

The South East Reef Fish Survey

2014 Update

Sampling Activities and Chevron Trap CPUE



Presentation to the SAFMC
June September 2015

South East Reef Fish Survey (**SERFS**)

- MARMAP since 1972 - reef fish sampling since late 70's
- SEAMAP-SA since 1986 - reef fish sampling since 2009
- SEFIS - reef fish sampling since 2010

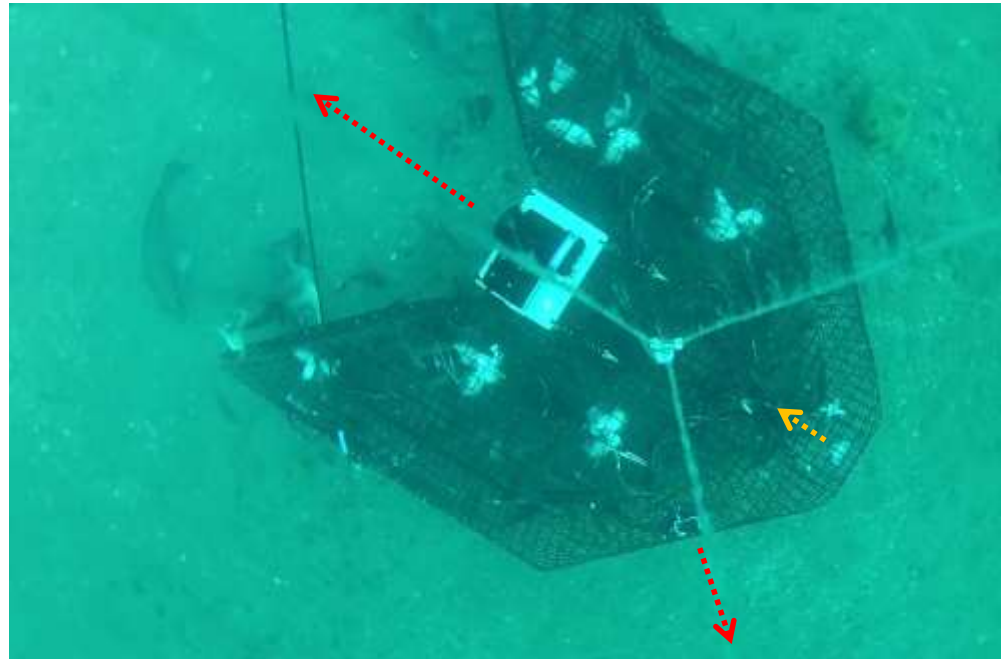
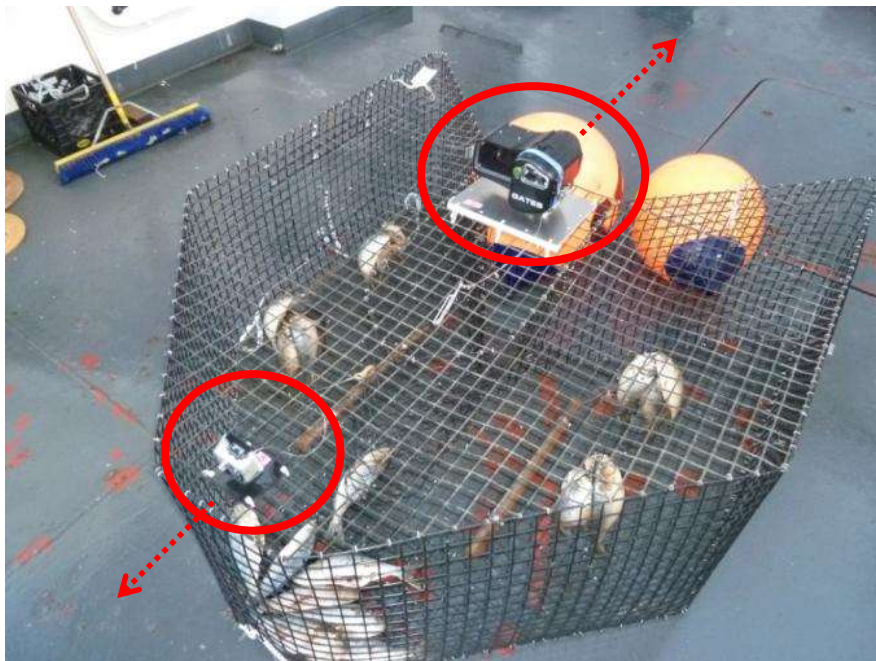


MARine Resources Monitoring, Assessment and Prediction
South East Area Monitoring and Assessment Program (South Atlantic)
South East Fishery Independent Survey



Current primary gear: Chevron trap

- Consistent and standardized use since 1990
- Deployed in depths to ≈ 120 m
- Soak time ≈ 90 minutes, baited with clupeids
- 1-3 video cameras on each trap



Sampling design

- >3,800 sampling stations with known live-bottom habitat
- 1,500-2,000 random selection stations
- distance at least 200m

Sampling

- MARMAP/SEAMAP-SA: NC and SC
- SEFIS: GA and FL

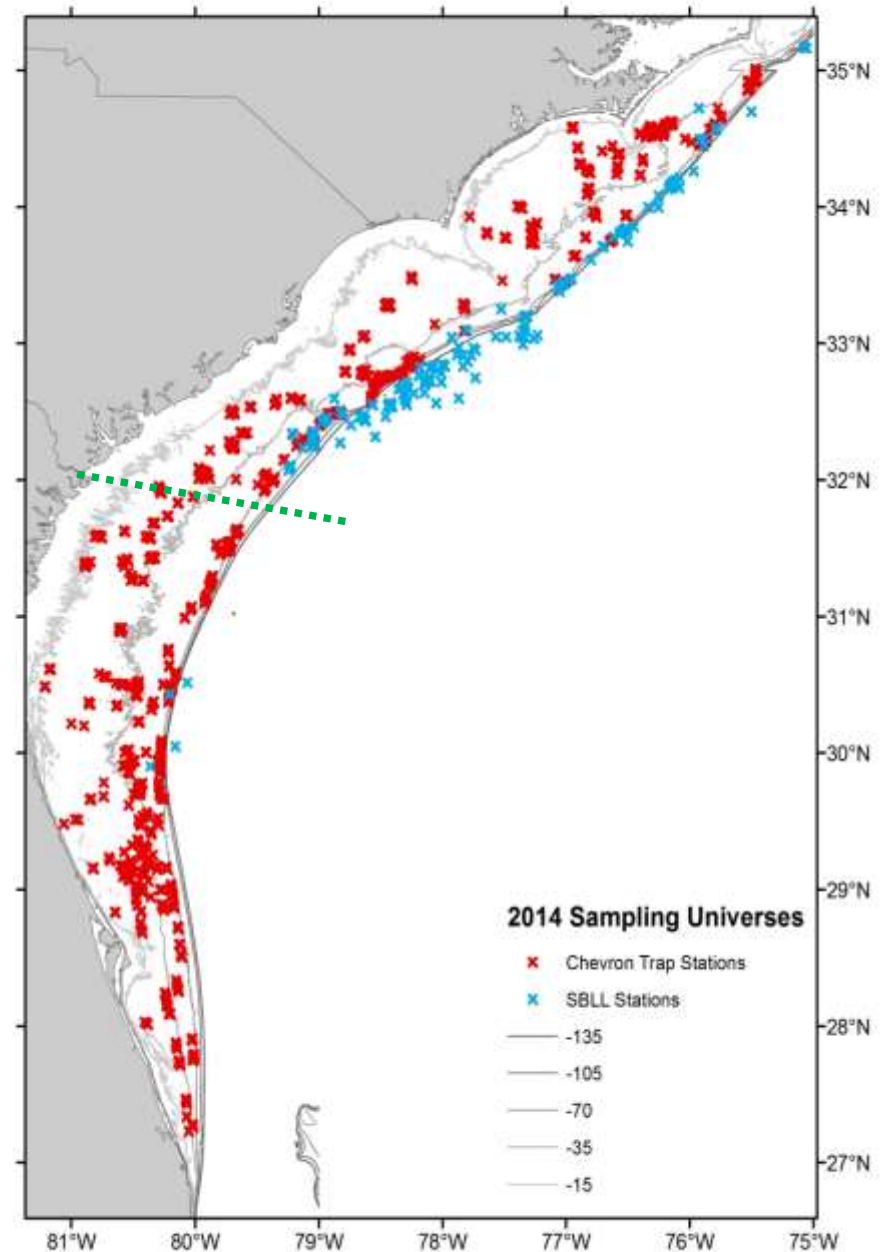
Sample and data processing

- MARMAP/SEAMAP-SA:
 - Life history processing & analyses
- SEFIS
 - Video processing & analyses

