



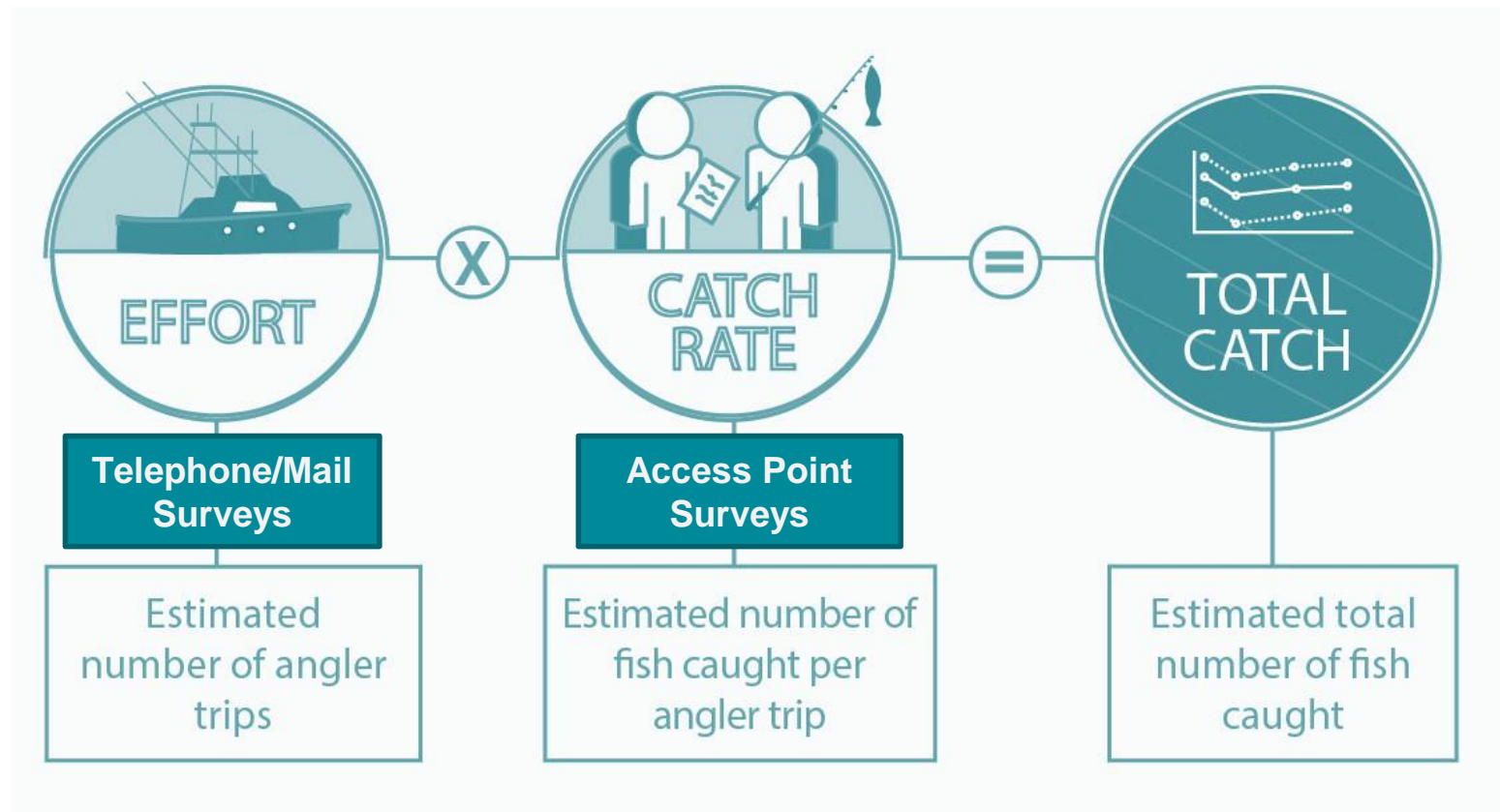
**NOAA
FISHERIES**

Marine Recreational Information Program

Transition to Improved Survey Designs

John Foster
Kelly Denit

Estimating Total Recreational Catch



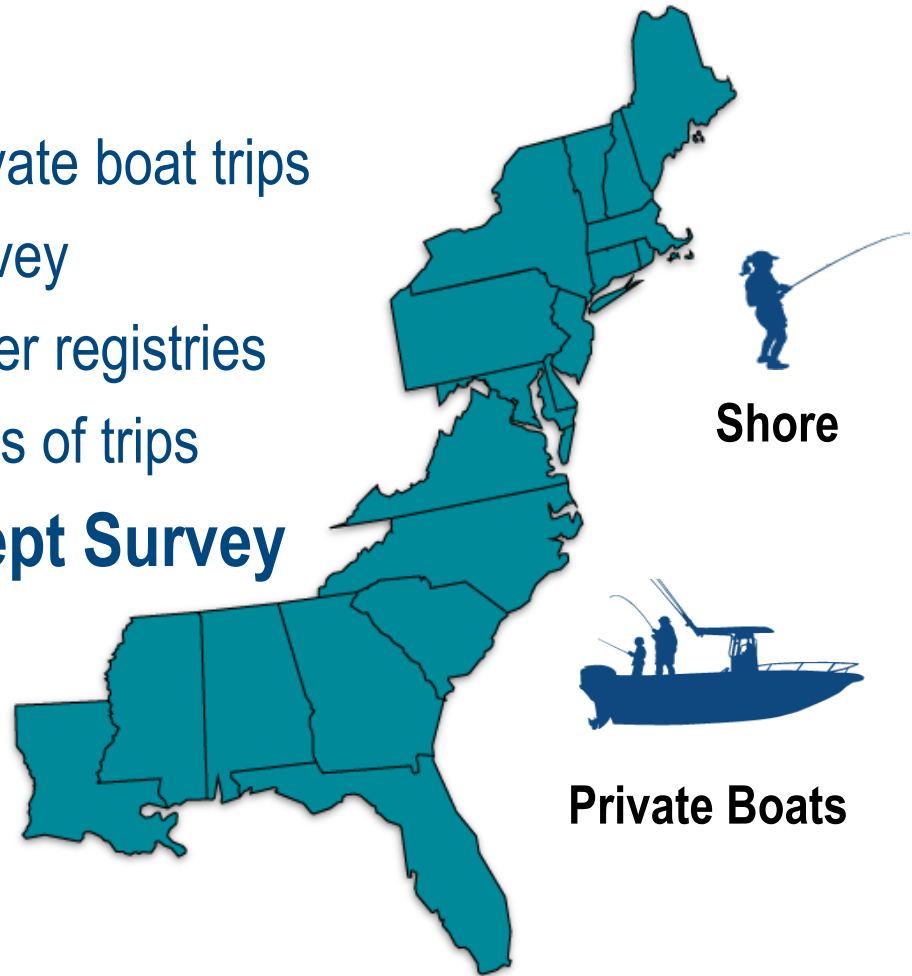
Improved Survey Designs

Fishing Effort Survey

- New mail survey of shore & private boat trips
- Replaces legacy telephone survey
- Uses USPS database and angler registries
- Higher, more accurate estimates of trips

Access Point Angler Intercept Survey

- New design for sampling catch
- Better time-of-day coverage
- More statistically sound



Fishing Effort Survey



We're reaching more anglers.



Surveys get into the right hands.

3X

Much higher response rate.



Improved questionnaire.

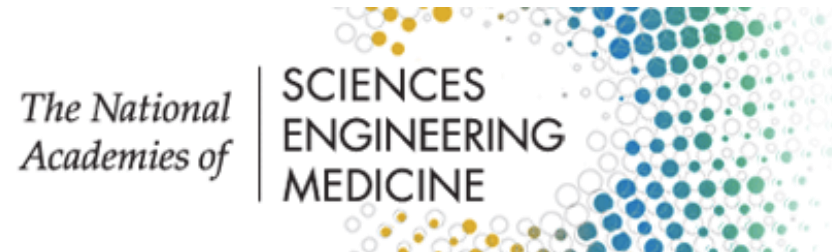


More complete answers.

Extensive Testing and Peer Review

“The [Fishing Effort Survey] methodologies, including the address-based sampling survey design, are **major improvements.**”

“The current methods used in the APAIS ... are a vast improvement over the previous sampling and estimation procedures and reflect **state of the art methods** in survey sampling.”



