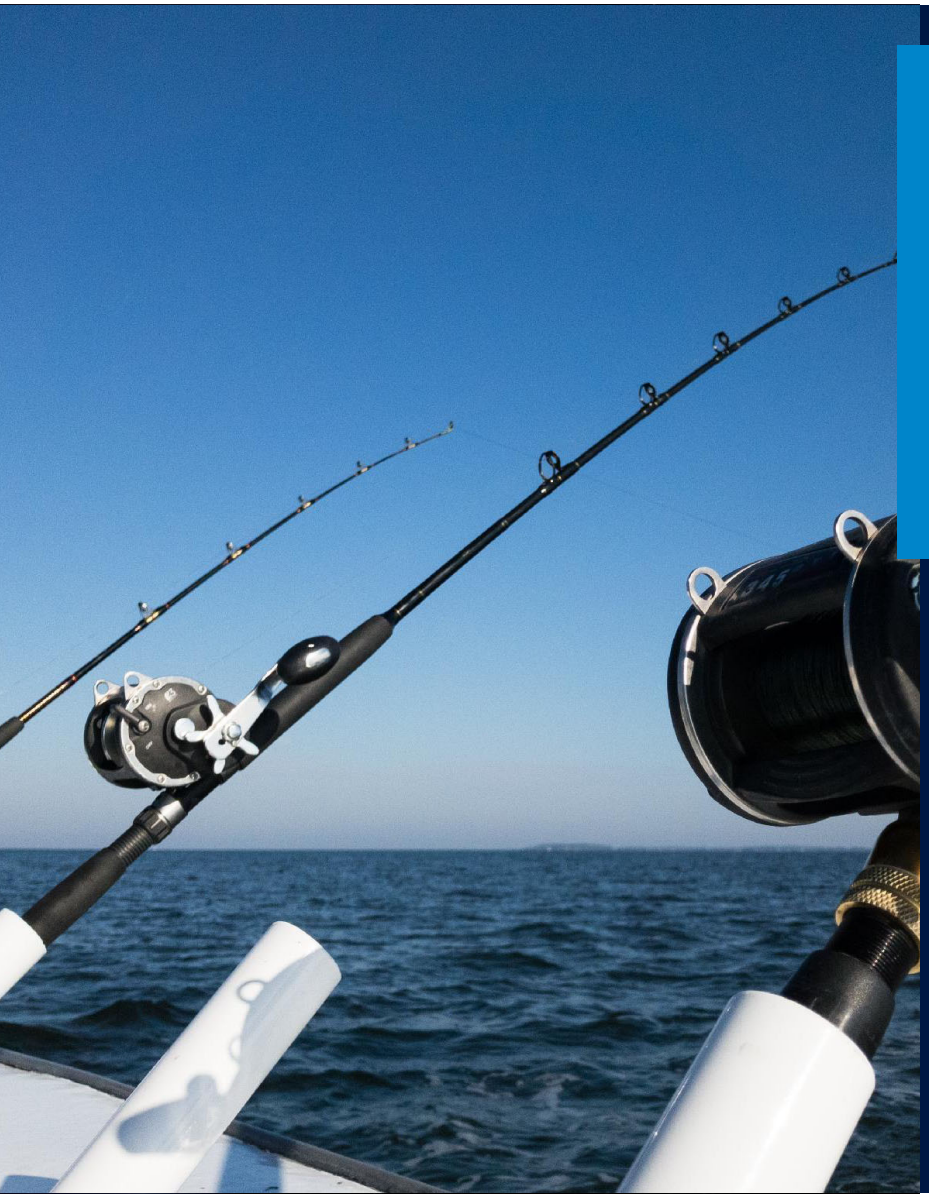


Marine Recreational Information Program

Calibrated Fishing Effort and Catch Data

NOAA Fisheries Office of Science and Technology
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

Outline

1. Overview of Fishing Effort Survey calibration
2. South Atlantic effort comparisons
3. South Atlantic catch comparisons for priority species
4. Current status and 2026 estimates

Overview of Fishing Effort Survey Calibration



FWC Photo by Amanda Nalley

Fishing Effort Survey Overview

Objective

Estimates the total number of fishing trips (effort) for **shore and private boat anglers.**



Geographic Scope

Maine to Alabama and in Hawaii



*LA (1981-2013), MS (1981-2025)

Note: for-hire effort is compiled through the For-Hire Survey, not FES.

Fishing Effort Survey Revised in 2026

- Began implementing the improved Fishing Effort Survey according to existing regional survey administration schedules.
- Revised design developed in response to concerns from the recreational fishing community and partners that our **shore and private boat fishing effort** estimates may be too high
  - Revised survey improves the accuracy of estimates by mitigating potential overreporting of fishing trips.
  - This follows extensive testing and a favorable independent peer review that indicated the revised design offers improved utility for stock assessments and management decisions.

Key Improvements Compared to Previous FES Design

- **Revised question order:** The sequence of fishing activity questions changed to improve reporting accuracy.
- **Increased frequency of administration:** The survey is mailed monthly instead of every two months.
  - **Updated estimation methods corresponding to design:** improve the precision and stability of the estimates.

Key Differences Compared to Previous FES Design

Original FES

15 **How many days did this person go recreational saltwater fishing from the SHORE in <Merged State>?**

The shore includes docks, bridges, causeways, beaches, banks, or any other shore-based place or area. Do not include freshwater fishing.

☐ Did not recreational saltwater fish from shore in last 12 months ➔ ***Go to question 16***

☐☐ Number of days saltwater shore fishing in Jan. and Feb. of 2024

☐☐☐ Number of days saltwater shore fishing in last 12 months, including Jan. and Feb.

16 **How many days did this person go recreational saltwater fishing from a private or rental BOAT that returned to shore in <Merged State>?**

Do not include freshwater trips or trips where a paid captain or crew helped locate and catch fish.

☐ Did not recreational saltwater fish from private boat in last 12 months

☐☐ Number of days saltwater boat fishing in Jan. and Feb. of 2024

☐☐☐ Number of days saltwater boat fishing in last 12 months, including Jan. and Feb.

Improved FES

15 **How many days did this person go recreational saltwater fishing from the SHORE in <Merged State>?**

The shore includes docks, bridges, causeways, beaches, banks, or any other shore-based place or area. Do not include freshwater fishing or fishing for shellfish.

☐ Did not recreational saltwater fish from shore in last 12 months ➔ ***Go to question 16***

☐☐☐ Number of days saltwater shore fishing in last 12 months, including Jan. and Feb.