Data

One combined database

Available: www.seamap.org



R/V *Palmetto*



R/V *Savannah*



Three vessels

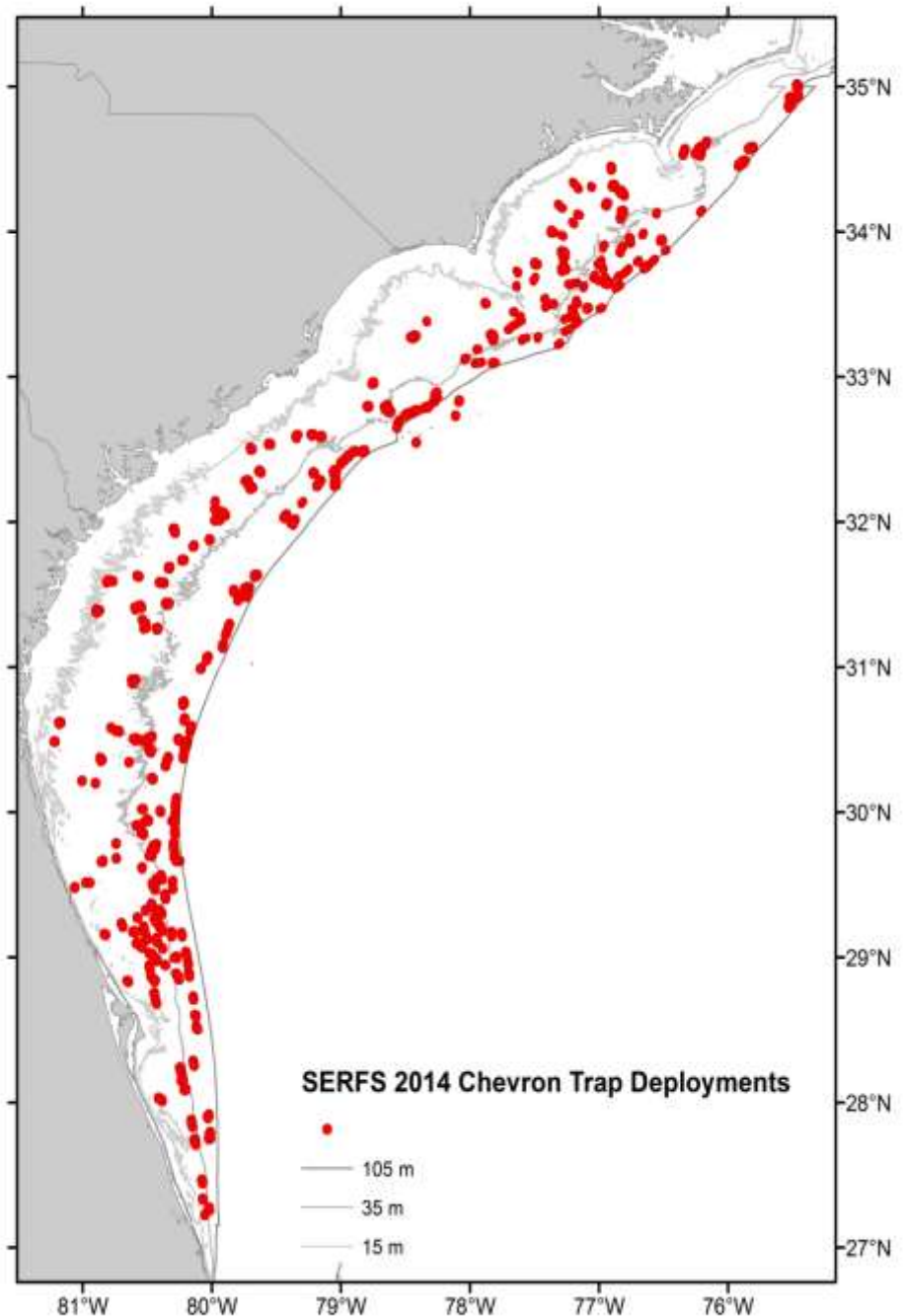
- 2012
Halting long-line surveys
- July 2014
Resuming short bottom long-line
- August 2015
Resuming long bottom long-line



NOAA Vessel Pisces

2014 Summary

- Traps deployed: 1,052 monitoring
468 recon.
All with video cameras
- 696 other gear deployments
(CTD, H&L, etc.)
- 62 species - 40,991 fish
identified, weighed & measured
- Life history (trap catches):
39 species and 9,477 fish kept
- Diet studies:
groupers, squirrelfish,
blueline tilefish, black sea bass,
white grunt.
- DNA and Mercury studies



2014 Reef Fish Survey catches - Most common species

Scientific name	Common name	Chevron	Other gear	total
<i>Centropristis striata</i>	Black Sea Bass	15,726	65	15,791
<i>Haemulon aurolineatum</i>	Tomtate	13,073	24	13,097
<i>Pagrus pagrus</i>	Red Porgy	2,762	1	2,763
<i>Haemulon plumierii</i>	White Grunt	1,837	36	1,873
<i>Balistes capriscus</i>	Gray Triggerfish	1,658	1	1,659
<i>Stenotomus</i> sp.	Scup/Longspine Porgy	1,560	0	1,560
<i>Rhomboplites aurorubens</i>	Vermilion Snapper	1,365	0	1,365
<i>Diplodus holbrookii</i>	Spottail Pinfish	711	0	711
<i>Lutjanus campechanus</i>	Red Snapper	626	68	694
<i>Centropristis ocyurus</i>	Bank Sea Bass	602	0	602
<i>Diplectrum formosum</i>	Sand Perch	355	0	355
<i>Mycteroperca phenax</i>	Scamp	74	29	103
<i>Calamus nodosus</i>	Knobbed Porgy	92	0	92
<i>Hyporthodus niveatus</i>	Snowy Grouper	17	68	85
<i>Stephanolepis hispida</i>	Planehead Filefish	52	0	52
<i>Mycteroperca microlepis</i>	Gag	29	15	44
<i>Caulolatilus microps</i>	Blueline tilefish	30	12	42
<i>Epinephelus morio</i>	Red Grouper	38	0	38
<i>Lagodon rhomboides</i>	Pinfish	34	0	34
<i>Equetus lanceolatus</i>	Jacknife Fish	32	0	32
<i>Echeneis naucrates</i>	Sharksucker	28	0	28

2014 total 9,477 life history samples collected (incl. FD)

Scientific name	Common name	# fish	%
<i>Centropristis striata</i>	Black Sea Bass	2,291	25.5%
<i>Pagrus pagrus</i>	Red Porgy	1,859	20.7%
<i>Haemulon plumierii</i>	White Grunt	1,113	12.4%
<i>Rhomboplites aurorubens</i>	Vermilion Snapper	1,108	12.3%
<i>Balistes capriscus</i>	Gray Triggerfish	1,074	11.9%
<i>Lutjanus campechanus</i>	Red Snapper	715	8.0%
<i>Stenotomus</i> sp.	Scup/Longspine Porgy	201	2.2%
<i>Mycteroperca phenax</i>	Scamp	105	1.2%
<i>Haemulon aurolineatum</i>	Tomtate	100	1.1%
<i>Hyporthodus niveatus</i>	Snowy Grouper	85	0.9%
<i>Mycteroperca microlepis</i>	Gag	50	0.6%
<i>Caulolatilus microps</i>	Blueline tilefish	42	0.5%
<i>Epinephelus morio</i>	Red Grouper	38	0.4%
<i>Equetus lanceolatus</i>	Jackknife Fish	28	0.3%
<i>Seriola dumerili</i>	Greater Amberjack	21	0.2%
<i>Pareques umbrosus</i>	Cubbyu	19	0.2%
<i>Holocentrus adscensionis</i>	Squirrelfish	18	0.2%
<i>Lutjanus vivanus</i>	Silk Snapper	18	0.2%
<i>Lutjanus buccanella</i>	Blackfin Snapper	17	0.2%
<i>Epinephelus adscensionis</i>	Rock Hind	11	0.1%
<i>Pterois</i> sp.	Lionfish	11	0.1%

Overview CPUE

- Chevron trap data only
- Time series: 1990 – 2014
- CPUE in fish / trap * hour
- Delta GLM Standardized and Nominal CPUE
- Normalized to long term average
- Error bars are ± 1 SE



Delta-GLM standardization

- Technique commonly used in fisheries research to corrects CPUE for variability in sampling.

e.g. location (lat-long)

depth (m)

date / season

bottom temperature ($^{\circ}\text{C}$)



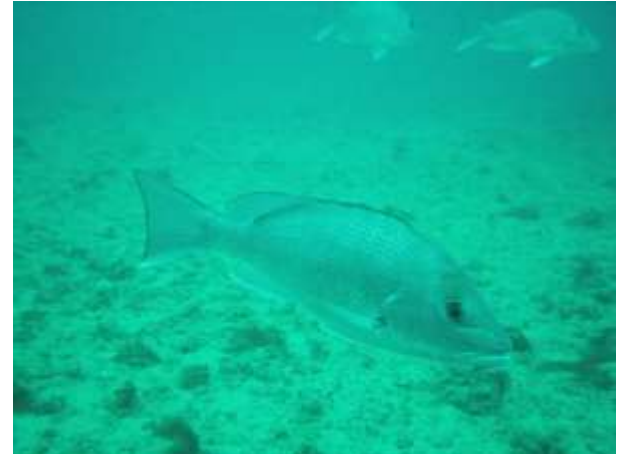
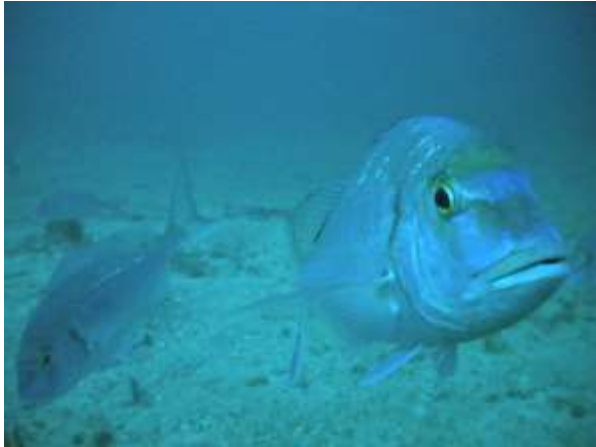
Caveats

- 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
- Many species have not been assessed or updated through SEDAR process, and not all trends and analyses have been discussed in SEDAR framework.