Transition Plan

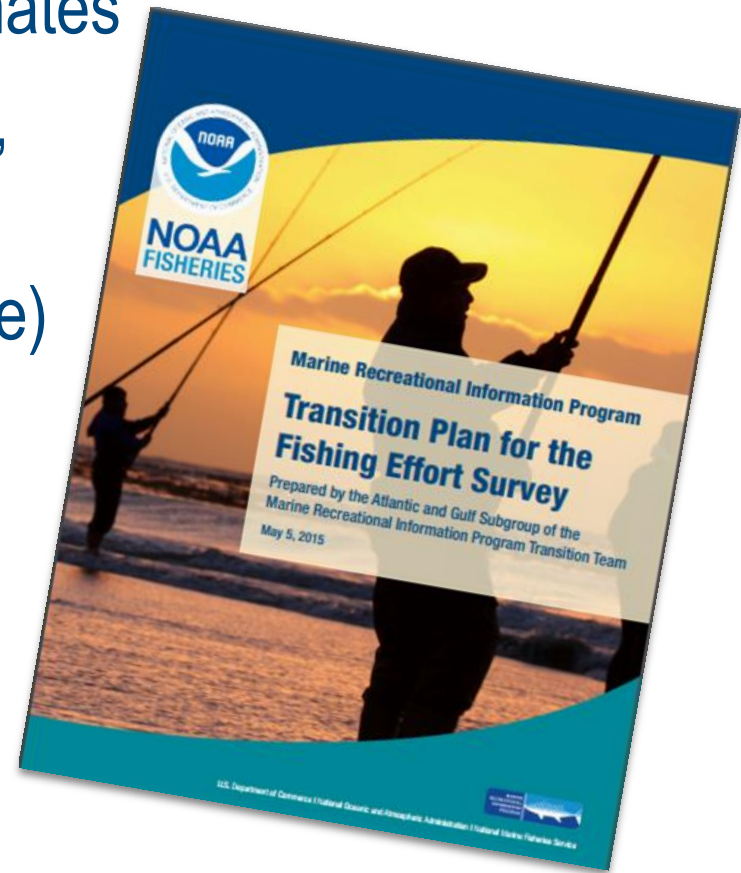
Improving designs can change estimates

Transition Plan developed by NOAA, states, councils, and commissions.

- ✓ Benchmarking (mail vs. phone)
- ✓ Calibration (old vs. new)
- ✓ Convert “old” estimates into “new” currency

Stock assessments

Management decisions



FES Calibration Model

- Developed with consultants at Colorado State University.
- Fay-Herriot small area estimation model (mixed model).
 - Accounts for various sources of variation (trend, seasonality, irregular, sampling error, and non-sampling method effects).
 - Allows easy incorporation of covariates (e.g. wireless phone use).
 - Contains simple ratio adjustments as limiting special cases.
 - As formulated, calibration methodology follows a standard, well-established, relatively simple procedure (EBLUP).
 - Yields optimal predictions = calibrated values, under assumptions of model.

APAIS Calibration Model

- Developed with consultants at Colorado State University.
- Sample weight adjustment method.
 - Raking, iterative proportional fitting.
 - Standard practice in survey methodology.
 - Provides single framework for calibrating all APAIS estimate components (e.g., catch rates by species and catch type) .
 - Address both calibration needs associated with APAIS design changes in 2013 as well as implementation of weighted estimation methods applied to years 2004 through present.
 - Maintains utility of MRIP public-use (micro) datasets for custom estimation.
 - Lack of benchmark data collection period.



MRIP Calibration Model Peer Reviews

Fishing Effort Survey

- June 27-29, 2017 workshop in Silver Spring, MD.
- Reviewers unanimously endorsed the proposed FES/CHTS calibration model.

Access Point Angler Intercept Survey

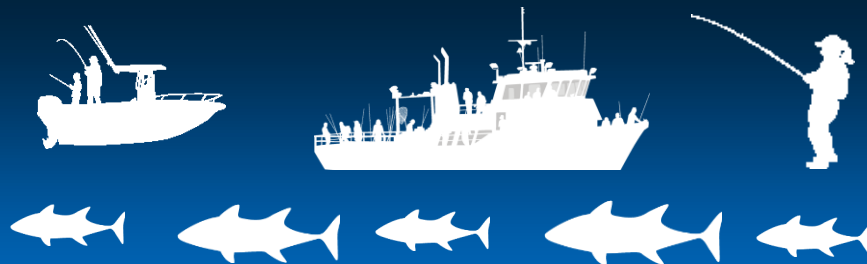
- March 20-22, 2018 workshop in Silver Spring, MD.
- Initial reviews positive, anticipating full review reports in coming weeks.

2018 Annual Catch Limits



2018 ACLs set using CHTS estimates

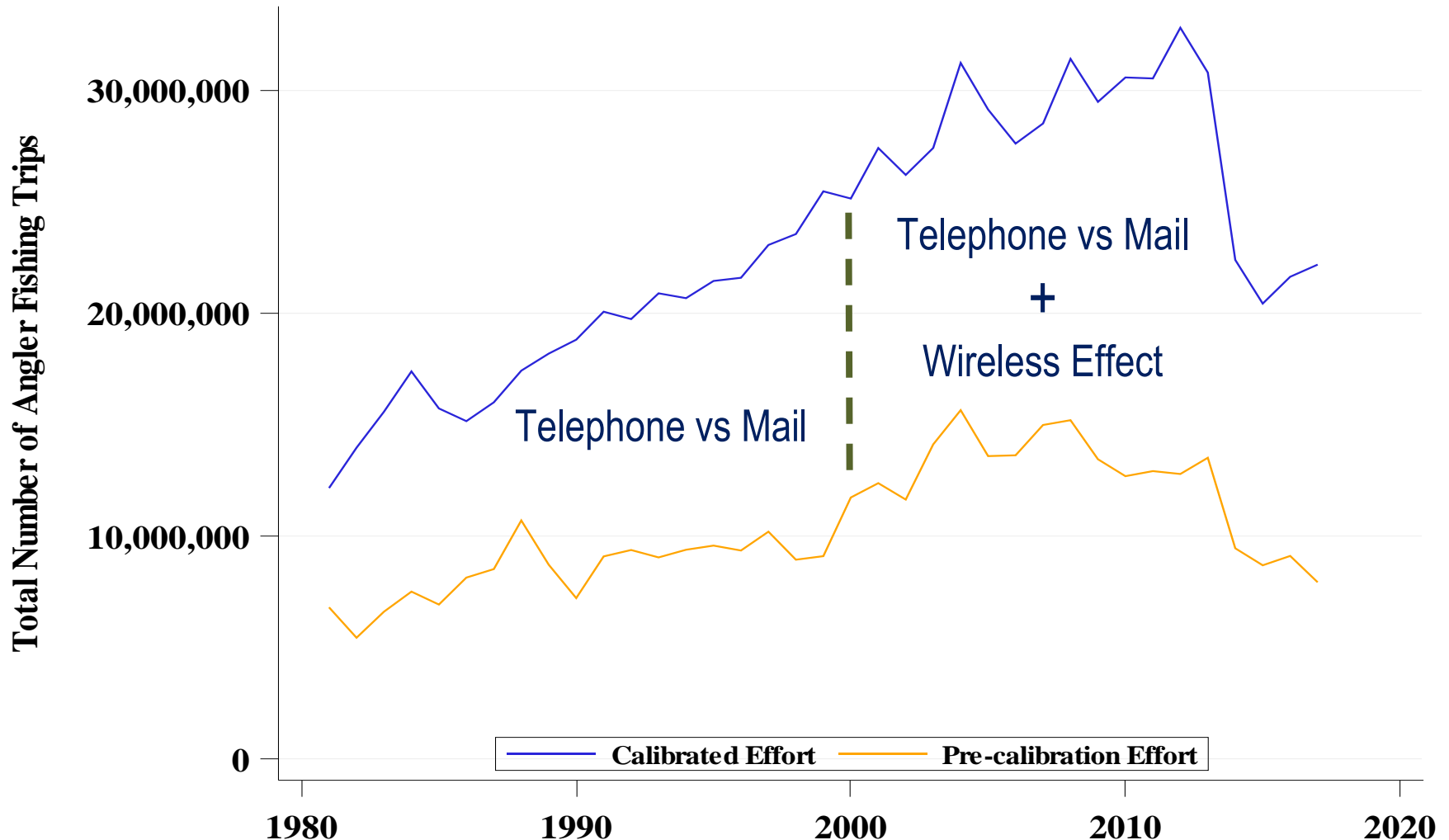
FES  **CHTS**
Calibration model converts both directions