☐☐ Number of days saltwater shore fishing in Jan. of 2024

☐☐ Number of days saltwater shore fishing in Feb. of 2024

16 **How many days did this person go recreational saltwater fishing from a private or rental BOAT that returned to shore in <Merged State>?**

Do not include freshwater trips, shellfishing trips, or trips where a paid captain or crew helped locate and catch fish.

☐ Did not recreational saltwater fish from private boat in last 12 months

☐☐☐ Number of days saltwater boat fishing in last 12 months, including Jan. and Feb.

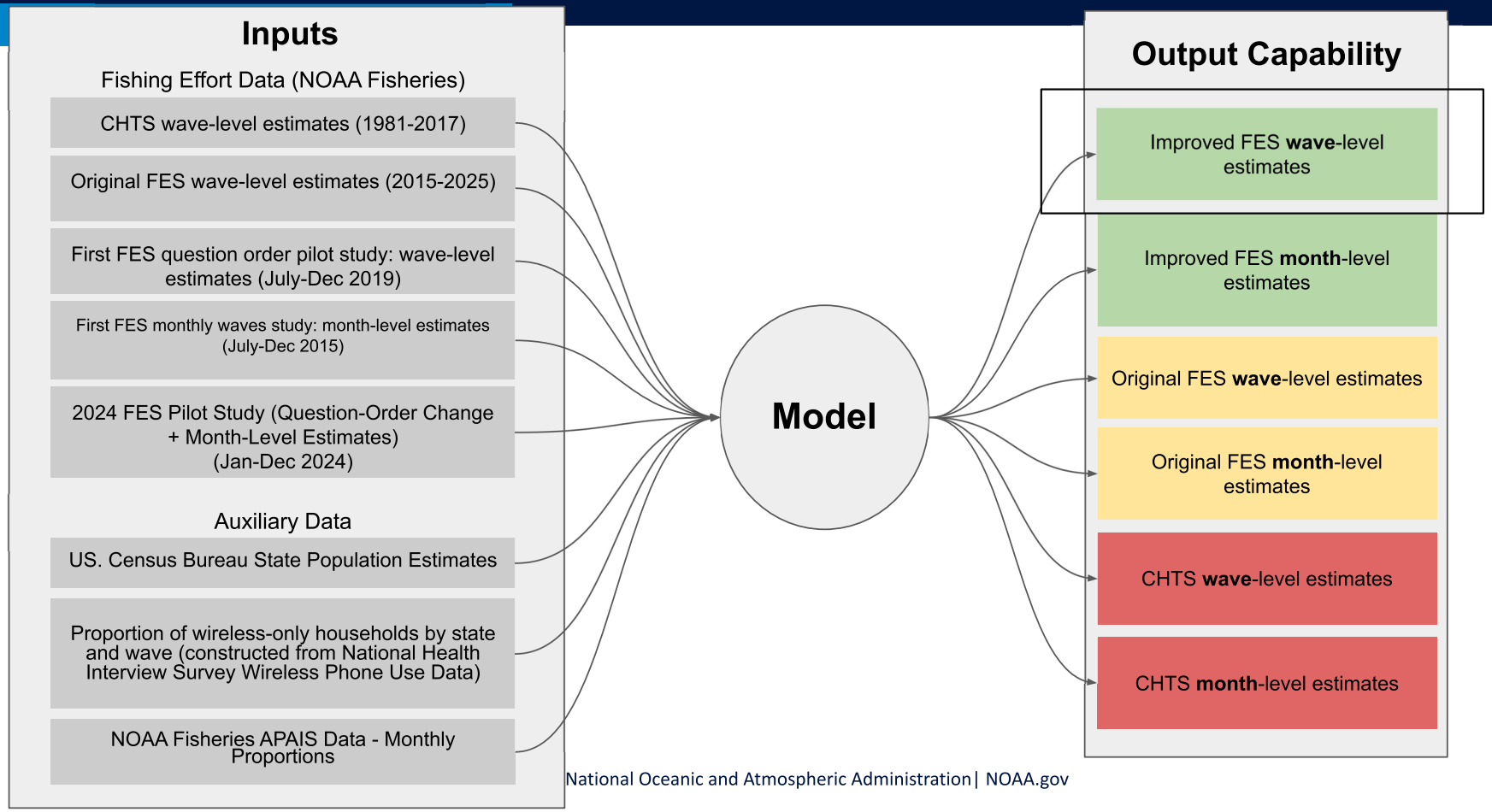
☐☐ Number of days saltwater boat fishing in Jan. of 2024

☐☐ Number of days saltwater boat fishing in Feb. of 2024

2026 Calibration Model

- **Builds on peer-reviewed model** previously developed to calibrate historical recreational fishing estimates from the Coastal Household Telephone Survey (1981–2017) to the original FES scale in 2018. However, the new model **directly calibrates CHTS, original FES, and improved FES** effort estimates rather than using prior model outputs.
- Uses a **Bayesian hierarchical modeling approach** and a longer time series of mail data than the prior Fay–Herriot SME model, resulting in more reliable and consistent historical estimates.
- Model **favorably peer-reviewed** in late 2025 via a 2-day peer-review workshop; provided **opportunity for** both **partner and public comment** and **incorporated key feedback** from review (on both model and preliminary results) prior to implementing model.