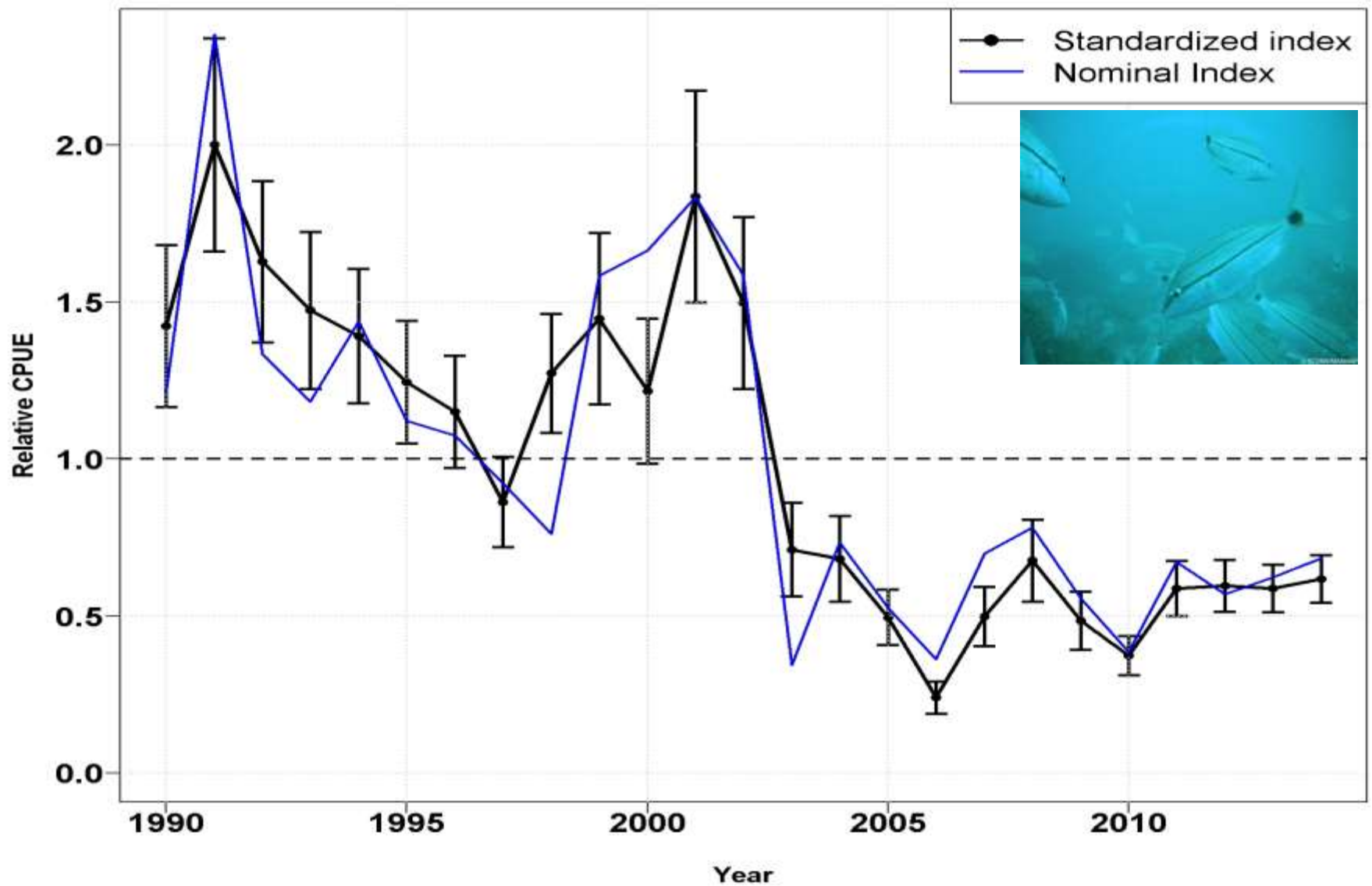


OVERVIEW SELECTED SPECIES

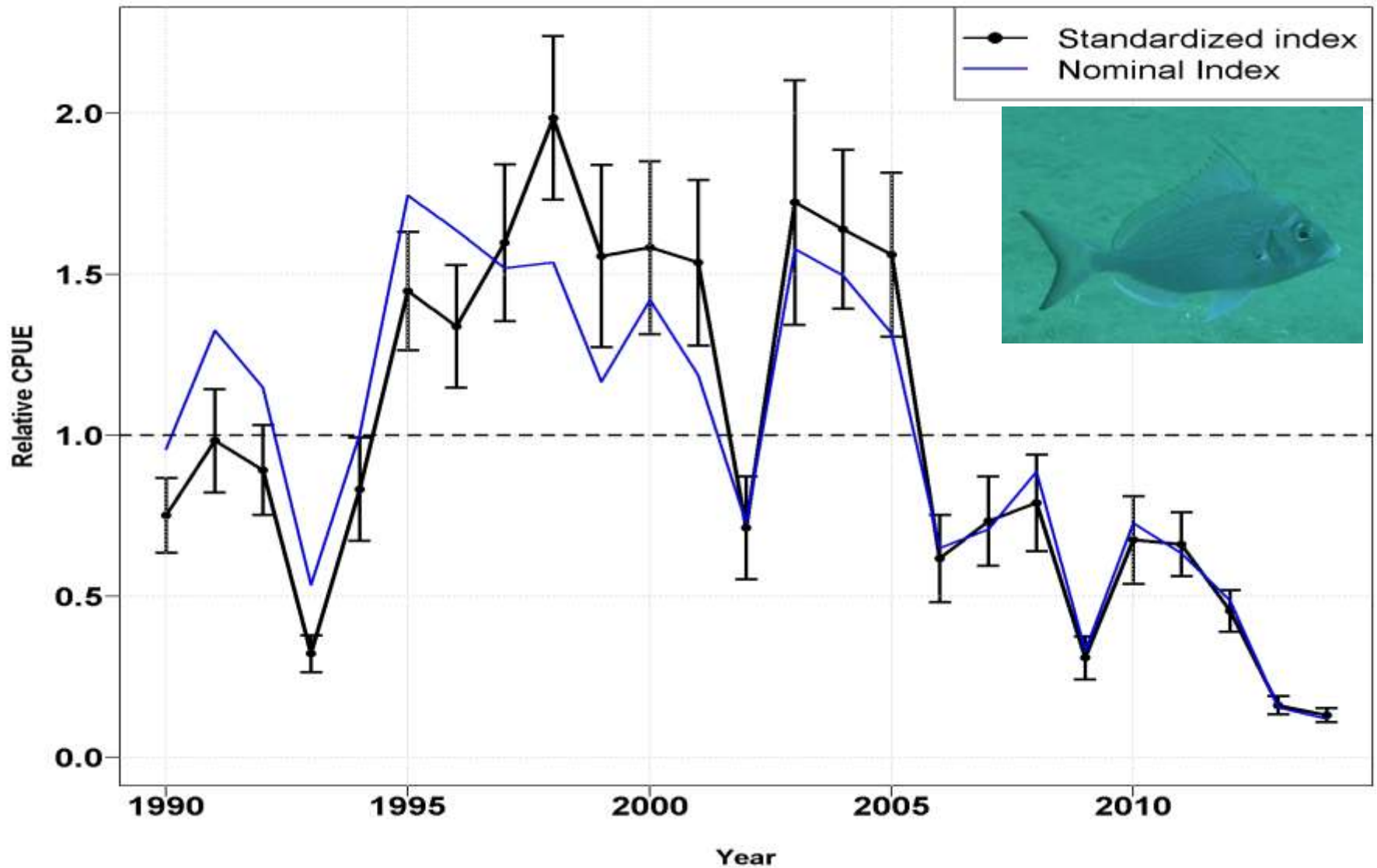
Species in **green**:
no routine life history sampling