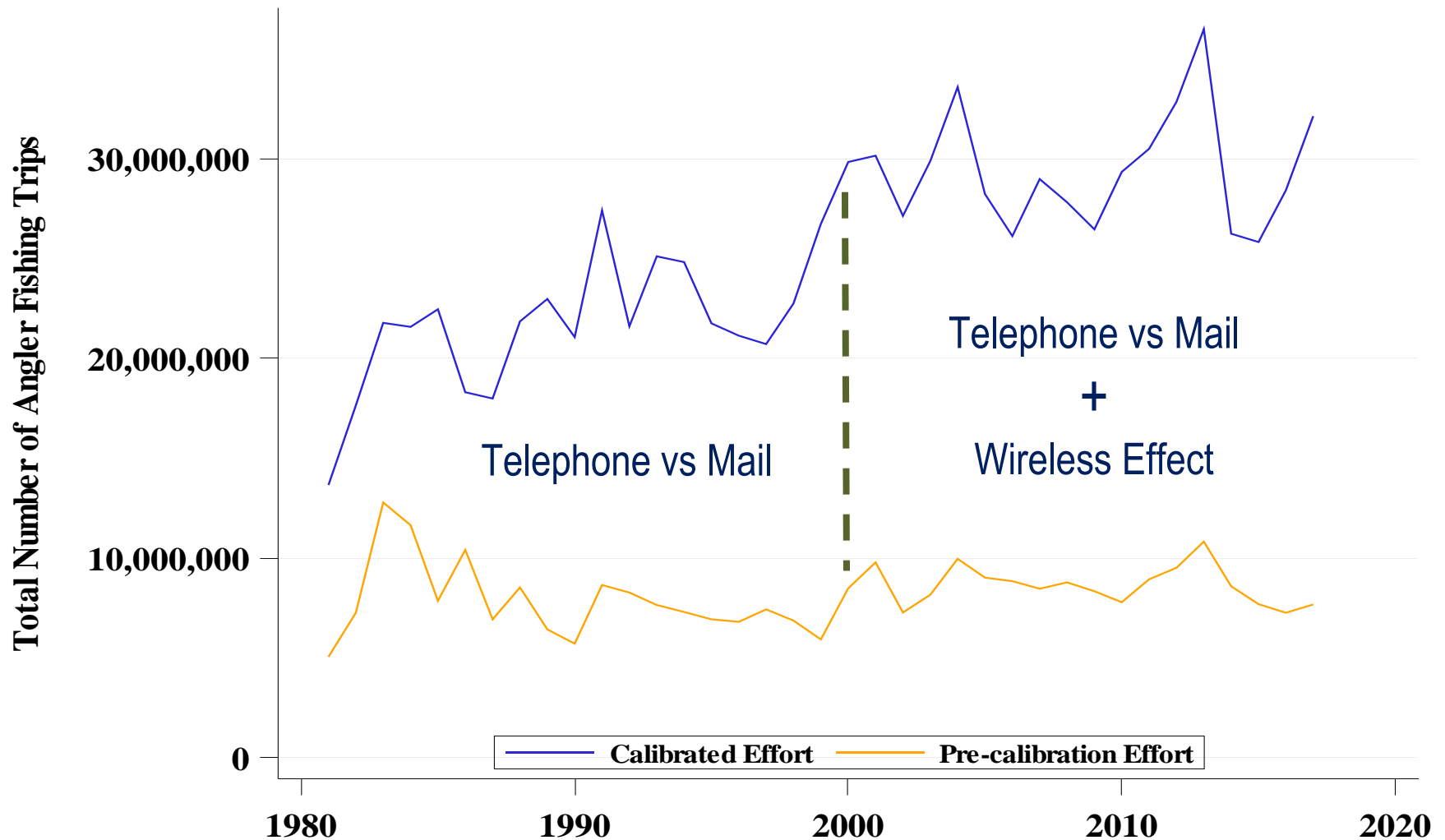
Year-end estimates in same “currency”