2026 Calibration Model Schematic



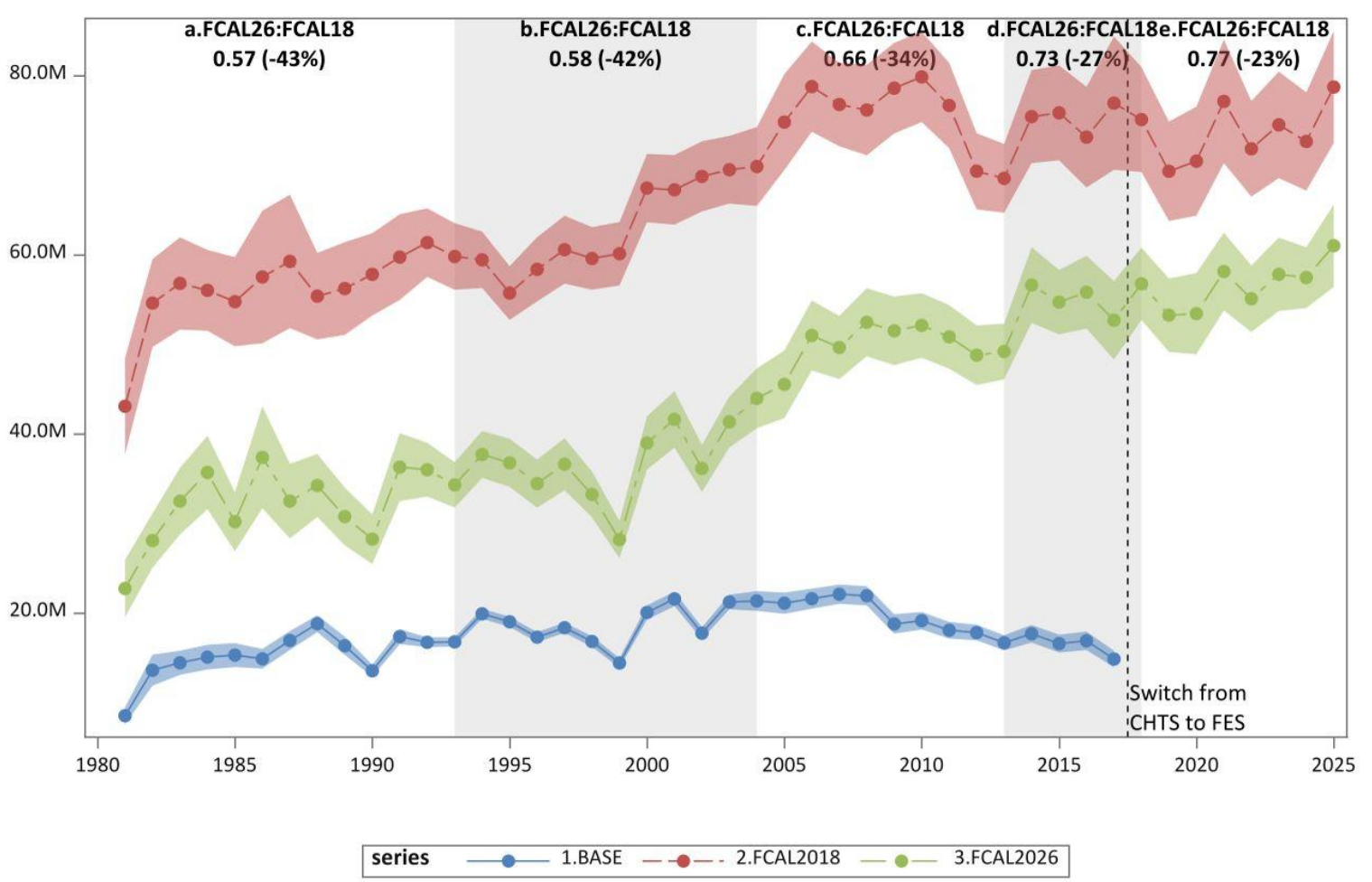


South Atlantic Effort Comparisons

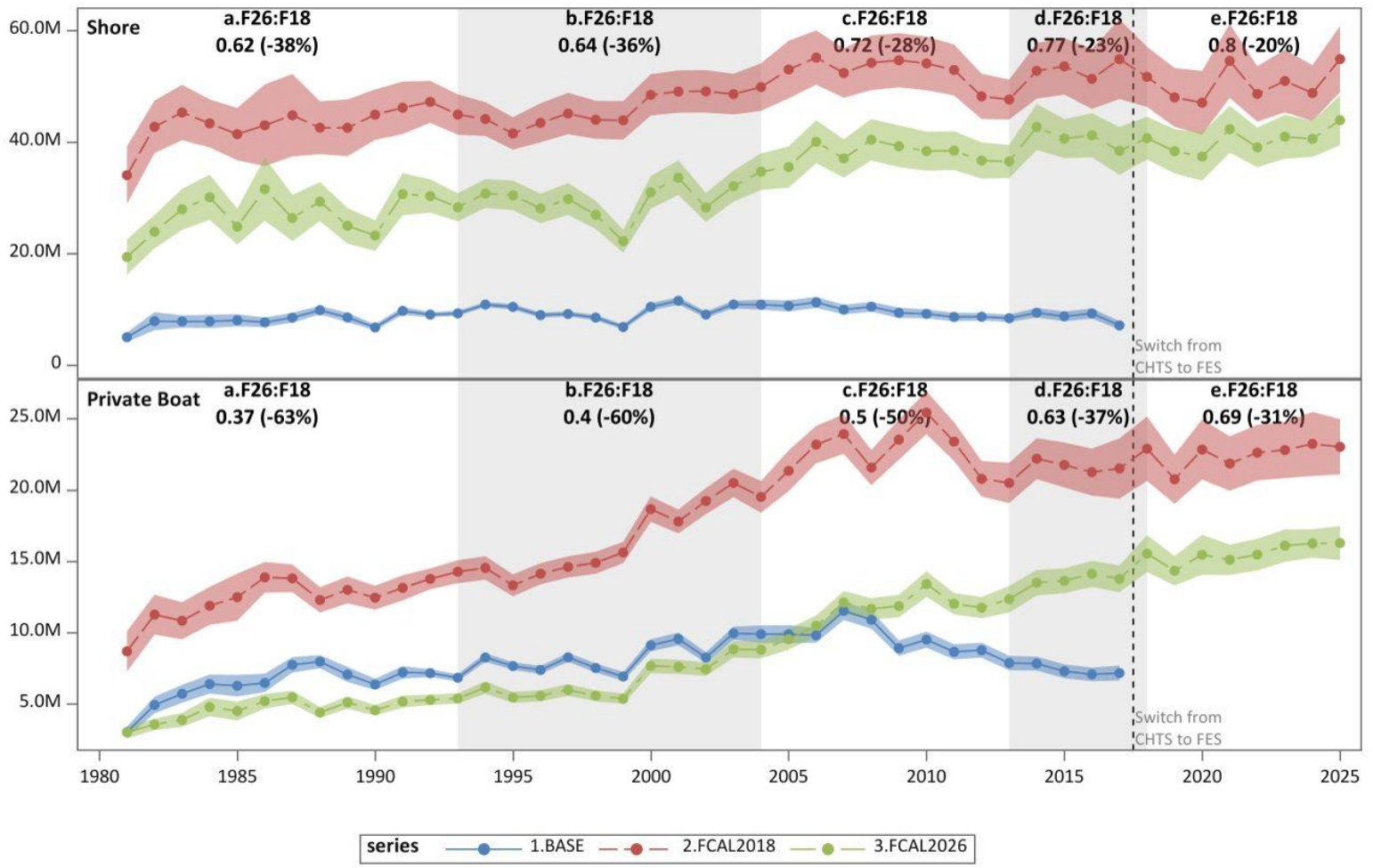
Changes to Effort Time Series - Key Takeaways