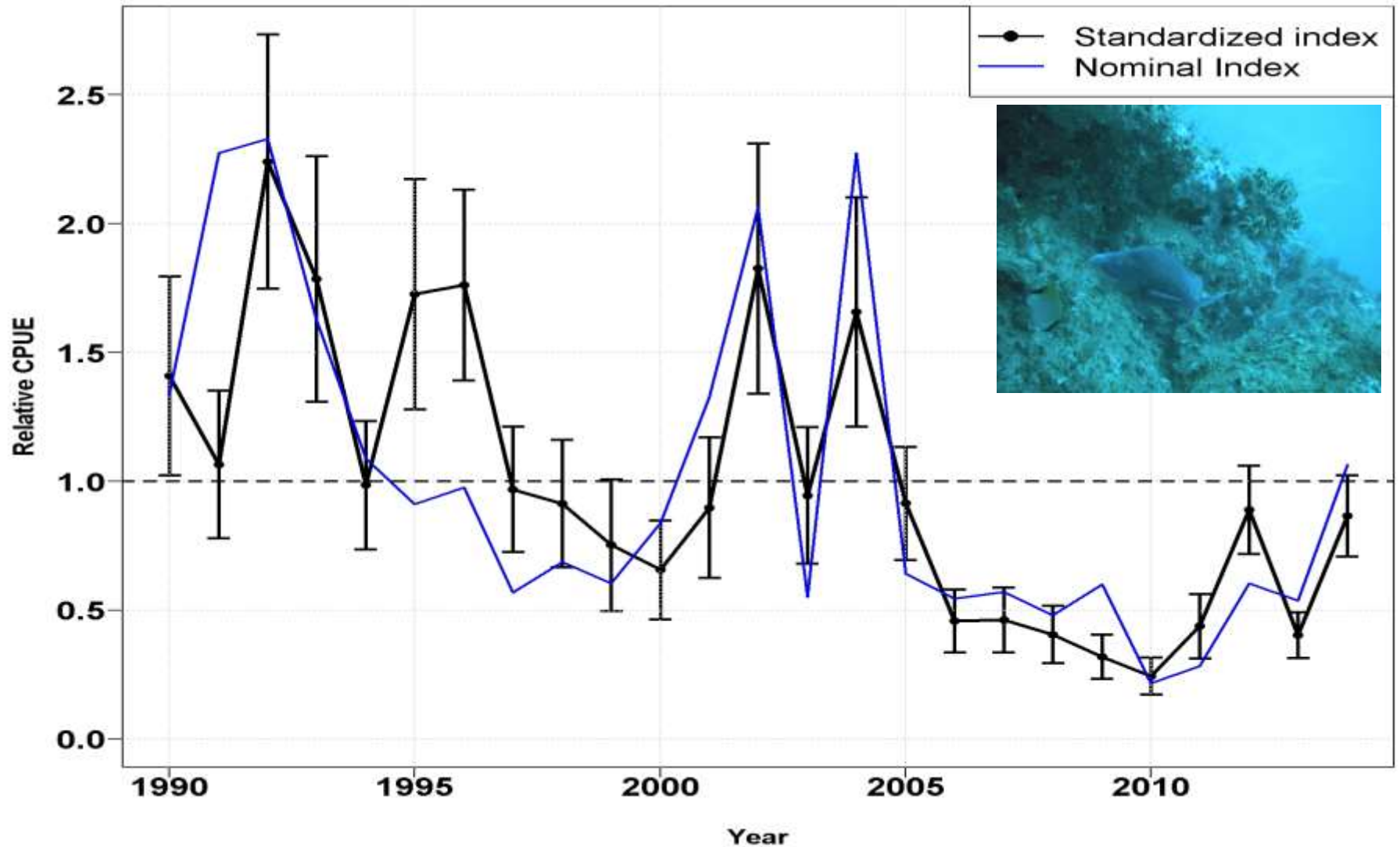
Chevron trap CPUE - Tomtate



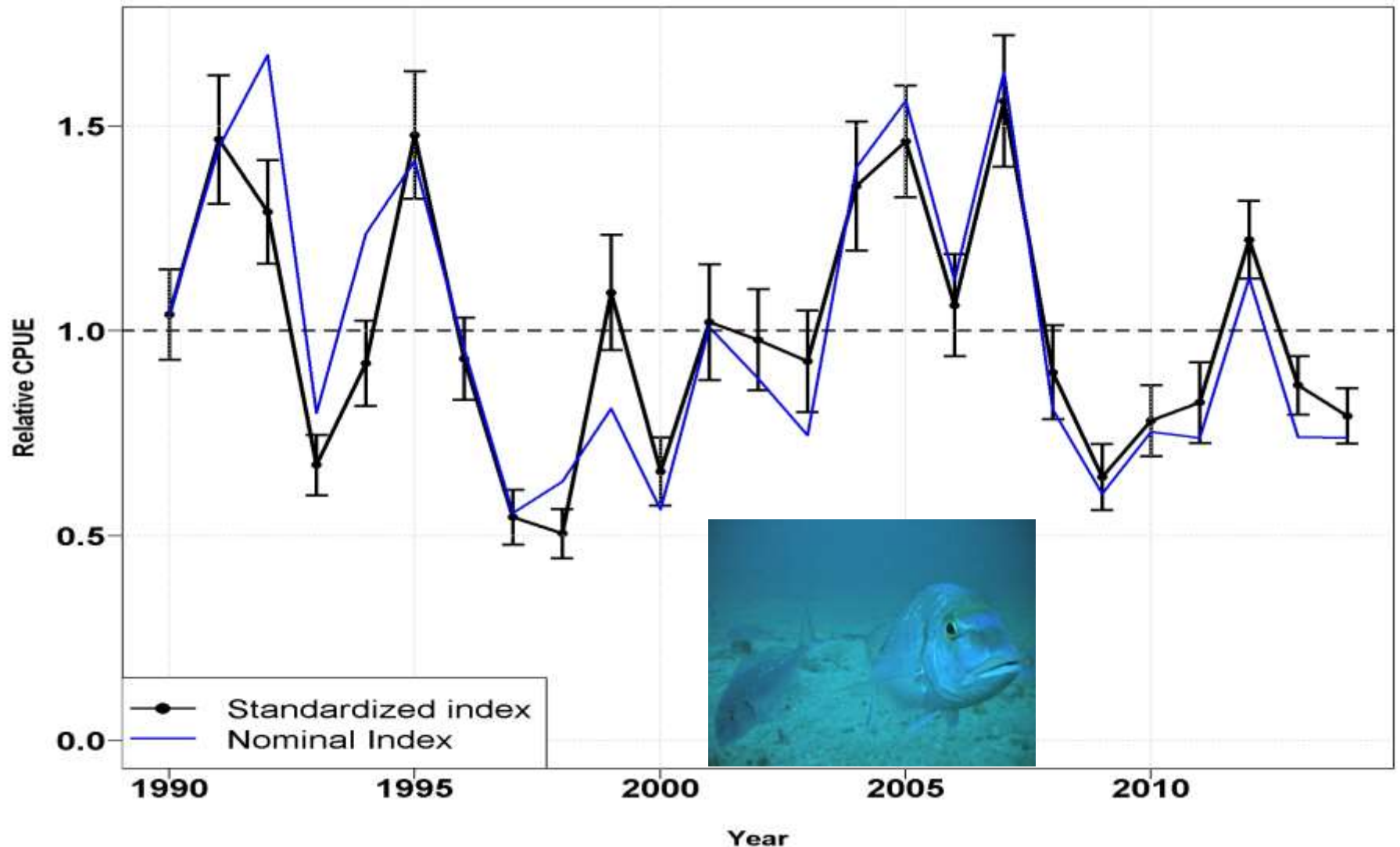
Chevron trap CPUE — *Stenotomus* spp.