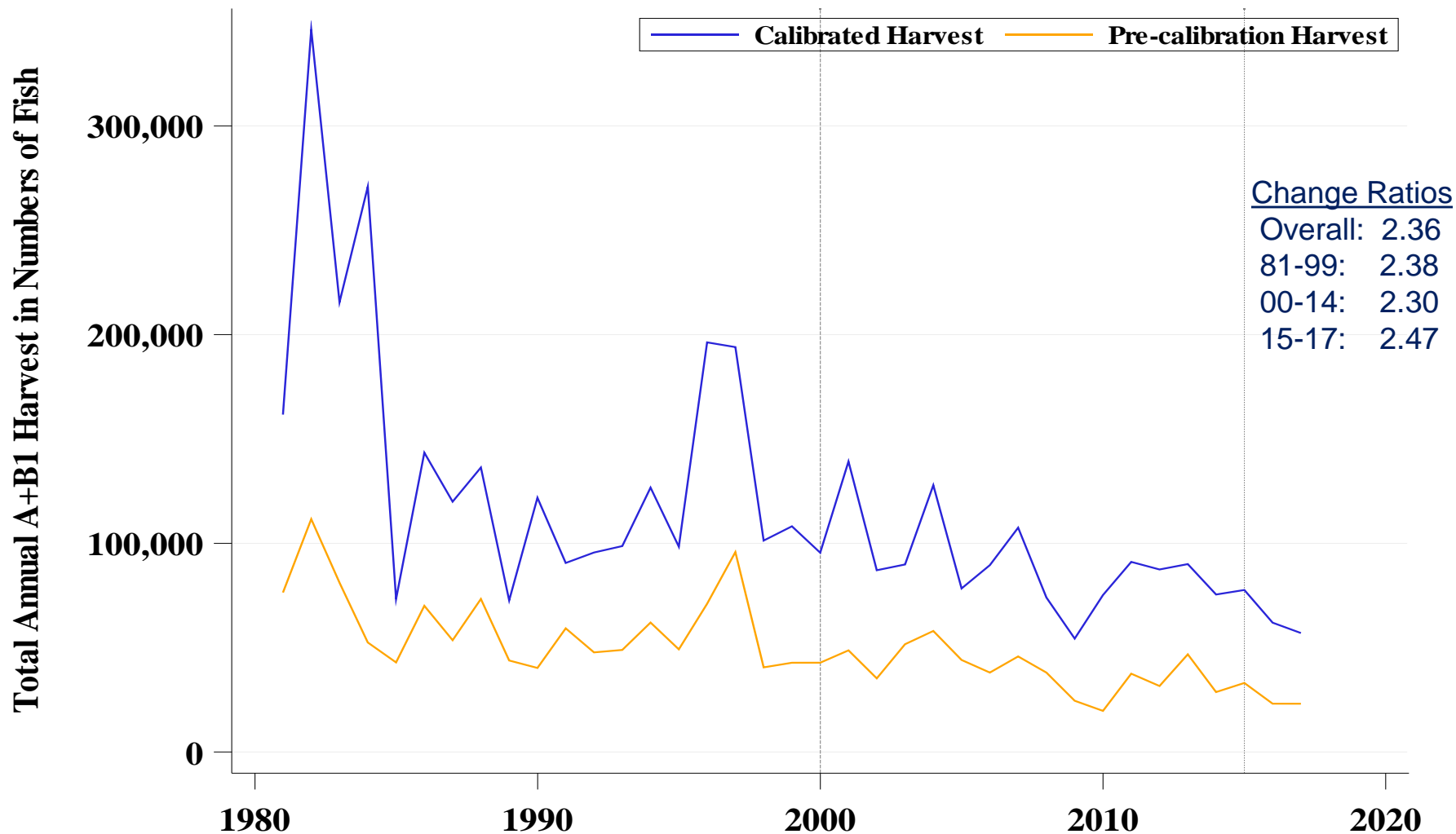
Gulf of Mexico Private Boat Effort



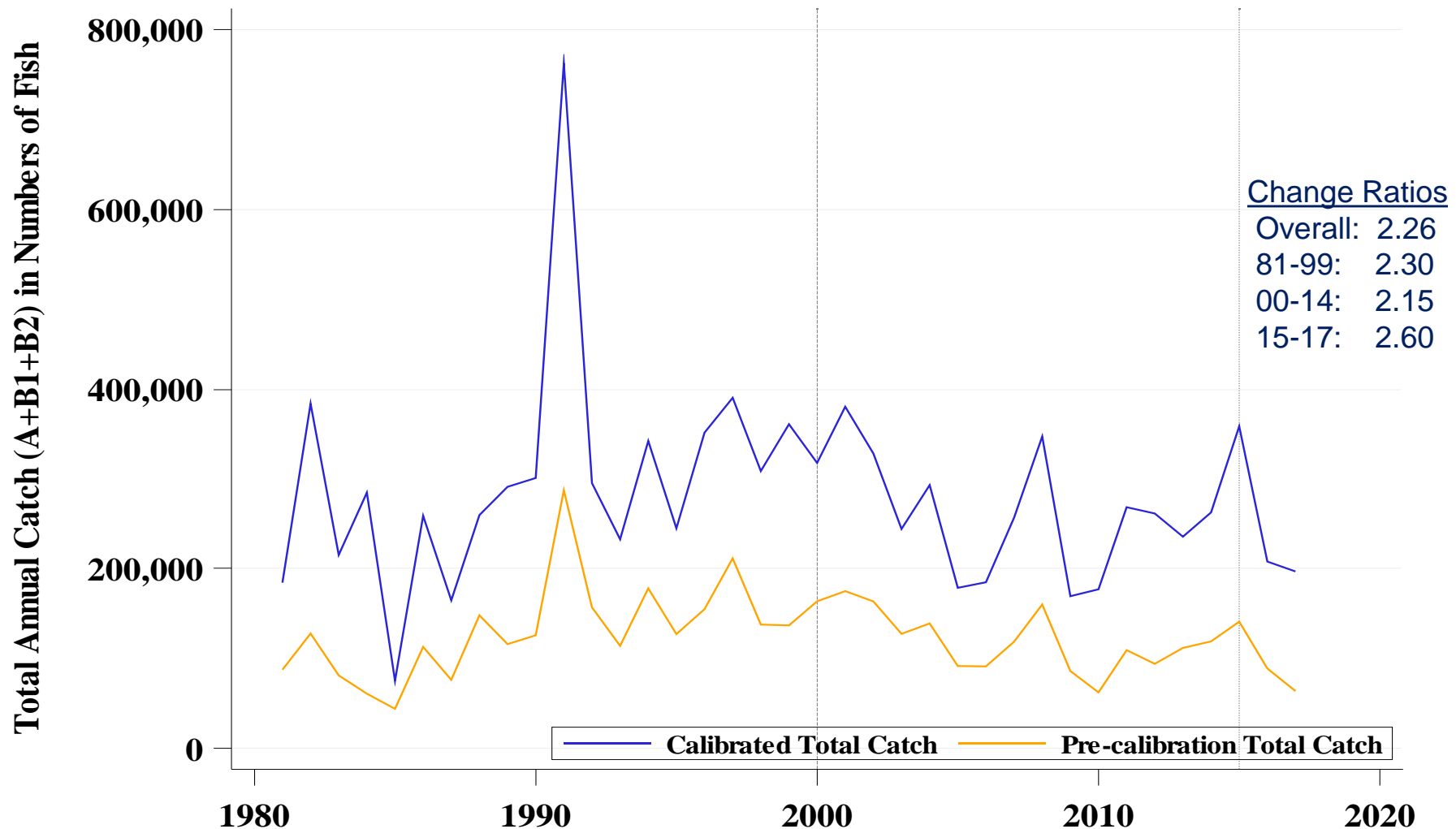
Gulf of Mexico Shore Effort



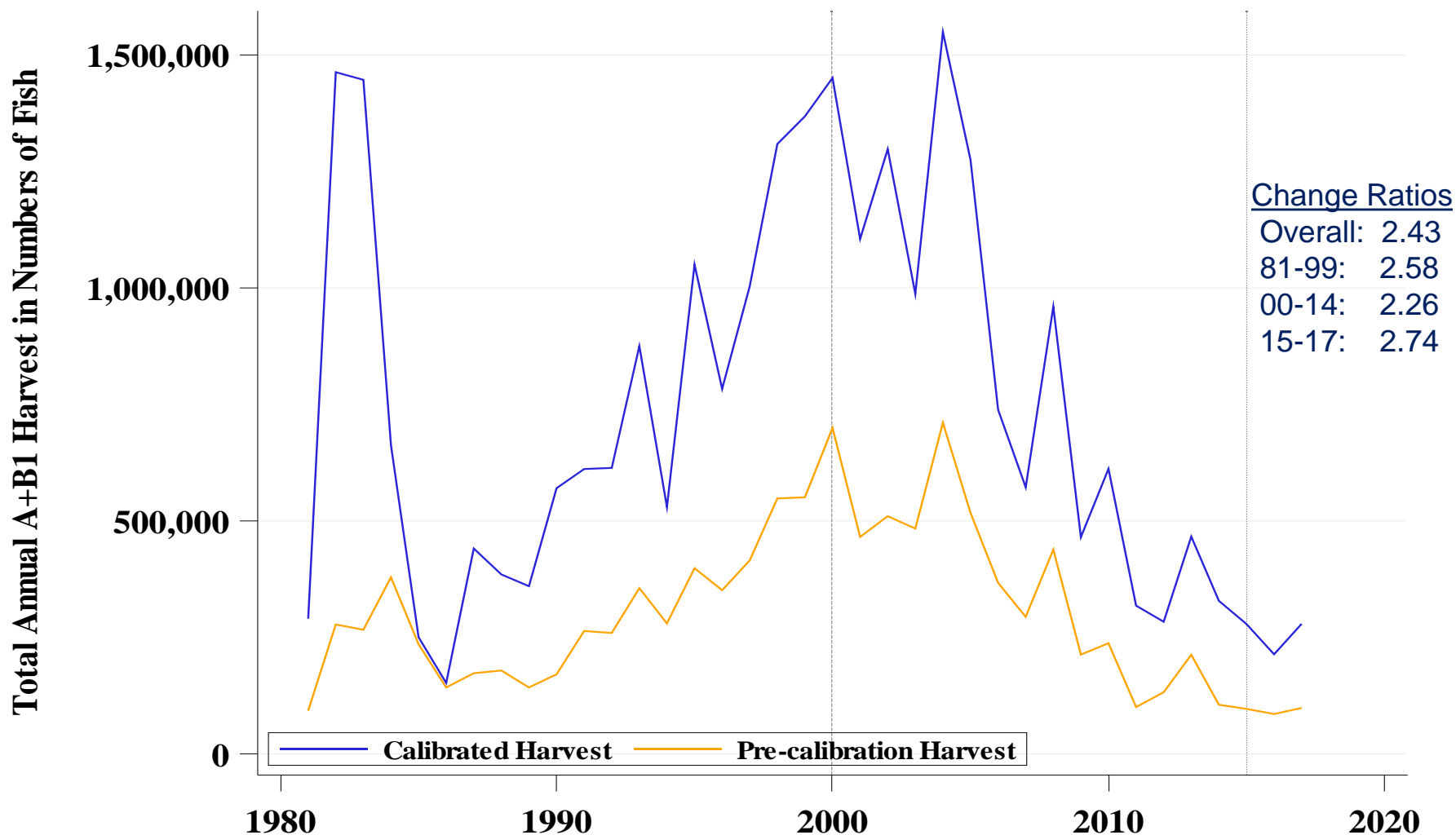