- Calibrated estimates are lower than original FES estimates
- Larger relative reductions for Private Boat compared to Shore
- Larger relative reductions in lower activity waves
- Differences across time series

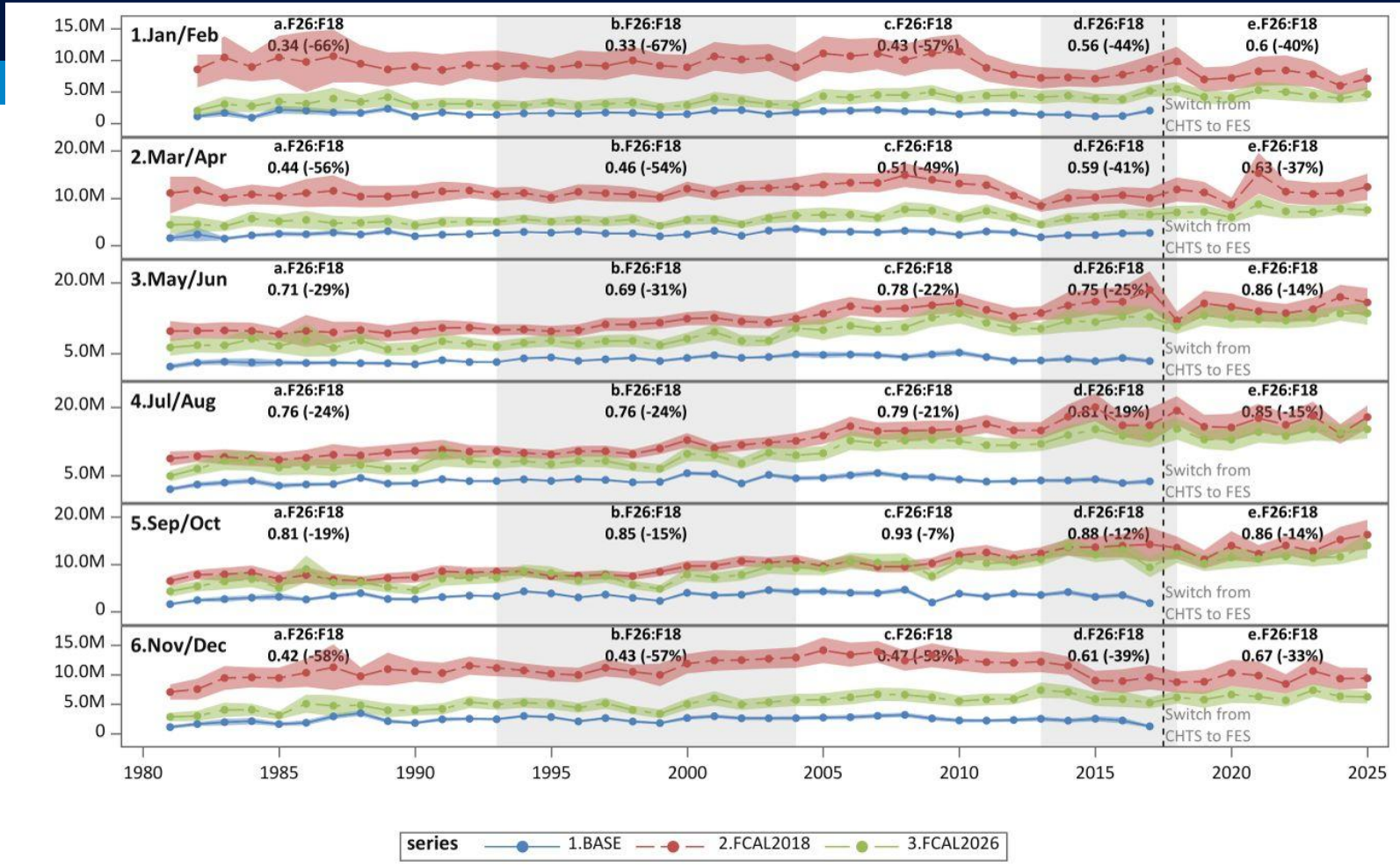
South Atlantic - Annual Effort (All modes)



South Atlantic - Annual Effort by Fishing Mode



South Atlantic - Wave Effort by Year (all modes)



South Atlantic - Global Effort Change Summary 81-25

Effort Category	Wave	Ratio (FCAL26:FCAL18)	% Change
1. All Modes Combined	All Waves Combined	0.65	-35
	Wave 1 (Jan/Feb)	0.42	-58
	Wave 2 (Mar/Apr)	0.51	-49
	Wave 3 (May/Jun)	0.76	-24
	Wave 4 (Jul/Aug)	0.80	-20
	Wave 5 (Sep/Oct)	0.86	-14
	Wave 6 (Nov/Dec)	0.49	-51
2. Private Boat	All Waves Combined	0.52	-48
	Wave 1 (Jan/Feb)	0.36	-64
	Wave 2 (Mar/Apr)	0.33	-67
	Wave 3 (May/Jun)	0.63	-37
	Wave 4 (Jul/Aug)	0.70	-30
	Wave 5 (Sep/Oct)	0.66	-34
	Wave 6 (Nov/Dec)	0.33	-67
3. Shore	All Waves Combined	0.70	-30
	Wave 1 (Jan/Feb)	0.43	-57
	Wave 2 (Mar/Apr)	0.58	-42
	Wave 3 (May/Jun)	0.80	-20
	Wave 4 (Jul/Aug)	0.83	-17
	Wave 5 (Sep/Oct)	0.94	-6
	Wave 6 (Nov/Dec)	0.56	-44