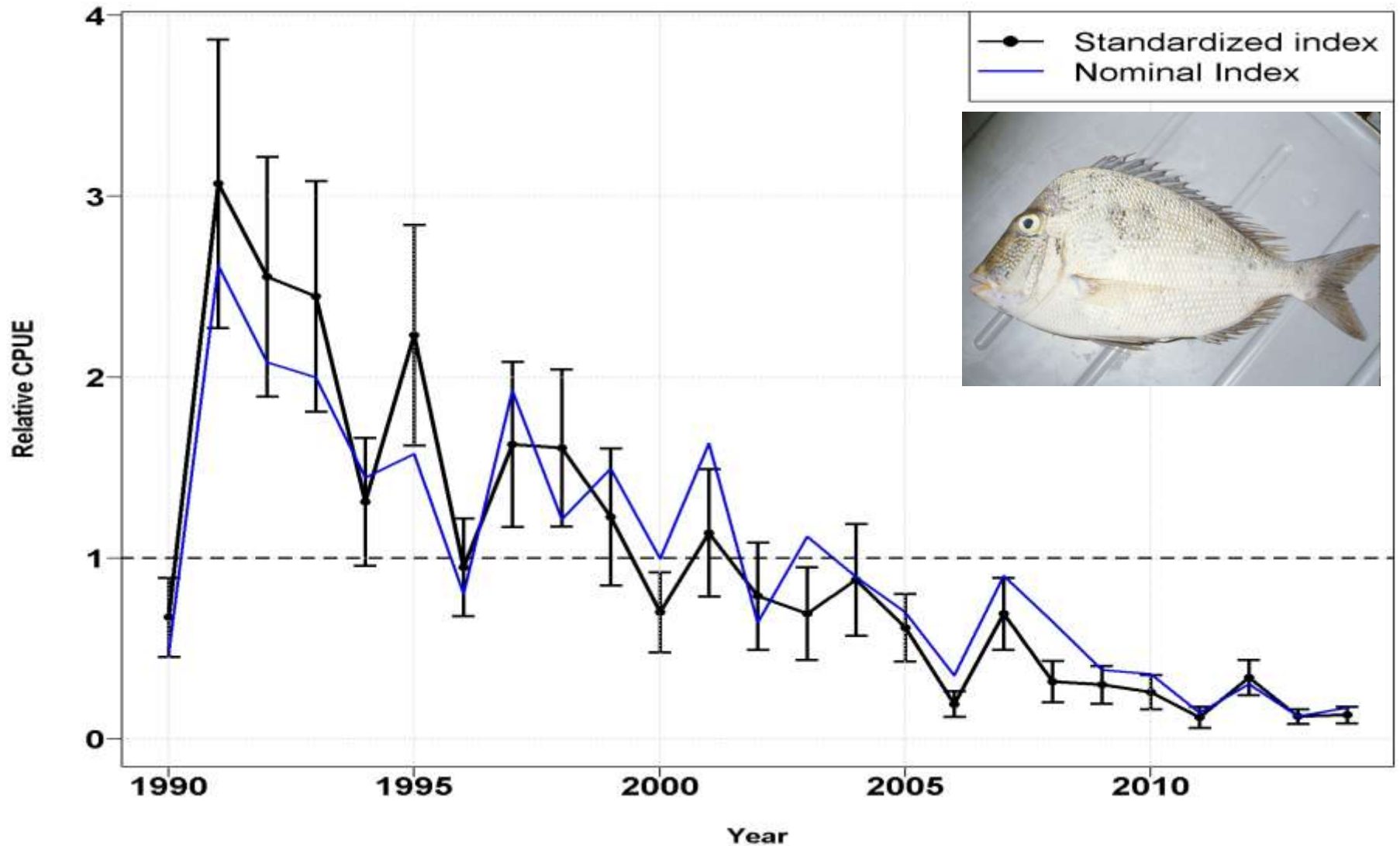
Chevron trap CPUE – White Grunt



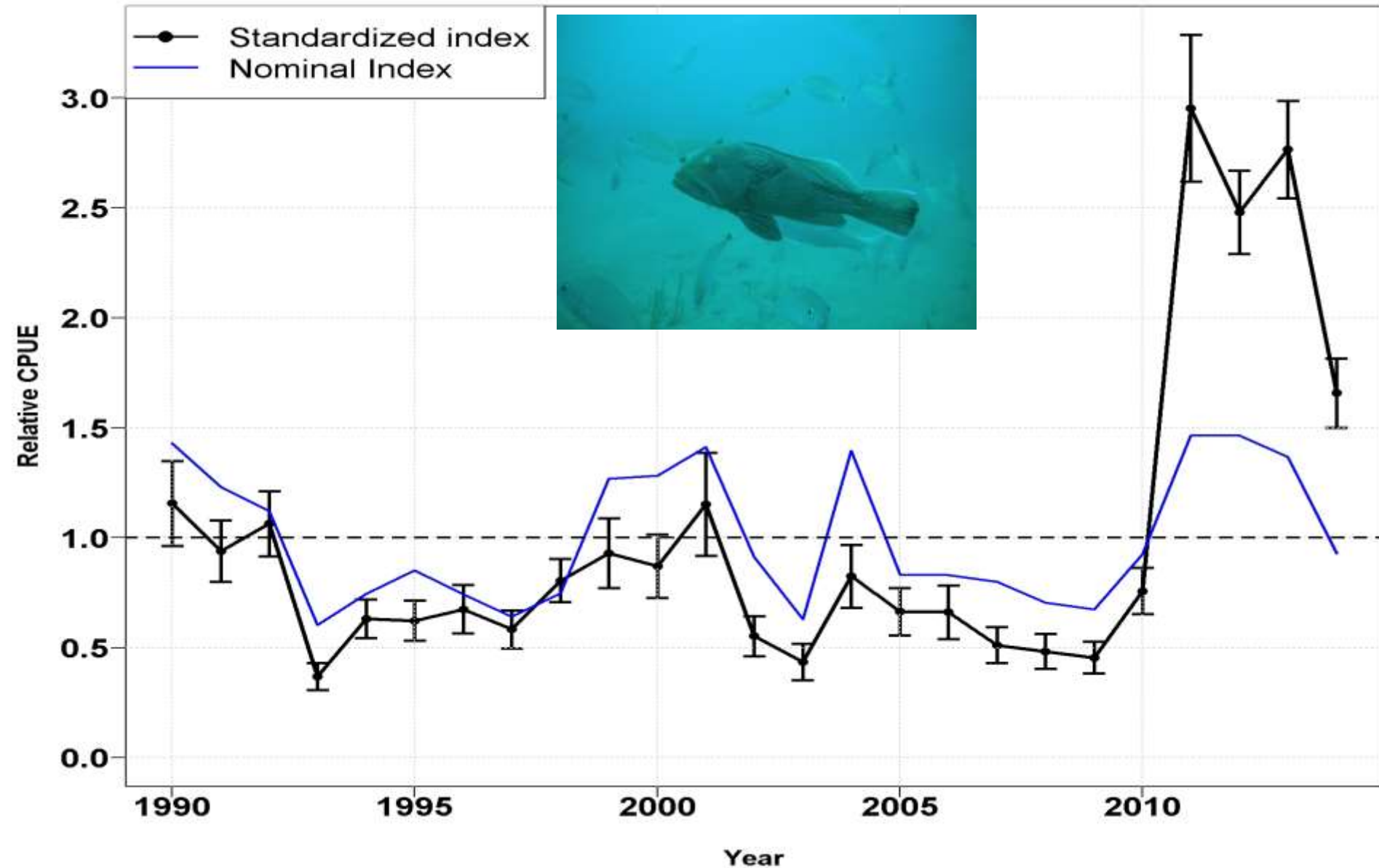
Chevron trap CPUE – Red Porgy



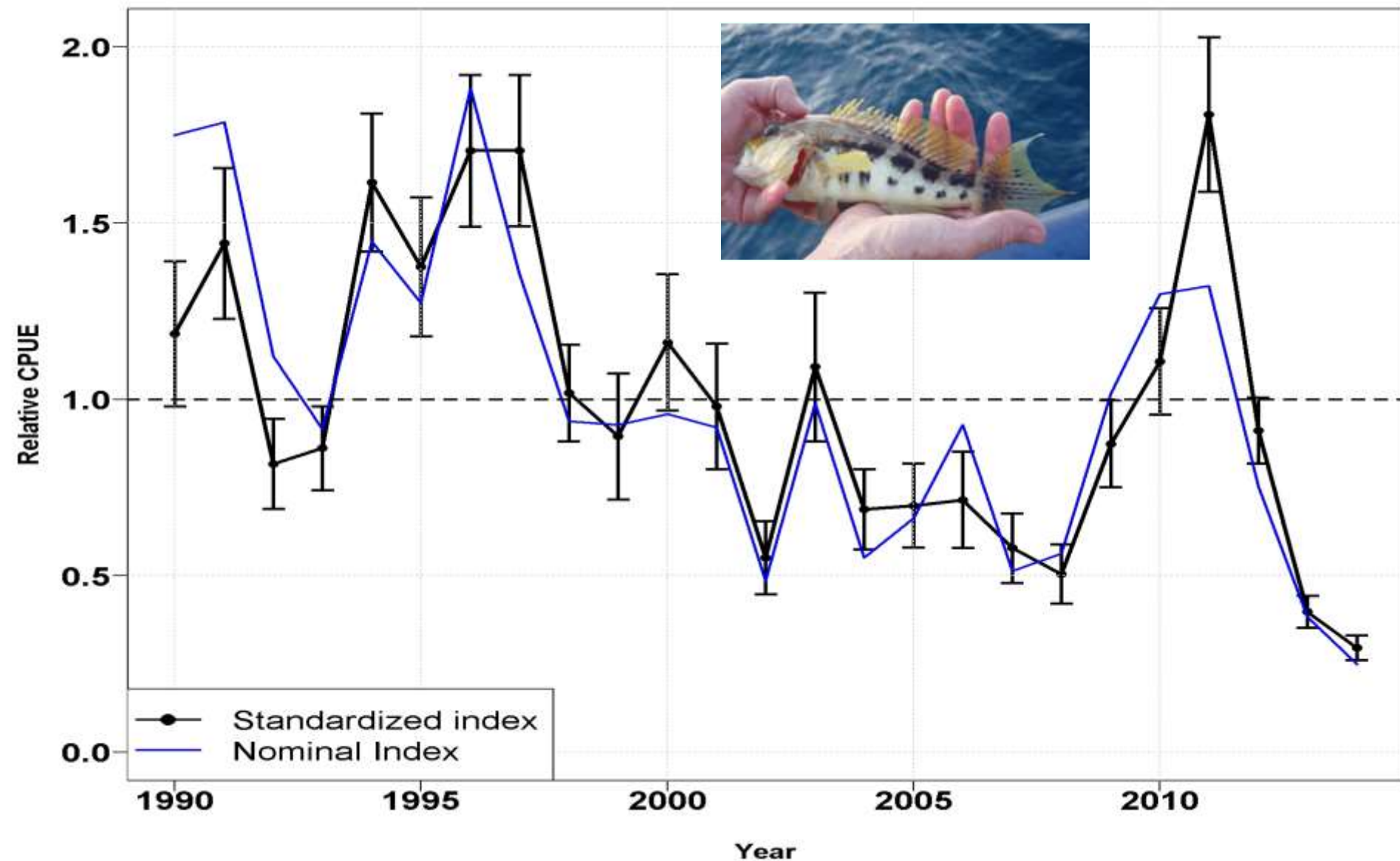
Chevron trap CPUE — Knobbed Porgy



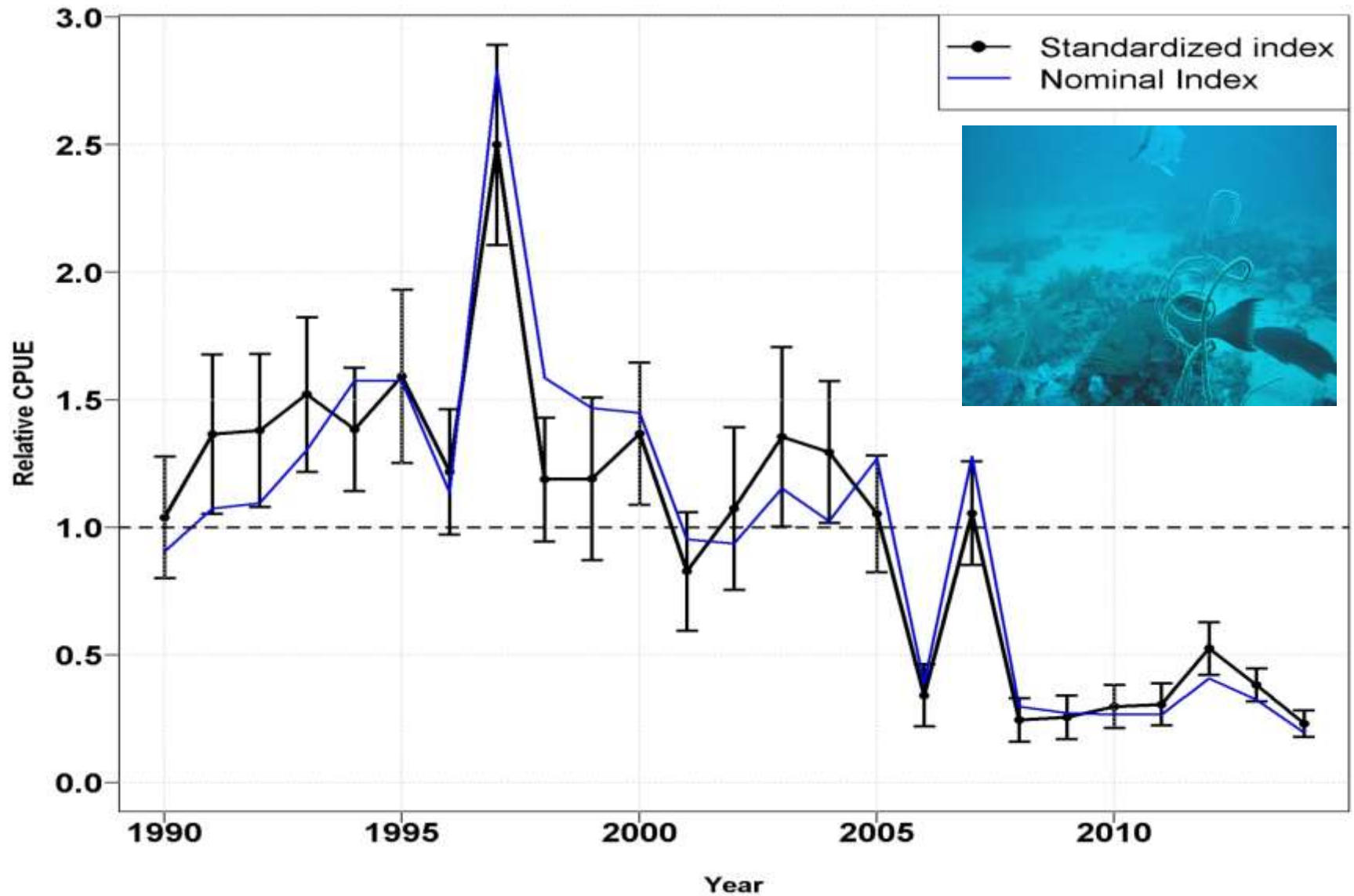
Chevron trap CPUE - Black Sea Bass



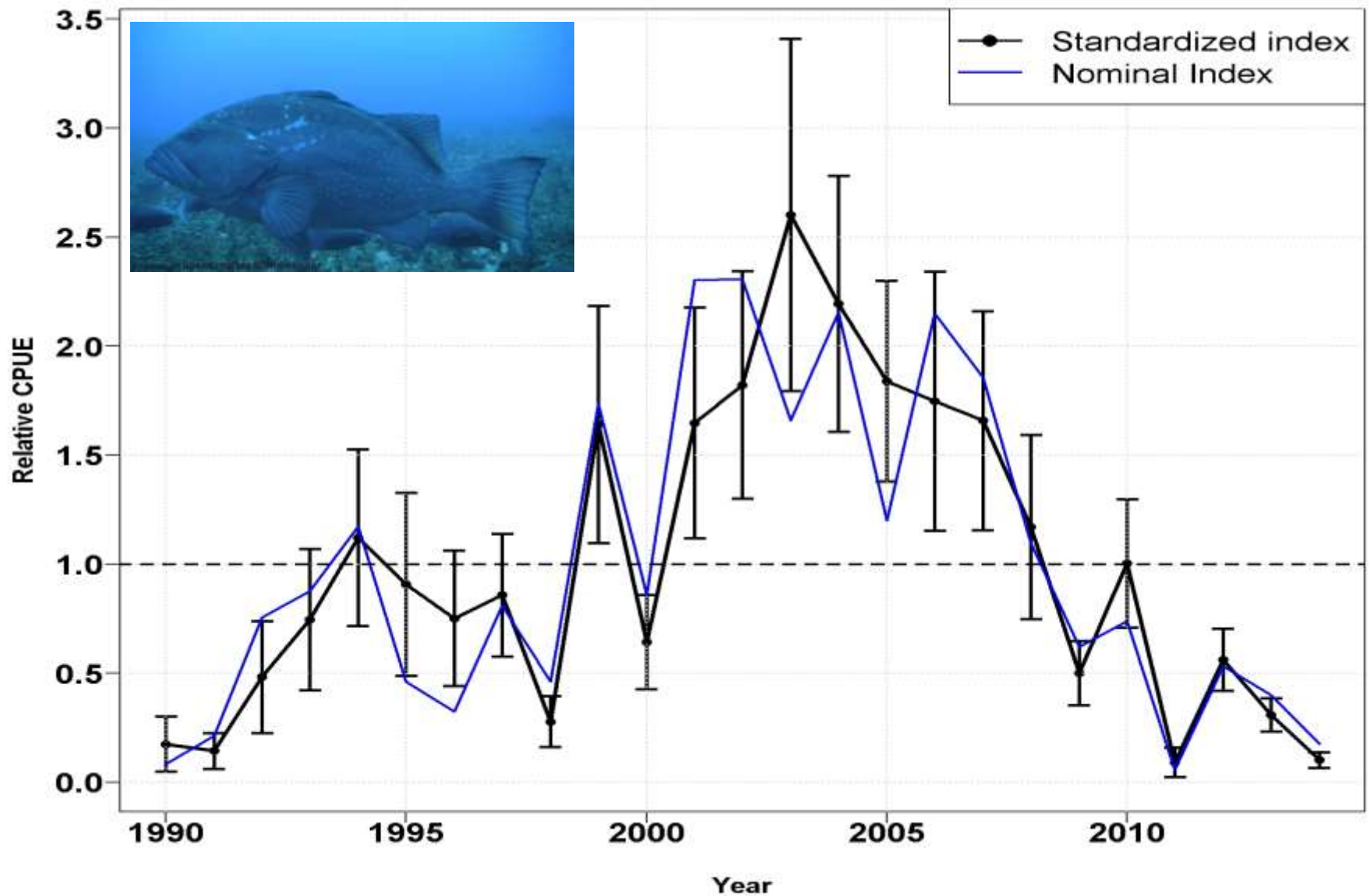
Chevron trap CPUE - Bank Sea Bass



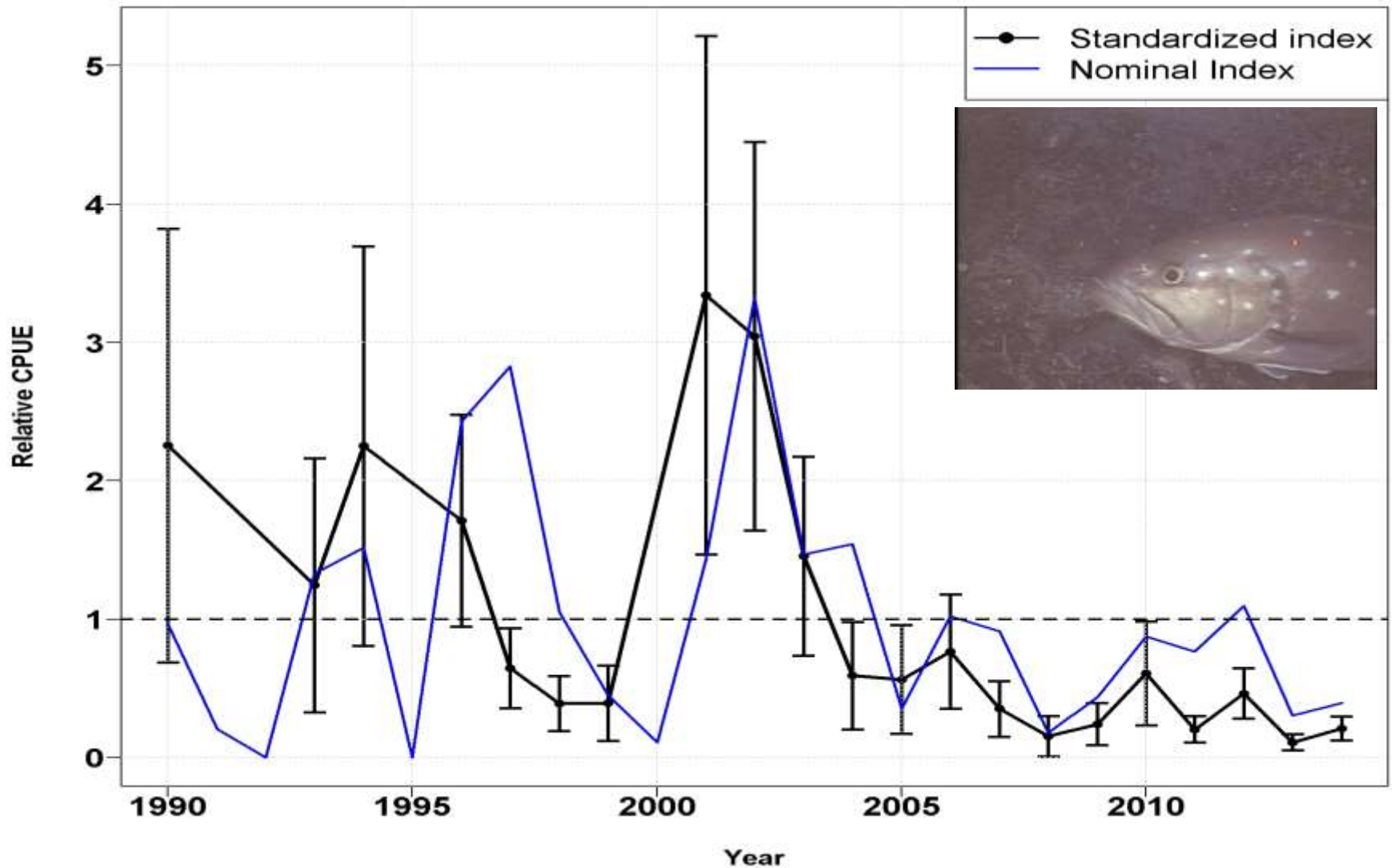
Chevron trap CPUE - Scamp