Cobia Harvest



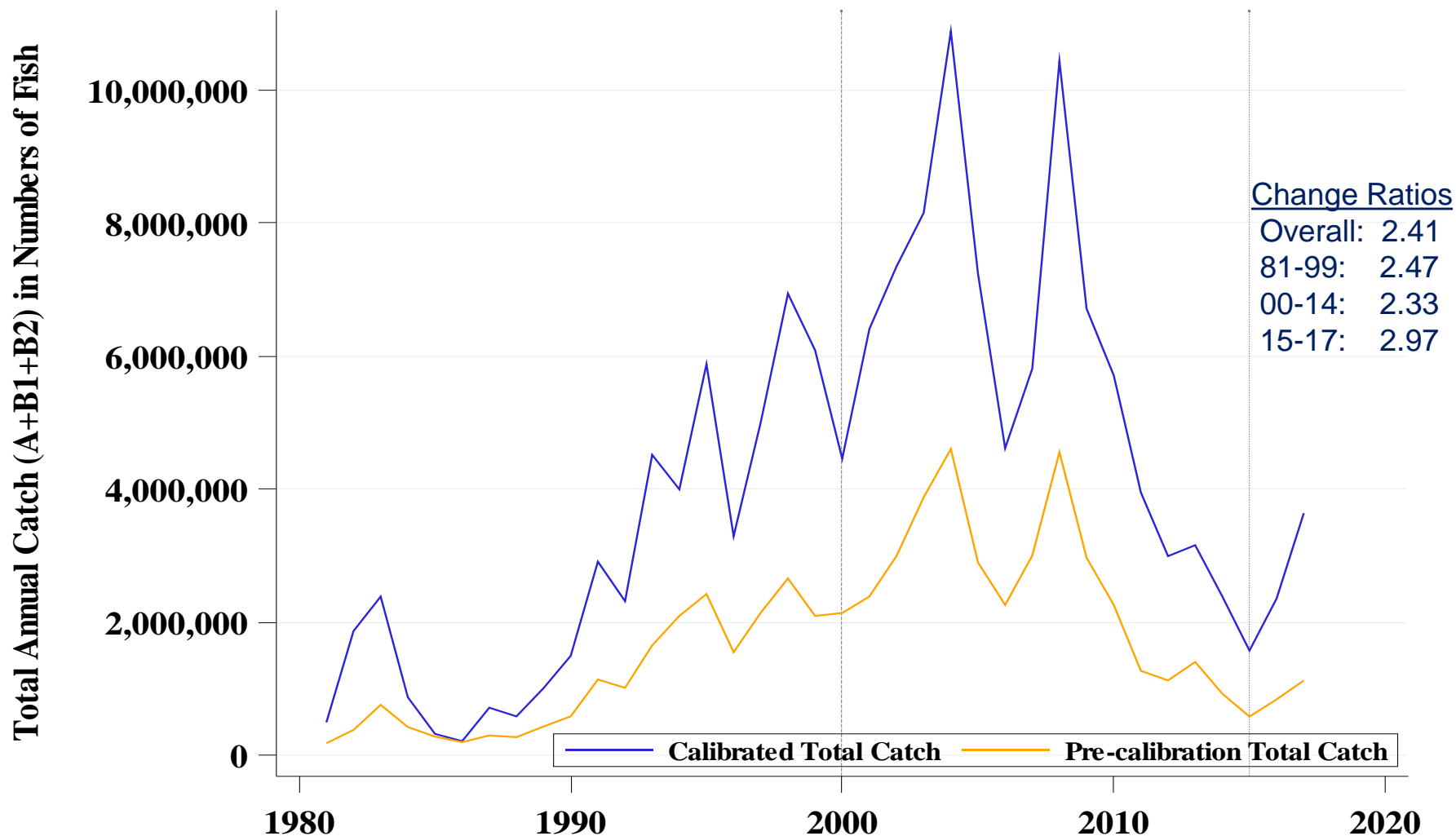
Cobia Total Catch



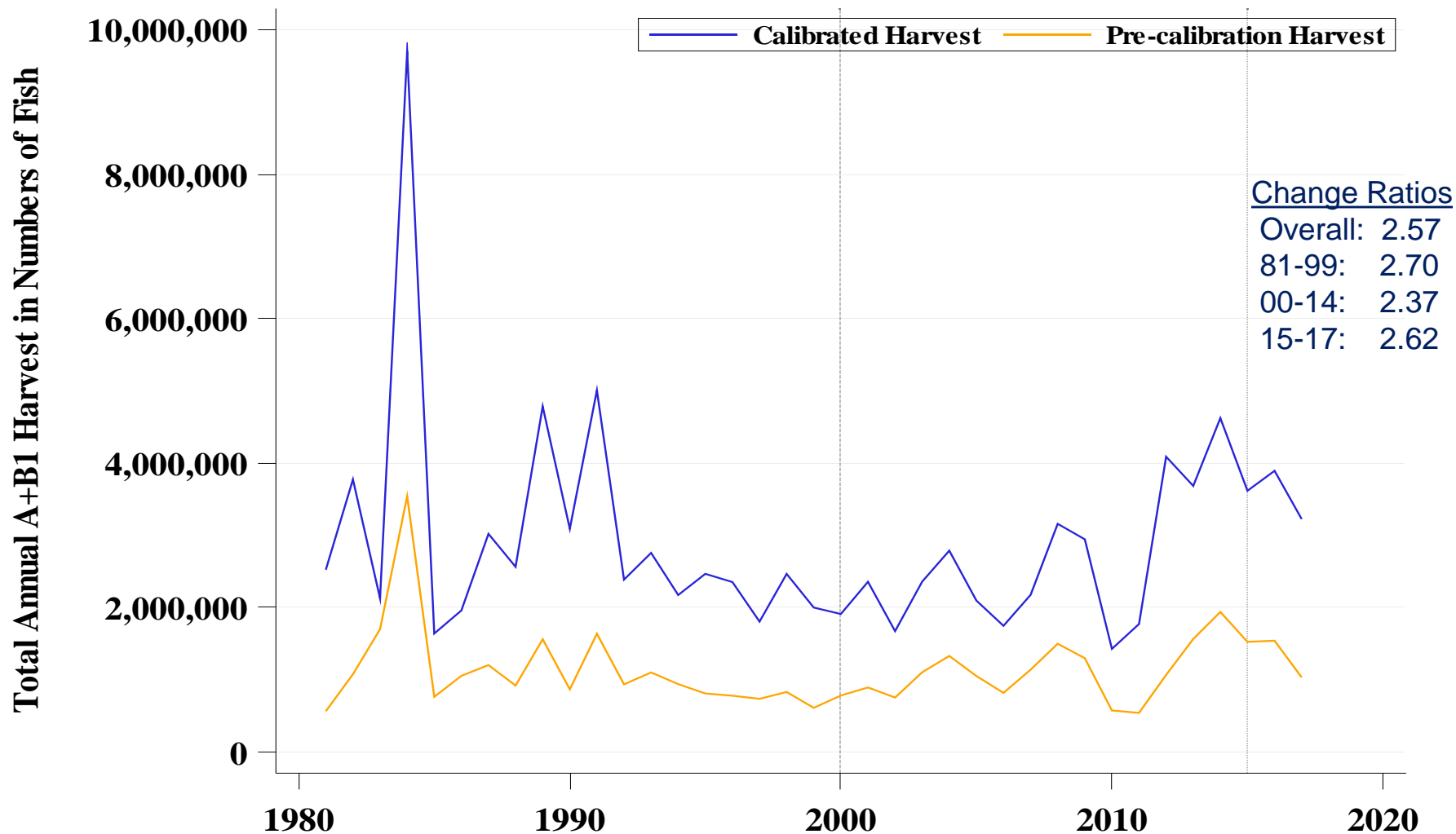
Gag Harvest



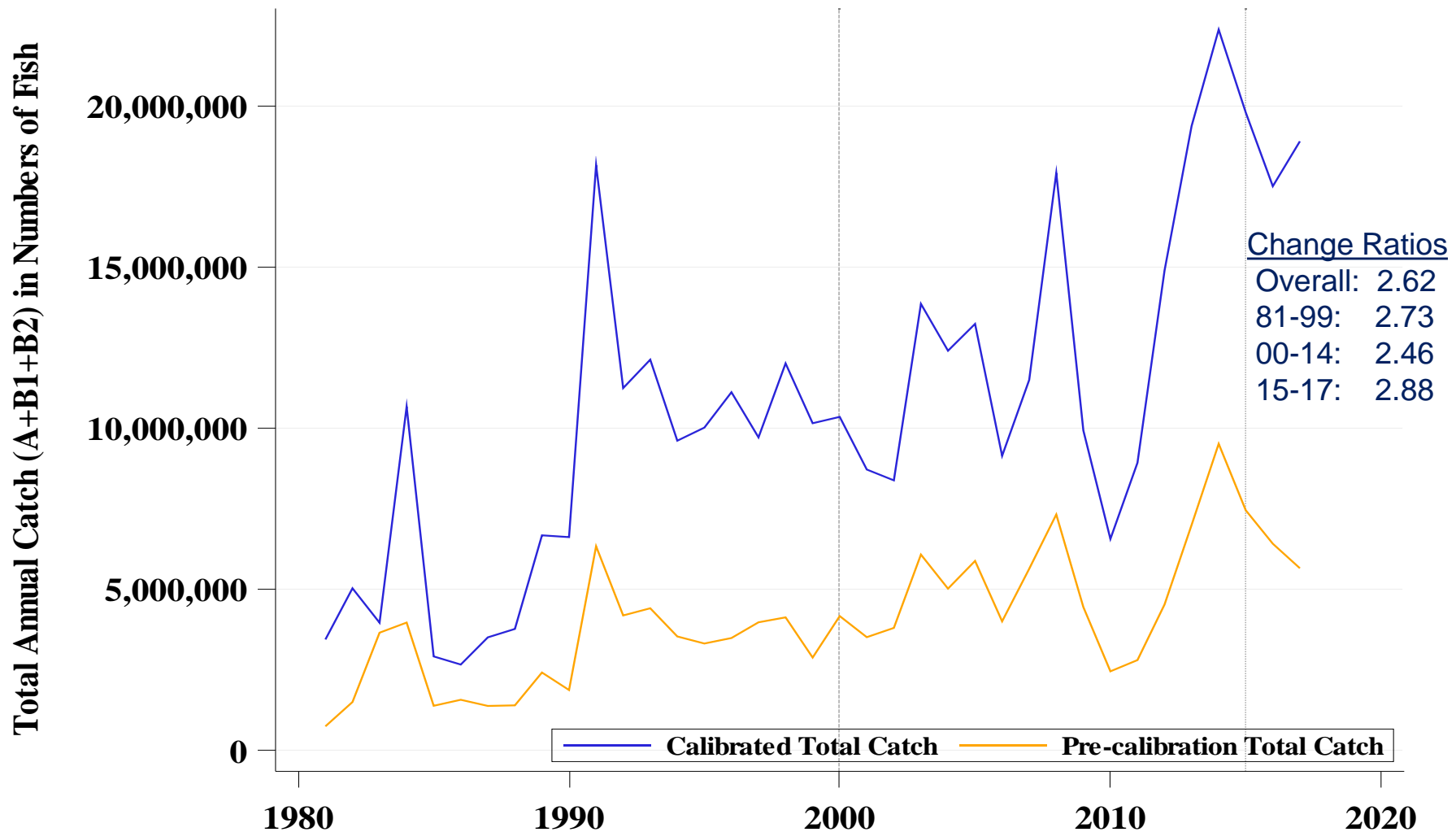
Gag Total Catch