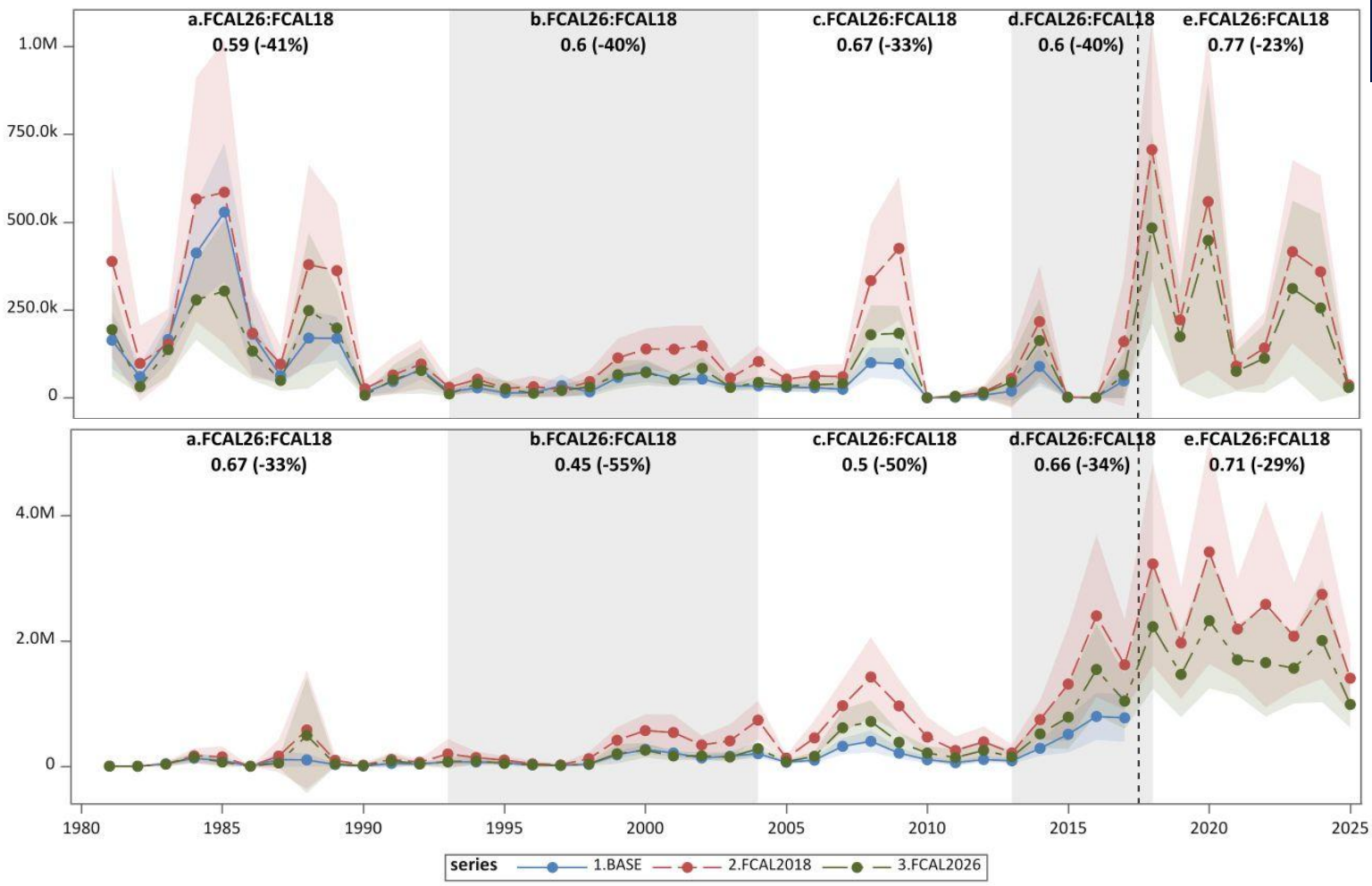
South Atlantic Catch Comparisons

FWC Photo by Amanda Nalley

How the Effort Calibration Impacts Catch Estimates

- **Revised catch time series are systematically lower**
- **Reductions variable by species:** catch differences due to effort estimates varying across states, fishing modes (private boat v. shore), time of year (2-month “waves”), and year ranges within the full time series.
- **South Atlantic:** NC-FLe
- **Select Species:** Red Snapper, Dolphin, Black Sea Bass, Red Grouper, Spanish Mackerel
- **Landings (A+B1) and Releases (B2)**

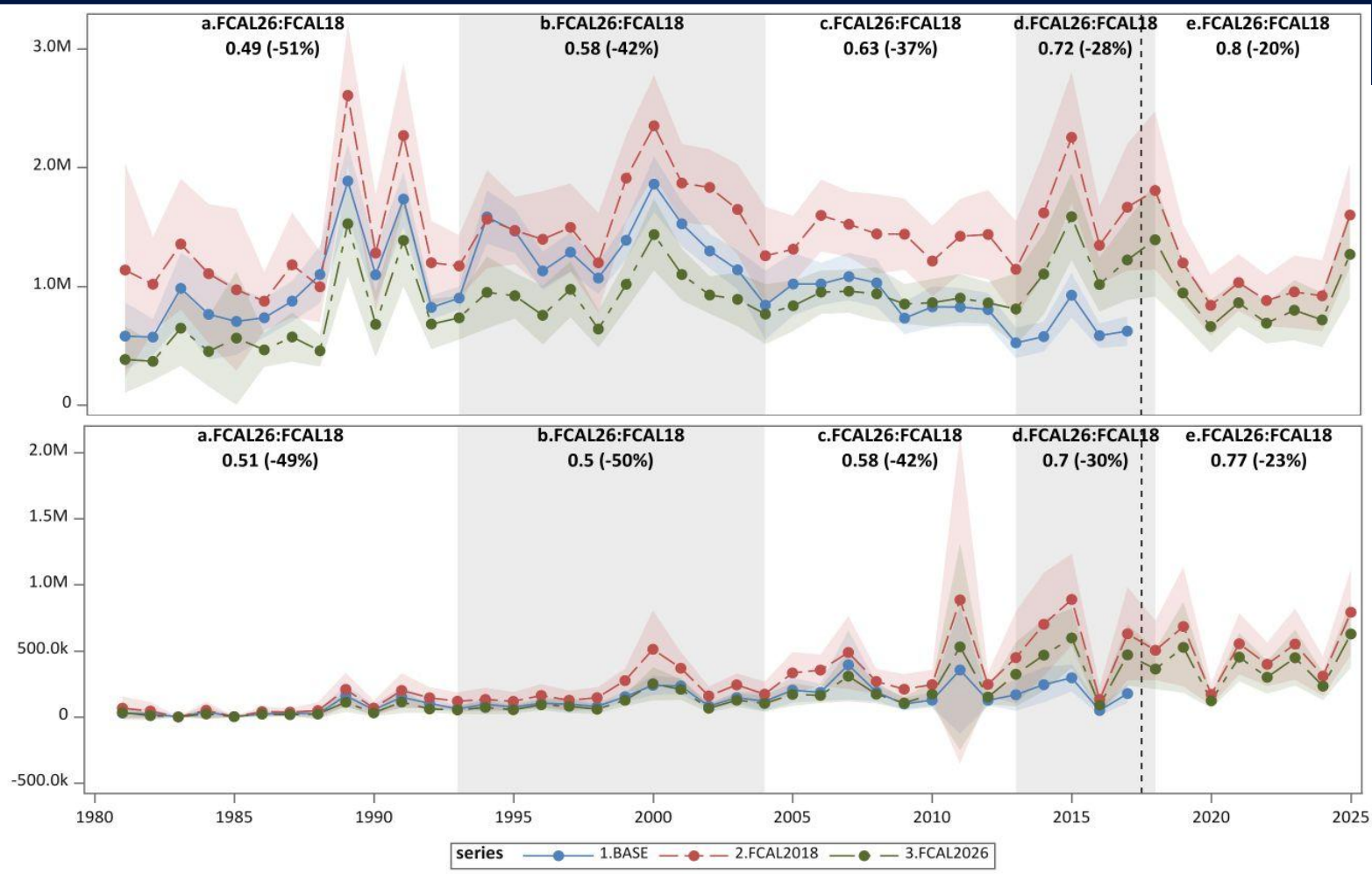
Red Snapper - Annual Landings (A+B1), Releases (B2)