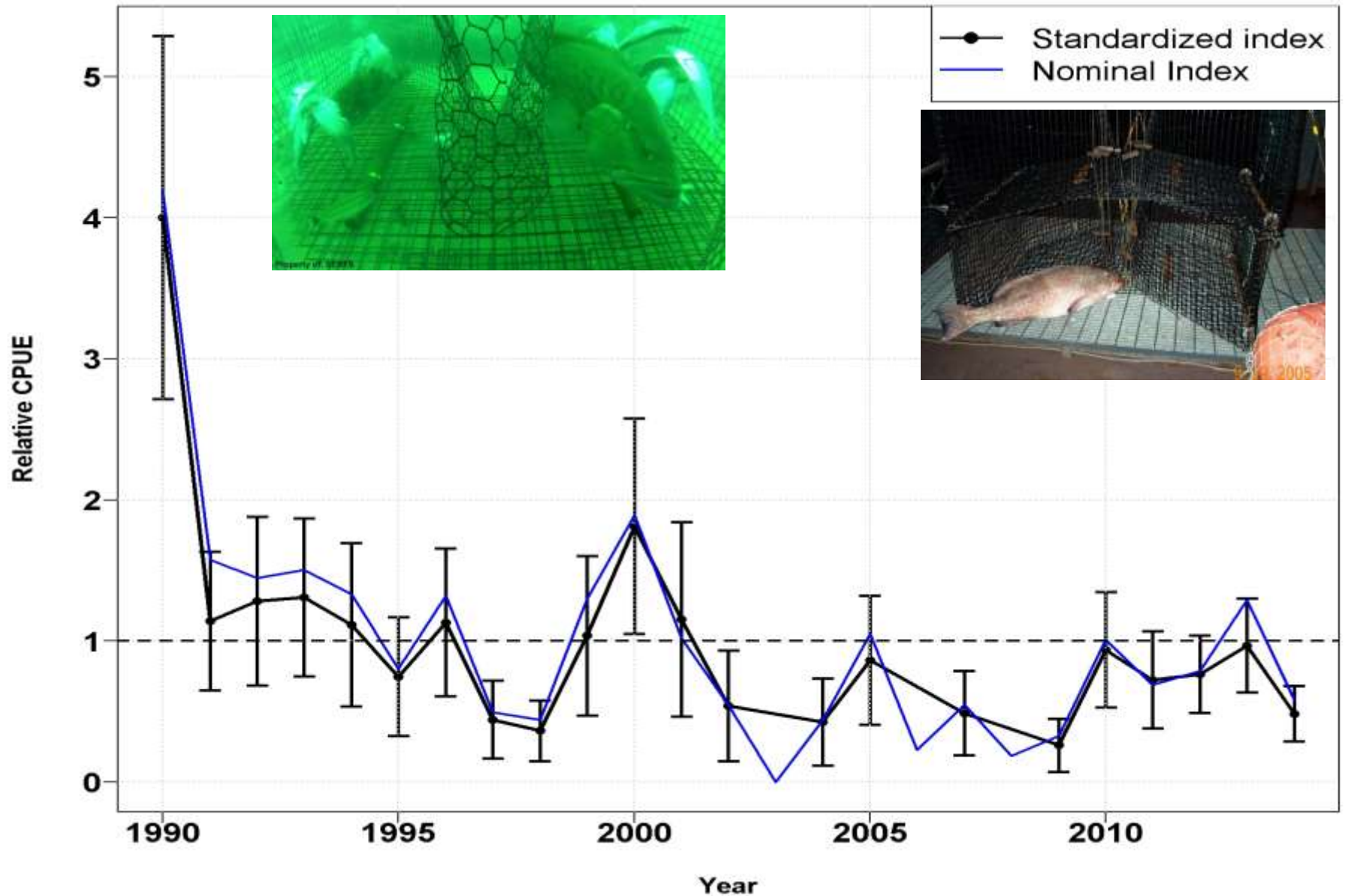
Chevron trap CPUE – Red Grouper



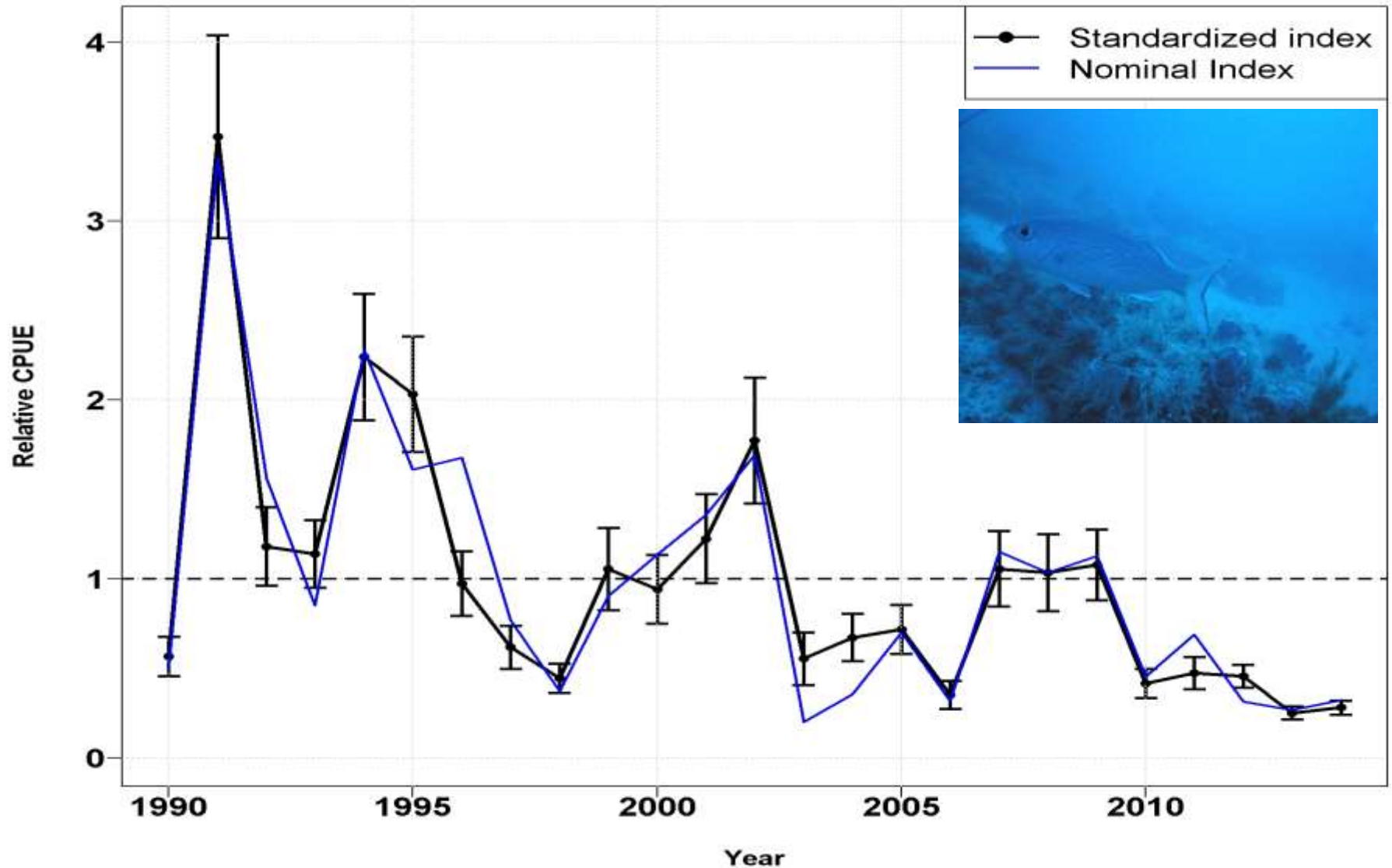
Chevron trap CPUE – Snowy Grouper



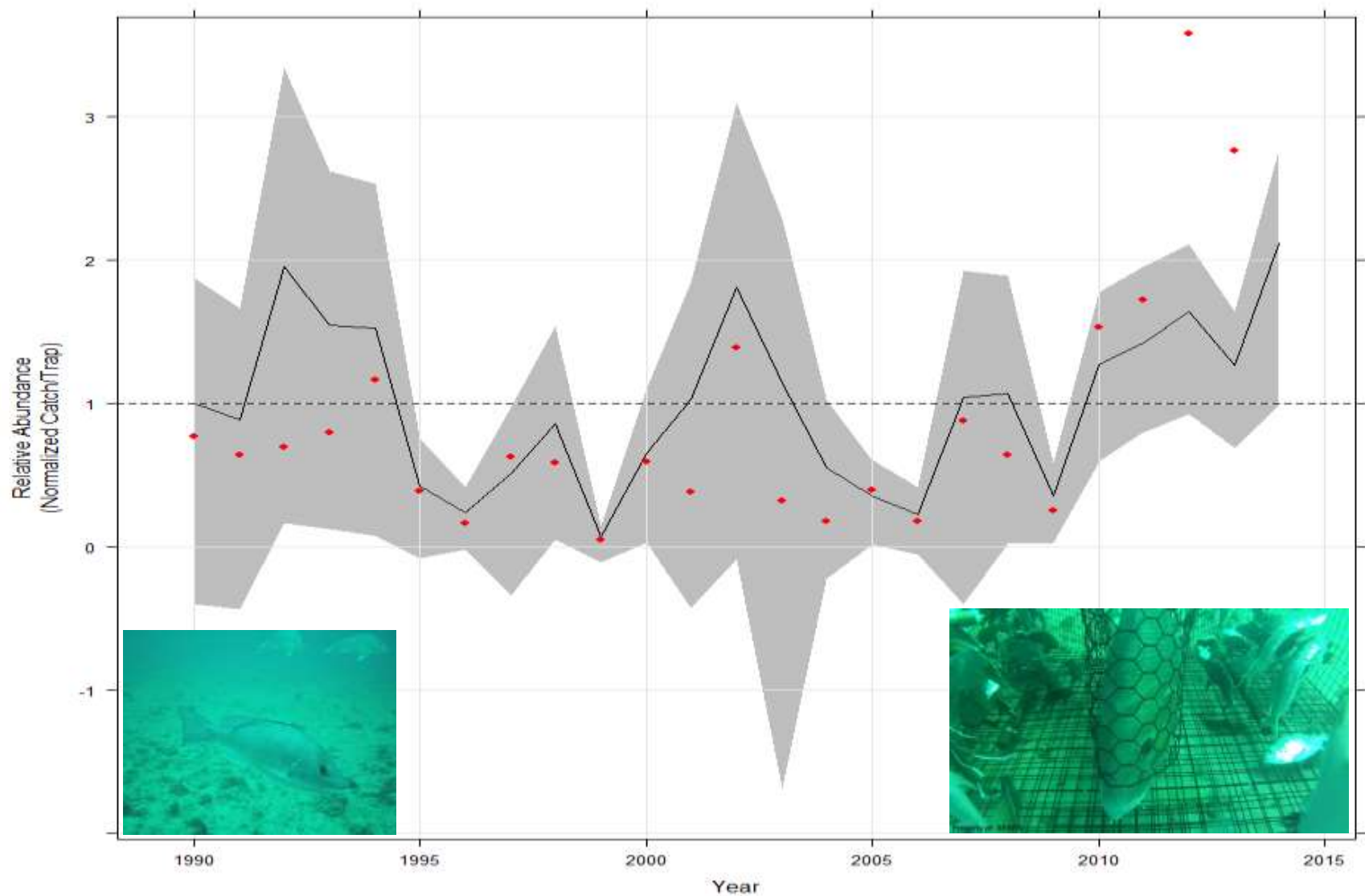
Chevron trap CPUE - Gag



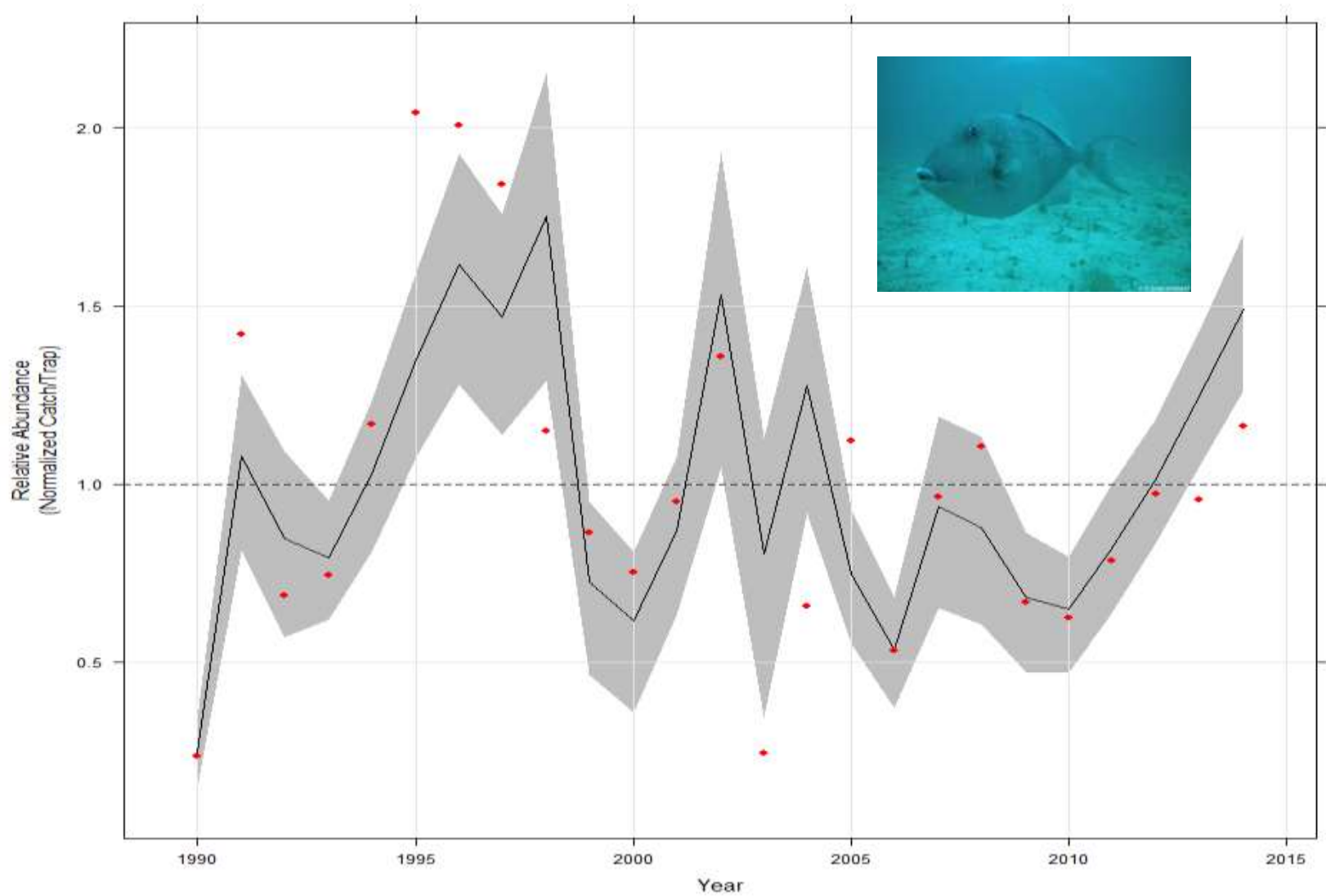
Chevron trap CPUE – Vermilion Snapper



Chevron trap CPUE – Red Snapper



Chevron trap CPUE – Gray Triggerfish



2015 Reef Fish Monitoring

- **Sampling season :**