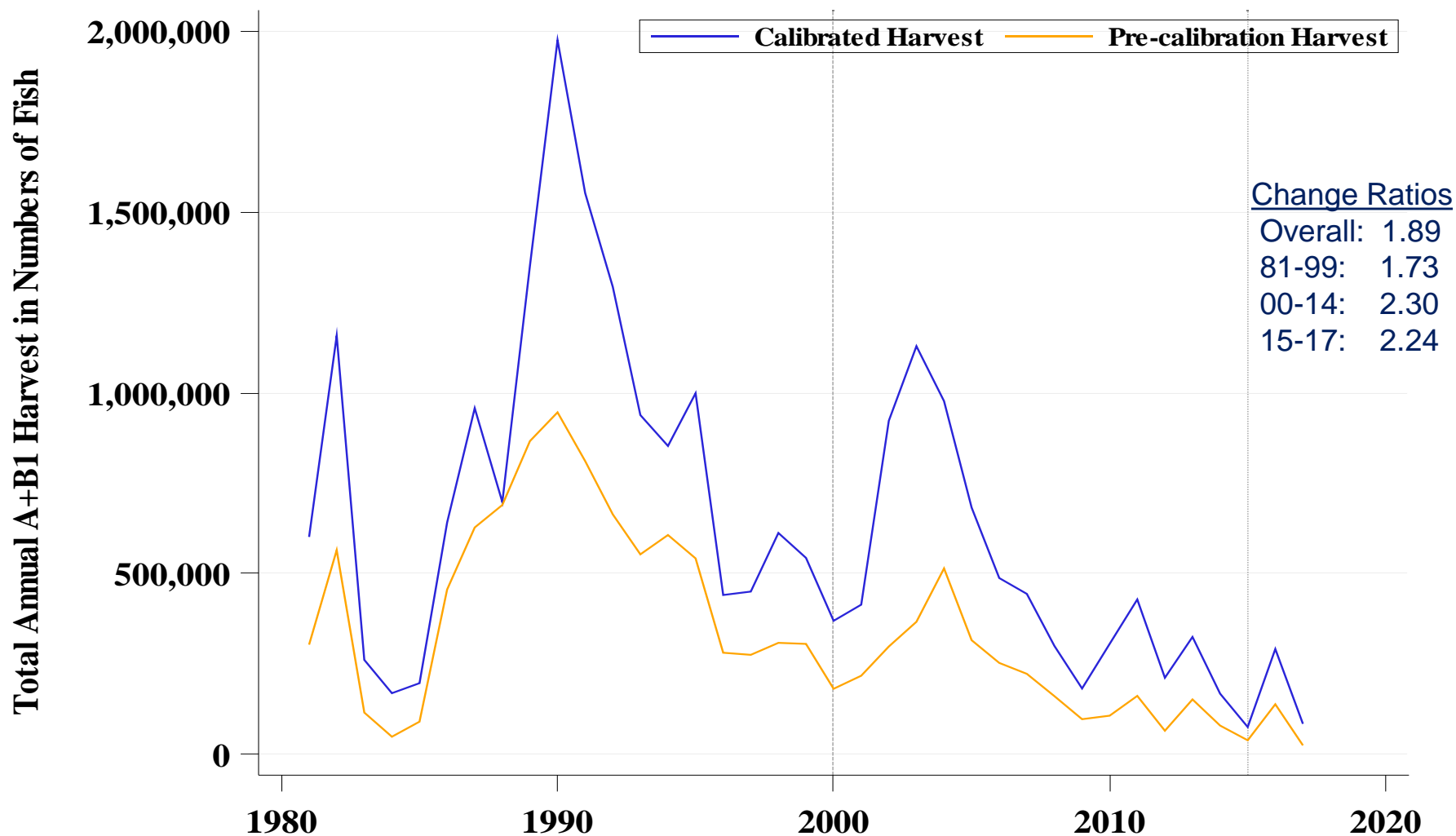
Gray Snapper Harvest



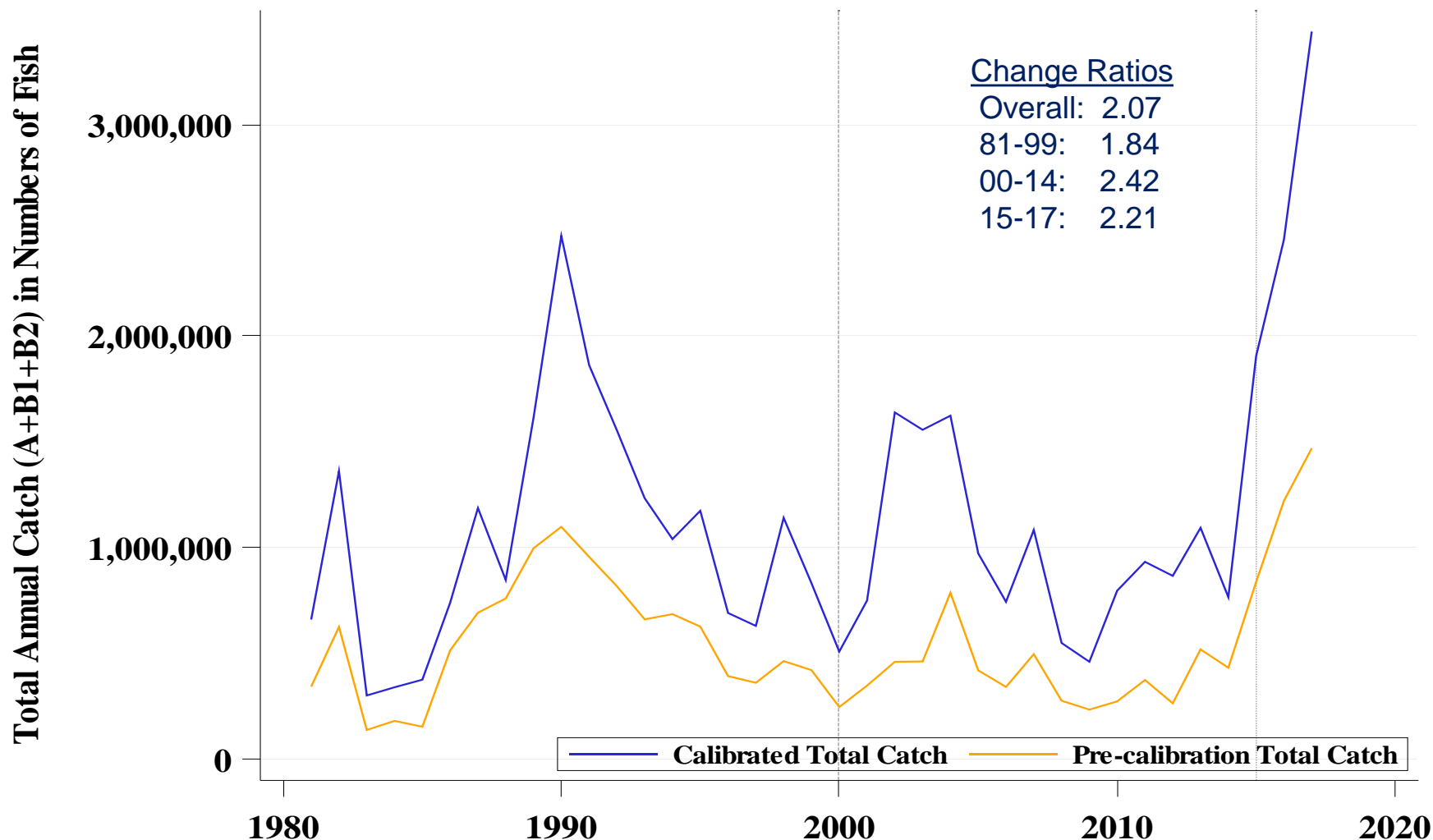
Gray Snapper Total Catch



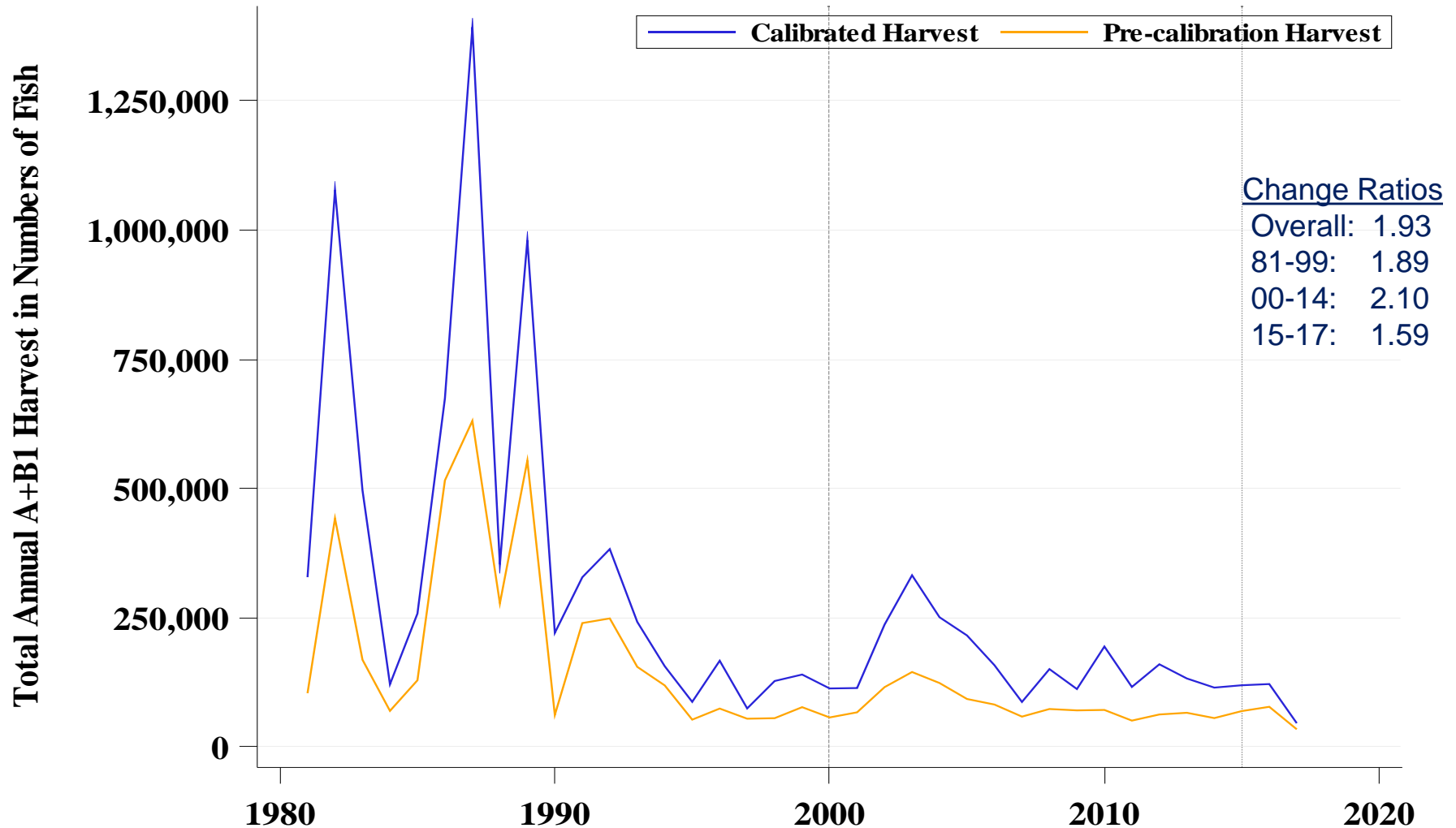
Gray Triggerfish Harvest