Landings (no.)

Releases (no.)

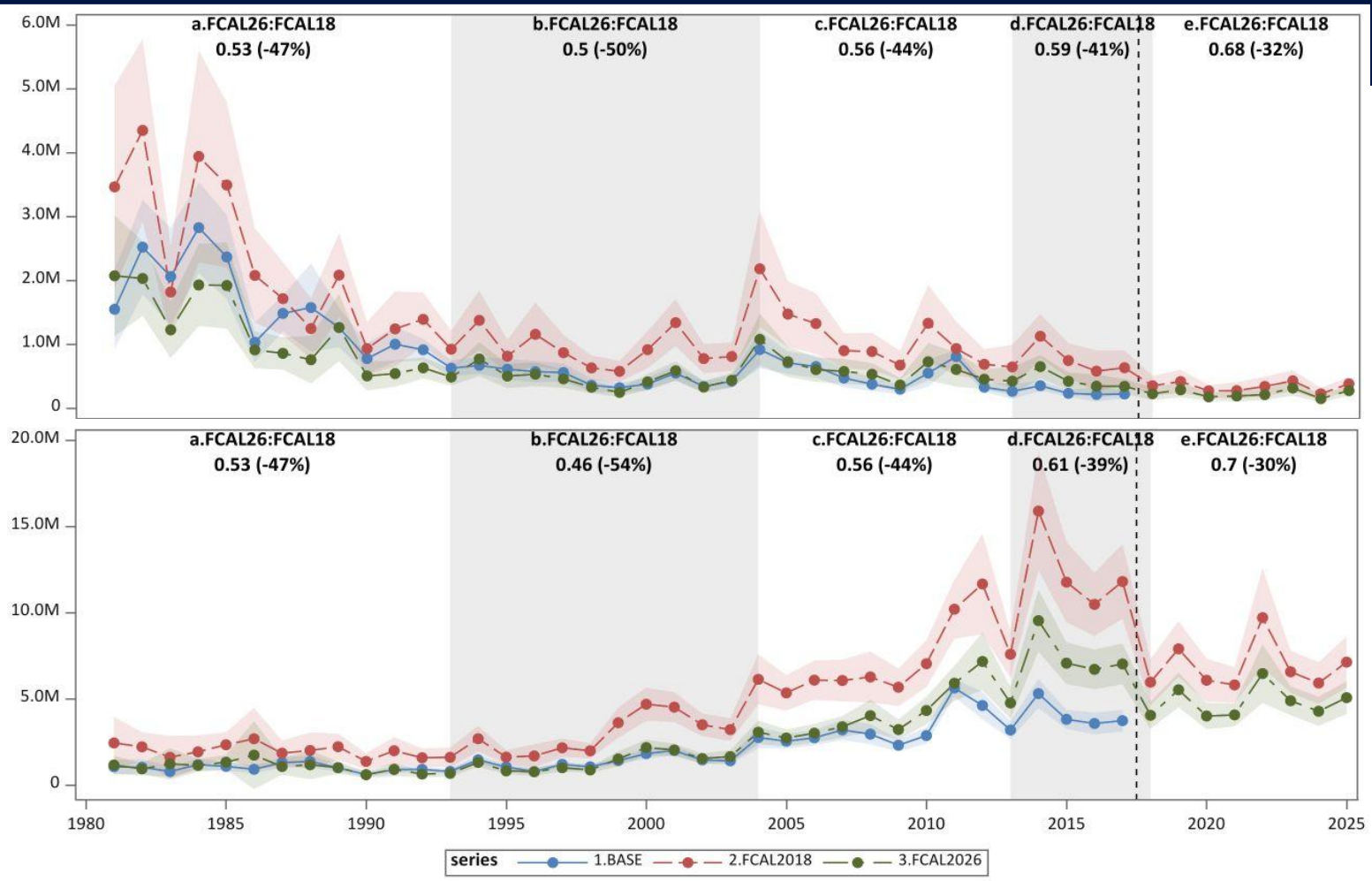
Dolphin - Annual Landings and Releases



Landings (no.)

Releases (no.)