May – September (April 21 – October 23)
- **Activities:**
SERFS:
>100 days at sea with 3 vessels.
>1000 Trap deployments to date.

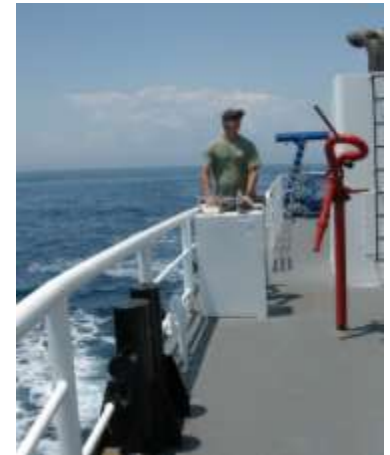
MARMAP/SEAMAP-SA:

Additional funding.

Continuing short bottom long-line: 85 lines to date
(e.g. Blueline Tilefish and Snowy Grouper)

Resuming long bottom long-line : 34 lines to date
(e.g. Golden Tilefish)



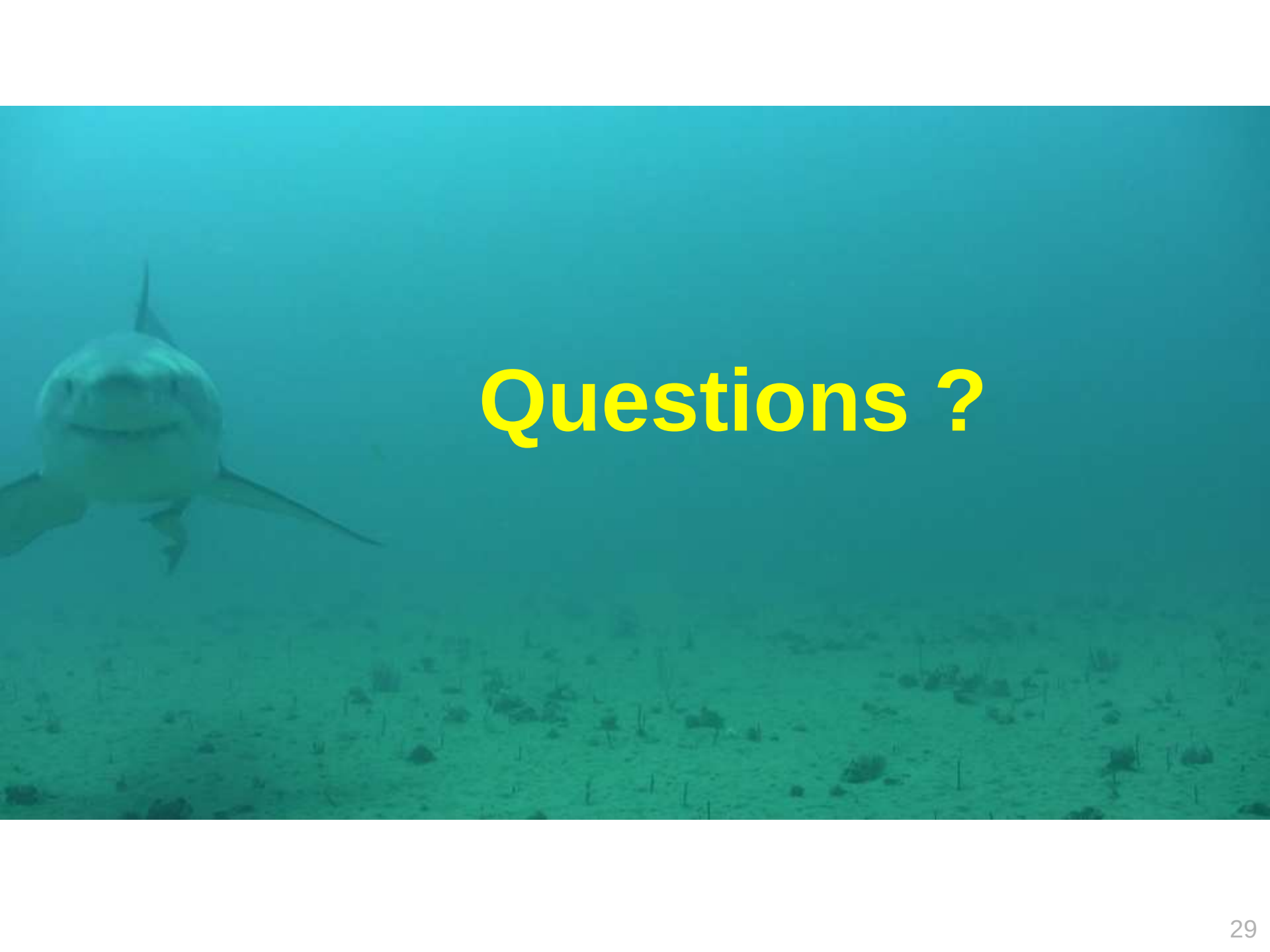


Acknowledgements:

Wally Bubley,
Joey Ballenger,
Tracey Smart

MARMAP/SEAMAP-SA/SEFIS
Staff and students
Research Vessel Crews



A large shark is swimming towards the camera in a clear, blue underwater environment. The shark has a white underbelly and a greyish-blue top. It has a small, curved mouth that gives it a friendly, smiling appearance. The background is a deep blue, and the seabed is visible at the bottom with some sparse vegetation.

Questions ?