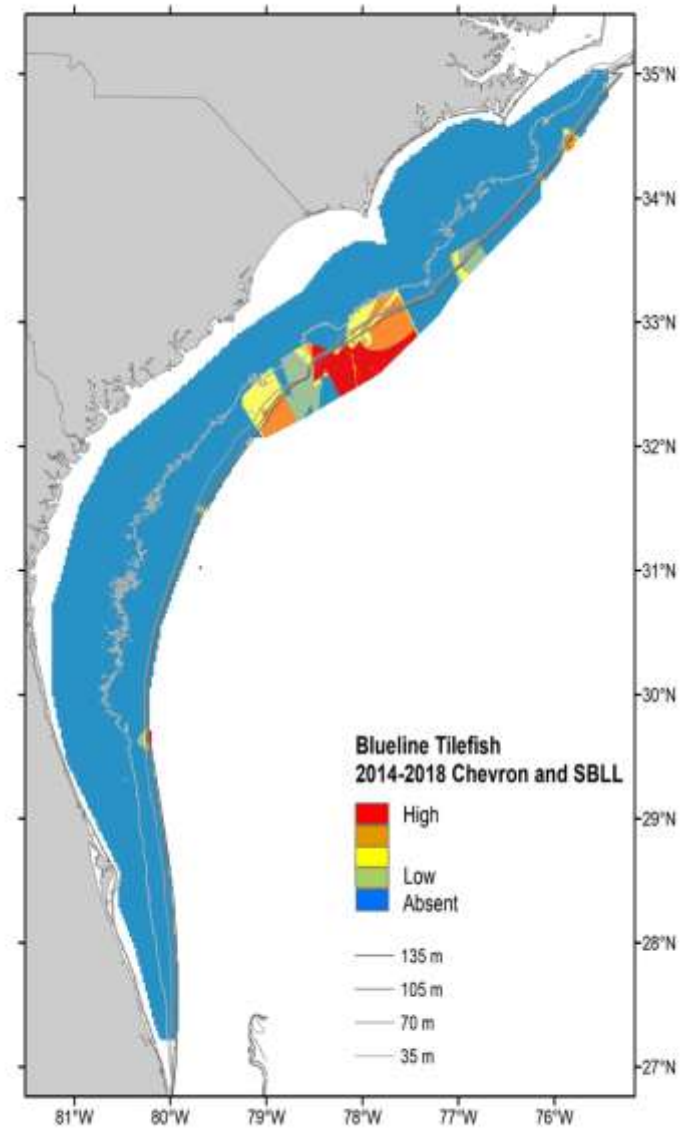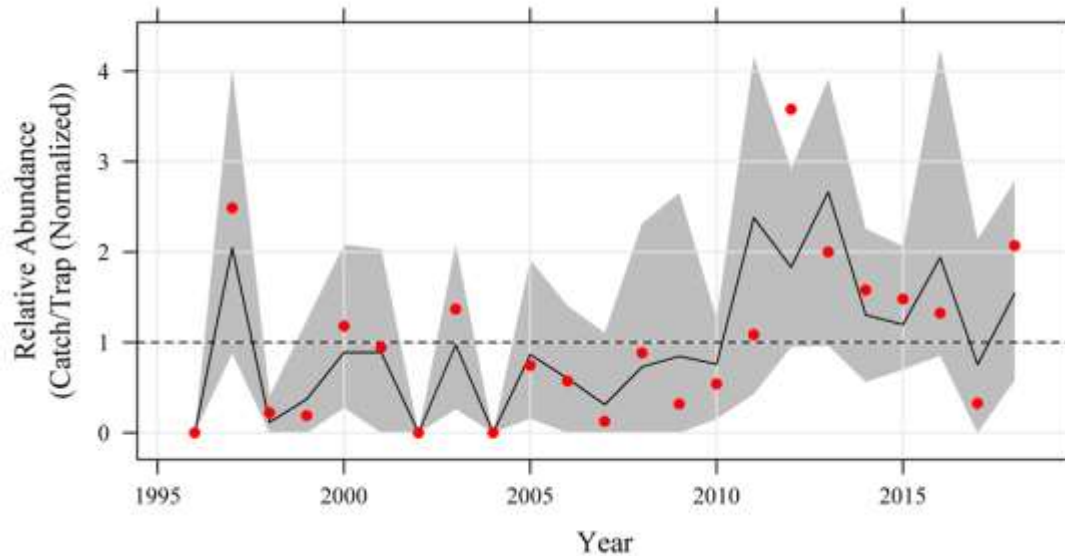# Snowy Grouper - Short Bottom Longline

Stenotomus spec. – Chevron Trap

Knobbed Porgy – Chevron Trap

Average CPUE: 0.4

Knobbed Porgy
2014-2018 Chevron Traps

MARMAP/SEAMAP-SA/SEFIS Reef Fish Survey Update - SAFMC meeting, June 2019

Red Porgy – Chevron Trap

Blueline Tilefish – Short Bottom Longline

2019
SERFS update

Sampling Season:

April 29th – October 19th

Planned ≈ 100 days at sea.

Acknowledgements:

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

Past and Present

Questions