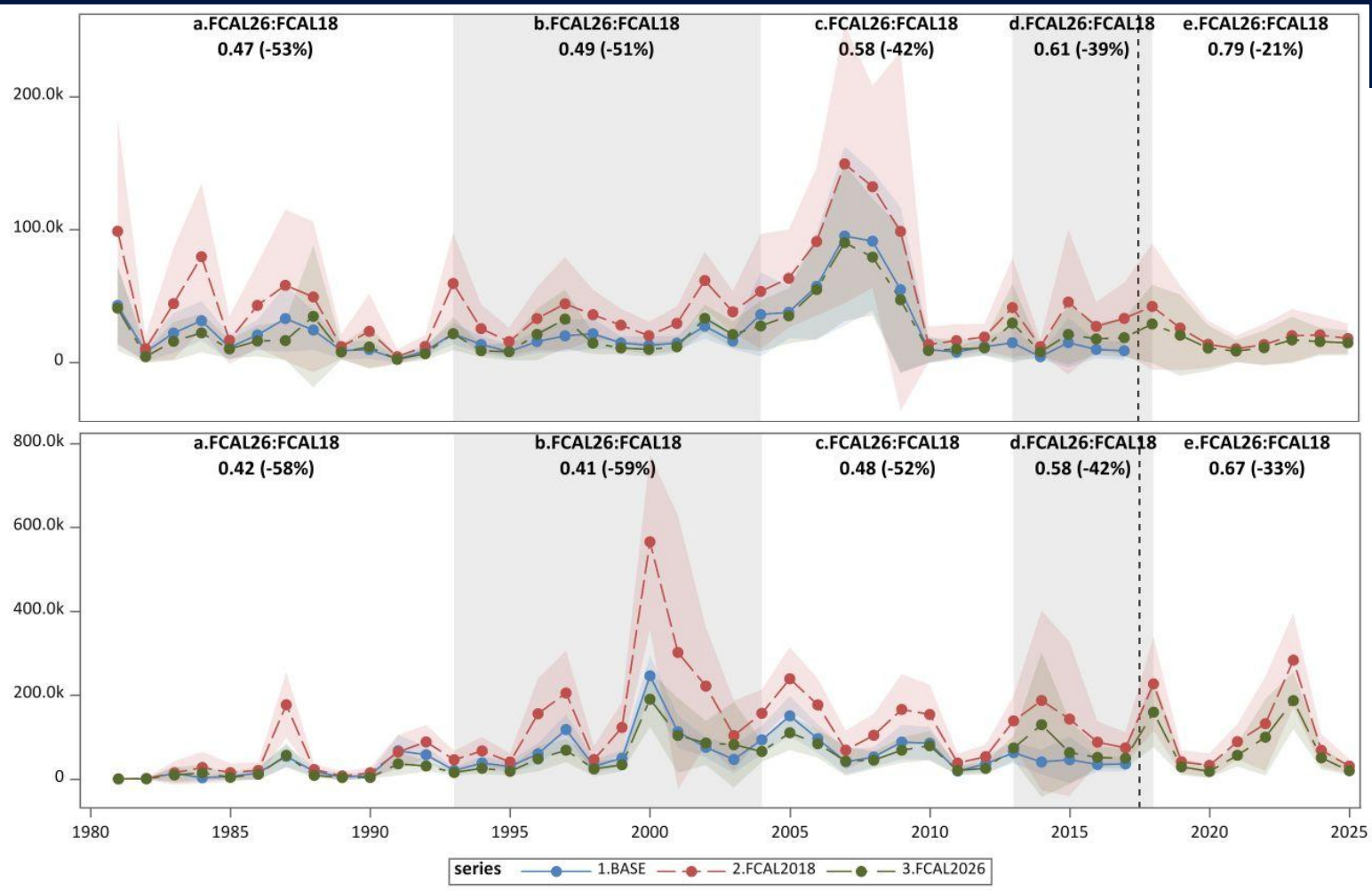
Black Sea Bass - Annual Landings and Releases



Landings (no.)

Releases (no.)

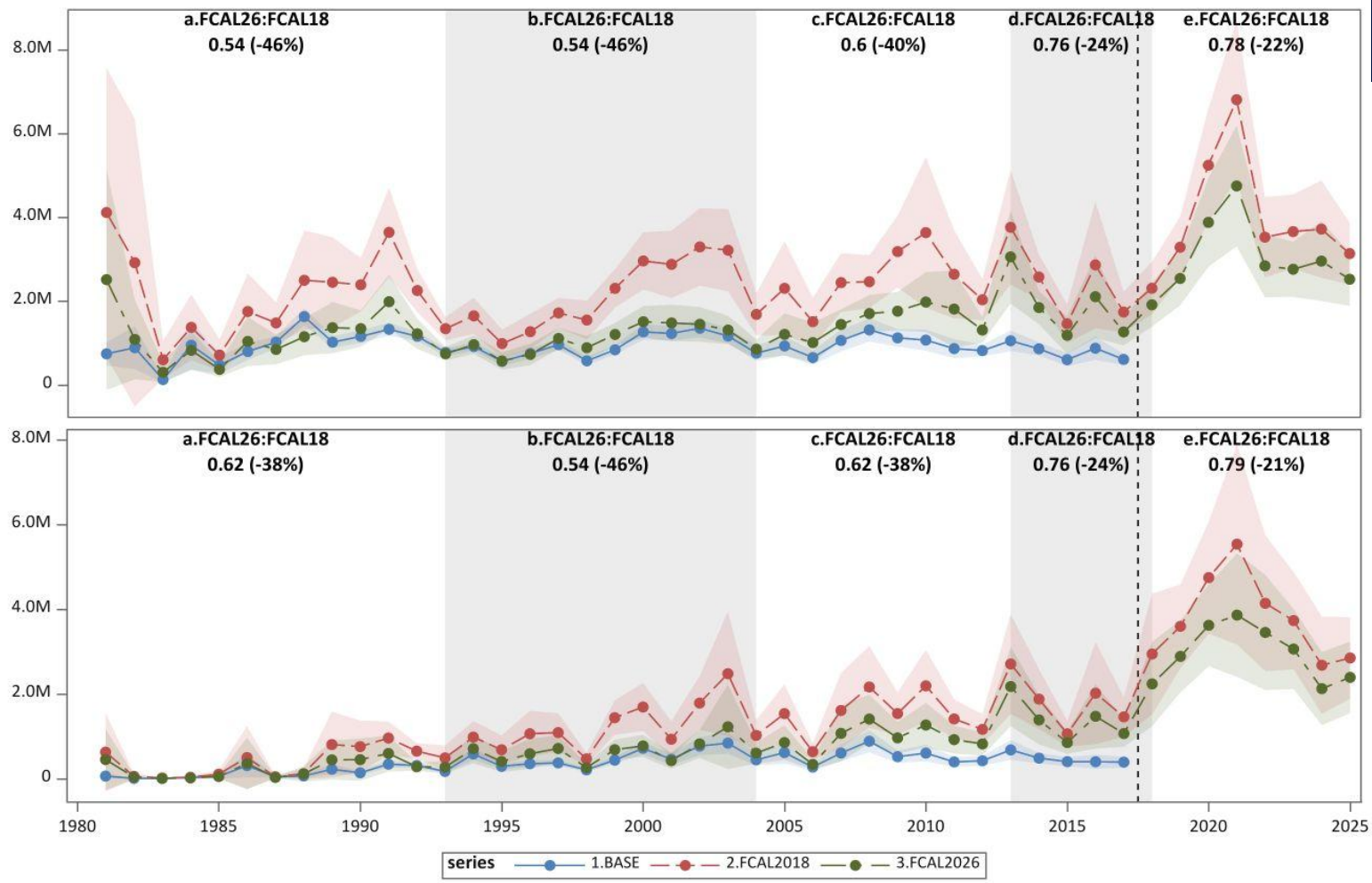
Red Grouper - Annual Landings and Releases



Landings (no.)