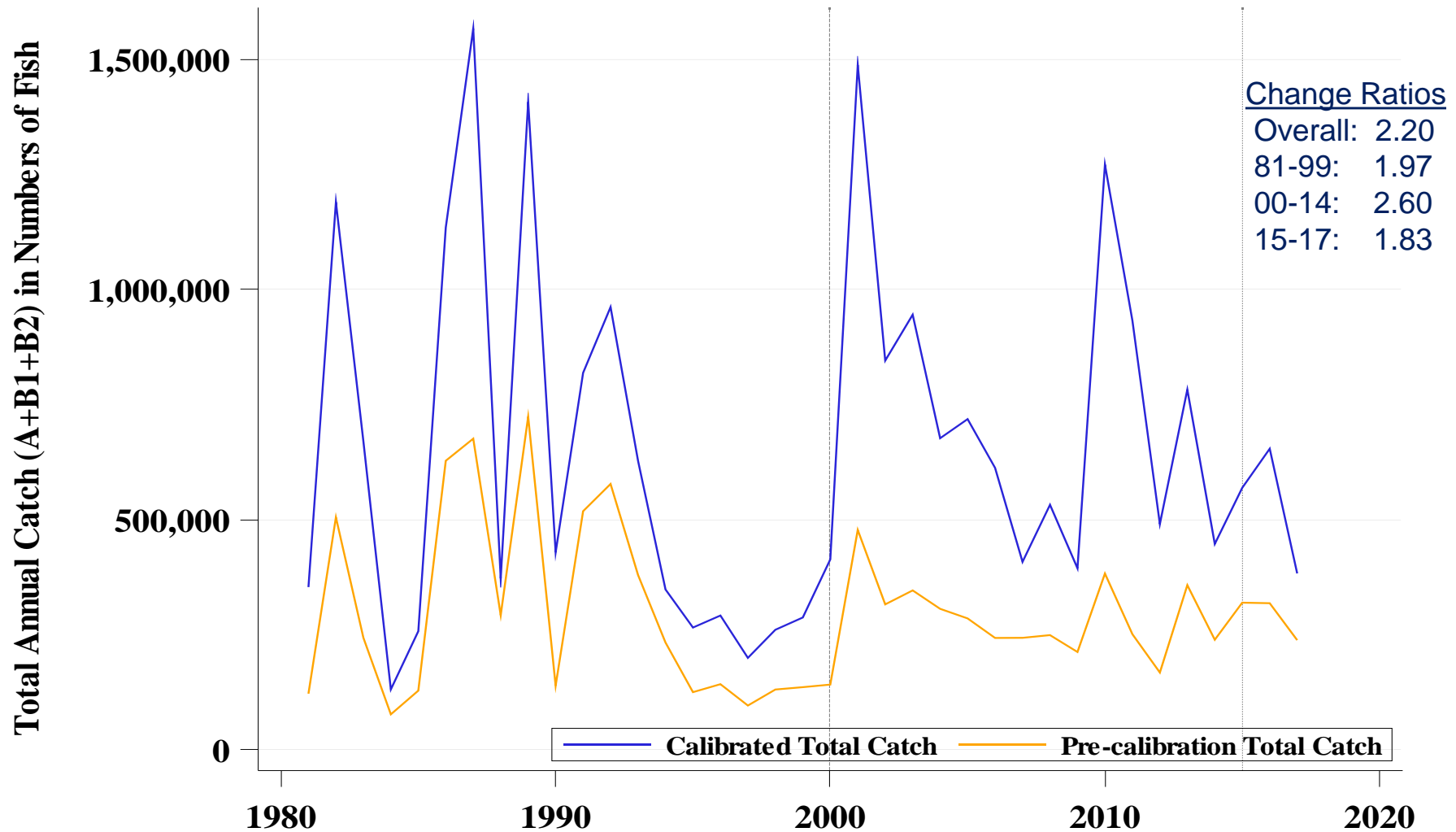
Gray Triggerfish Total Catch



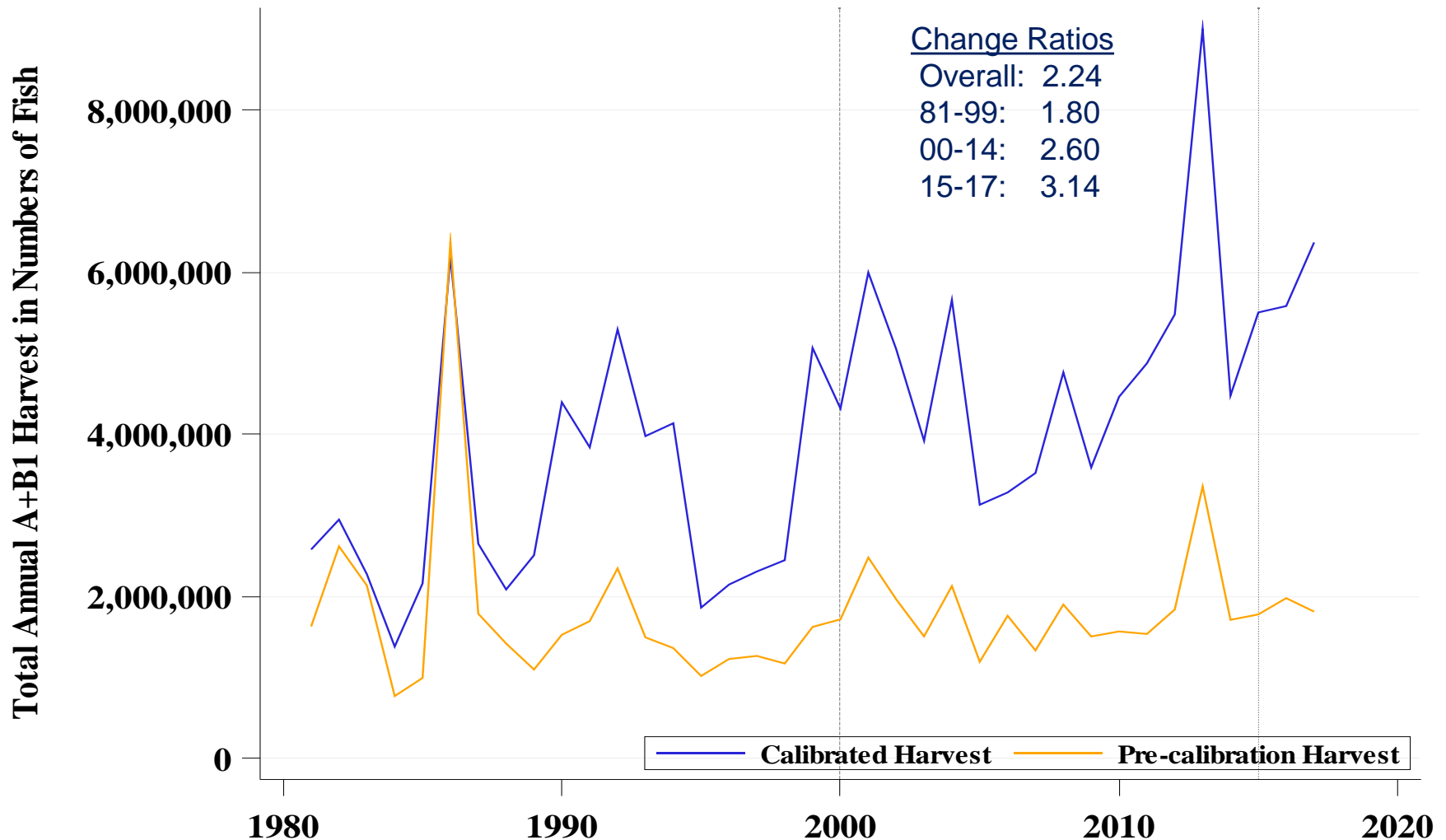
Greater Amberjack Harvest



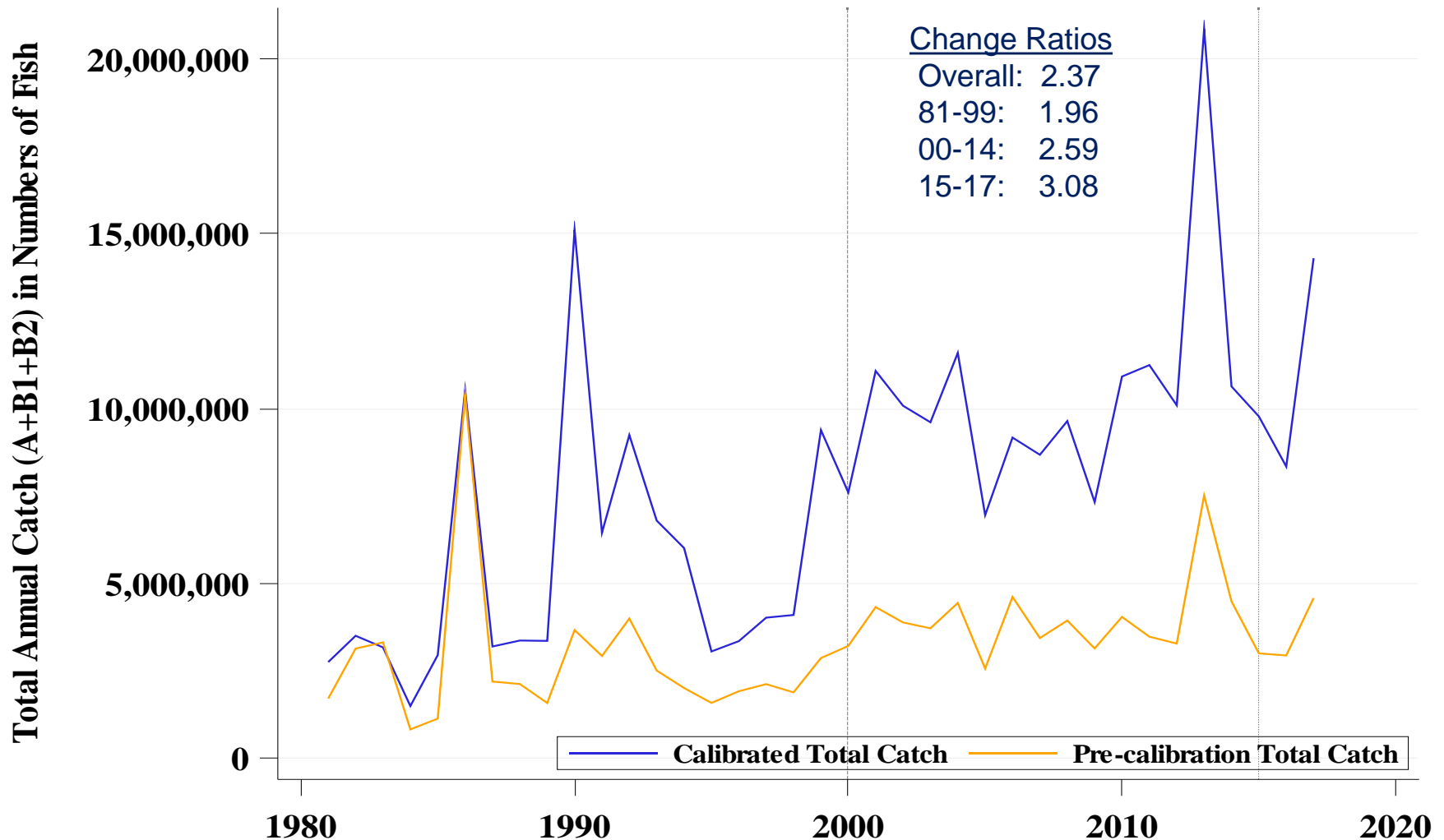