Releases (no.)

Spanish Mackerel - Annual Landings and Releases



Landings (no.)

Releases (no.)

South Atlantic - Global Catch Change Summary 81-25

Species	Mode	% of Total Catch (FCAL26)	Landings Ratio (FCAL26:FCAL18)	Landings % Chg	Releases Ratio (FCAL26:FCAL18)	Releases % Chg
BLACK SEA BASS	All Modes Combined	100	0.54	-46	0.60	-40
	Private Boat	73	0.44	-56	0.55	-45
	Shore	18	0.65	-35	0.74	-26
	Combined For-Hire Modes	8	1.00	0	1.00	0
DOLPHIN	All Modes Combined	100	0.62	-38	0.64	-36
	Private Boat	75	0.54	-46	0.63	-37
	Shore	1	0.54	-46	0.62	-38
	Combined For-Hire Modes	24	1.00	0	1.00	0
RED GROUPER	All Modes Combined	100	0.54	-46	0.48	-52
	Private Boat	78	0.48	-52	0.44	-56
	Shore	10	0.70	-30	0.68	-32
	Combined For-Hire Modes	11	1.00	0	1.00	0

South Atlantic - Global Catch Change Summary 81-25

Species	Mode	% of Total Catch (FCAL26)	Landings Ratio (FCAL26:FCAL18)	Landings % Chg	Releases Ratio (FCAL26:FCAL18)	Releases % Chg
RED SNAPPER	All Modes Combined	100	0.62	-38	0.64	-36
	Private Boat	85	0.54	-46	0.61	-39
	Shore	3	0.90	-10	0.87	-13
	Combined For-Hire Modes	12	1.00	0	1.00	0
SPANISH MACKEREL	All Modes Combined	100	0.63	-37	0.69	-31
	Private Boat	28	0.49	-51	0.54	-46
	Shore	65	0.69	-31	0.76	-24
	Combined For-Hire Modes	6	1.00	0	1.00	0

South Atlantic - Catch Trend Agreement Metrics

- Basic measures of agreement that ignore scaling differences between FCAL2026 and FCAL2018 series

- **Macro Trend Correlation [r]**
  - **Definition:** Pearson correlation coefficient calculated on annual estimates, Y_{t_FC2026} Y_{t_FC2018}
  - **What It Measures:** Long-term trajectory and multi-decade cycle alignment between calibrations.
- **Annual Dynamics Correlation [r(ΔY)]**
  - **Definition:** Pearson correlation coefficient calculated on year-to-year first order differences:

    $\Delta Y_{t_FC2026} = Y_{t_FC2026} - Y_{t-1_FC2026}$ $\Delta Y_{t_FC2018} = Y_{t_FC2018} - Y_{t-1_FC2018}$
  - **What It Measures:** Agreement on short-term annual volatility (spikes, drops, and noise).
- **Directional Concordance [% Sign Match]**
  - **Definition:** Percentage of years where both calibrations agree on the direction of annual change: **sgn**(ΔY_{FC2026}) = **sgn**(ΔY_{FC2018})
  - **What It Measures:** Operational agreement on year-over-year directional shifts.

South Atlantic - Catch Trend Agreement Metrics 81-25

		Landings Agreement Metrics			Releases Agreement Metrics		
Species	Mode	Macro Trend r (Y)	Annual Dynamics r(ΔY)	Directional Match %	Macro Trend r (Y)	Annual Dynamics r(ΔY)	Directional Match %
BLACK SEA BASS	All Modes Combined	0.98	0.91	95	0.99	0.98	84
	Private Boat	0.96	0.97	93	0.98	0.98	89
	Shore	0.99	0.99	91	0.96	0.95	86
DOLPHIN	All Modes Combined	0.86	0.97	89	0.98	0.98	95
	Private Boat	0.80	0.95	84	0.98	0.98	98
	Shore	0.92	0.83	91	0.97	0.99	73
RED GROUPER	All Modes Combined	0.94	0.89	95	0.89	0.91	93
	Private Boat	0.93	0.93	91	0.90	0.94	95
	Shore	0.95	0.95	100	0.89	0.89	86

South Atlantic - Catch Trend Agreement Metrics 81-25

		Landings Agreement Metrics			Releases Agreement Metrics		
Species	Mode	Macro Trend r (Y)	Annual Dynamics r(ΔY)	Directional Match %	Macro Trend r (Y)	Annual Dynamics r(ΔY)	Directional Match %
RED SNAPPER	All Modes Combined	0.96	0.96	93	0.99	0.96	91
	Private Boat	0.92	0.95	95	0.99	0.97	98
	Shore	0.99	0.98	100	1.00	1.00	90
SPANISH MACKEREL	All Modes Combined	0.93	0.93	93	0.98	0.95	98
	Private Boat	0.71	0.91	84	0.89	0.93	89
	Shore	0.96	0.94	93	0.99	0.96	95



Current Status and 2026 Estimates

Current Status

- **MRIP Queries**
  - 2026 Calibration Comparisons for original FES (PRE) and calibrated (CAL) catch and effort estimates
  - Standard queries now return calibrated estimates
- **MRIP Data Downloads**
  - Estimate datasets, public-use (trip,catch,size,fes) datasets are all updated for the calibrated estimates
- **Data products available for 1981-2025**

2026 Estimation

- **Waves 1-3 (Jan/Feb,Mar/Apr,May/Jun) 2026**
  - Targeting early November for release of preliminary estimates for all three waves
  - Will also produce back-calibrated “original FES” estimates and make available in the 2026 Calibration Comparison queries

2026 Estimation

- **Waves 4-5 2026**
  - Will release Waves 4 & 5 together
  - Targeting mid-December
- **Wave 6 and Final 2026**
  - Plan to release on schedule
    - Wave 6 mid-February 2027
    - Final 2026 mid-April 2027



Questions?

john.foster@noaa.gov