Greater Amberjack Total Catch



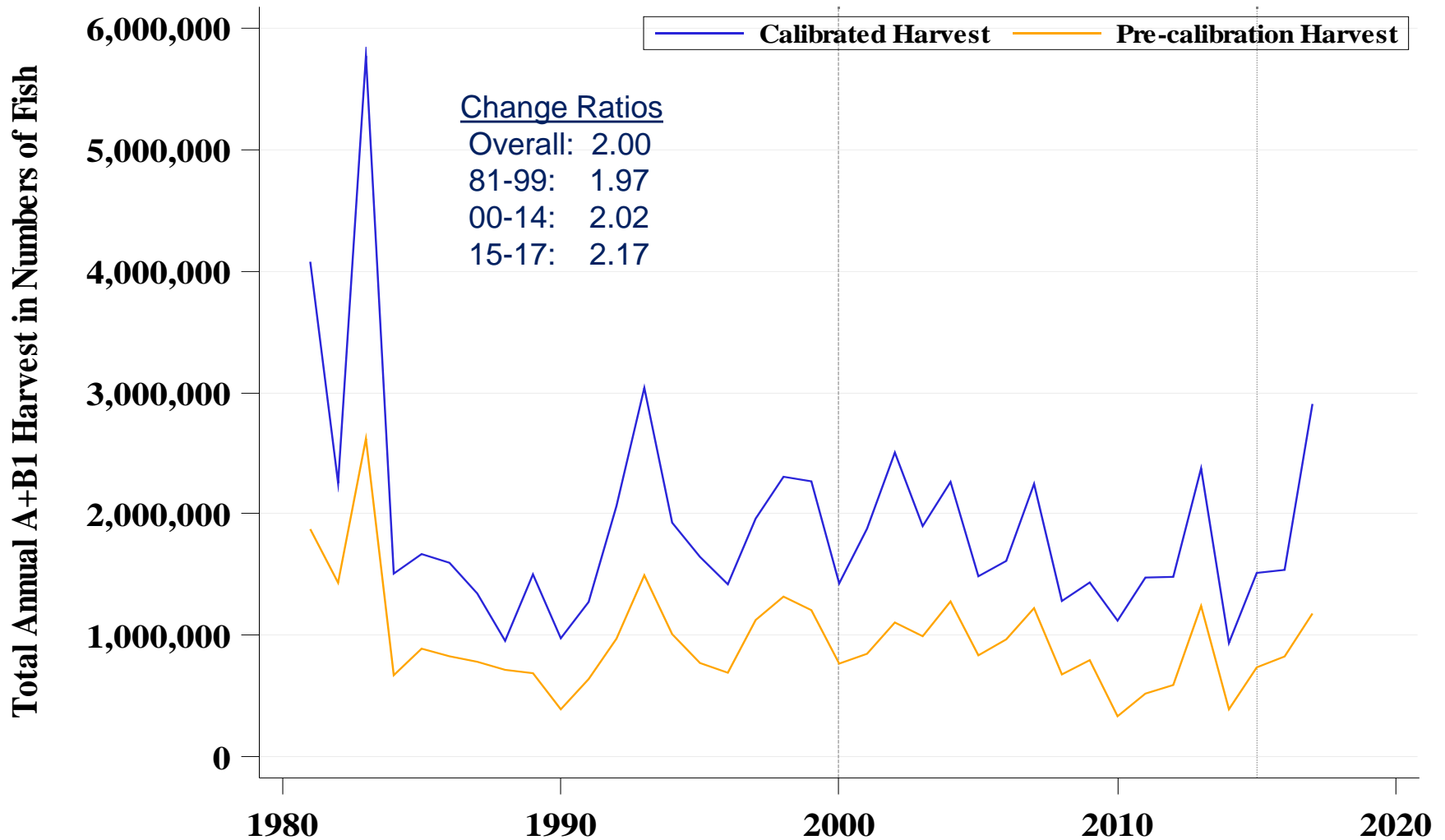
Spanish Mackerel Harvest



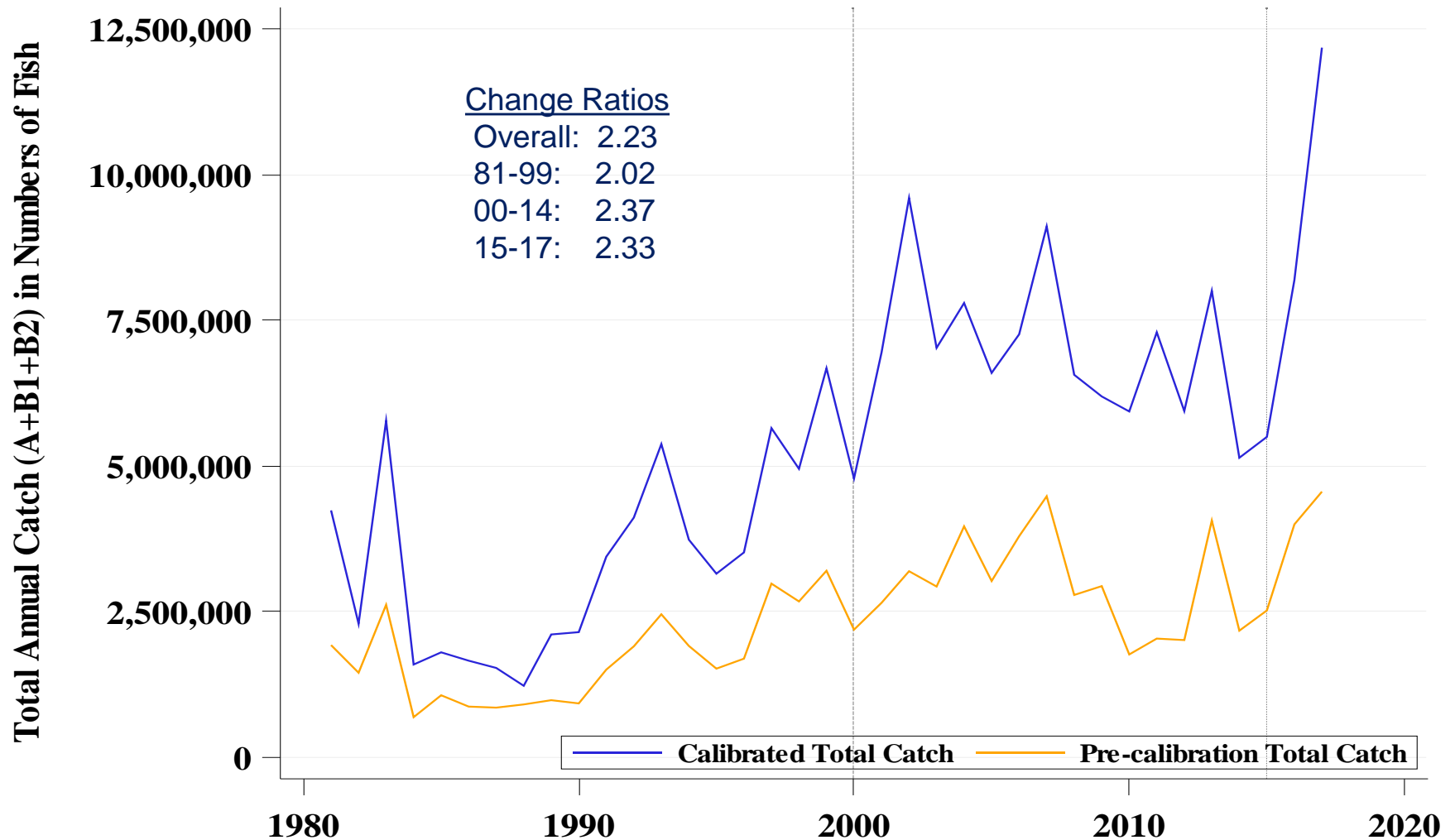
Spanish Mackerel Total Catch



Red Snapper Harvest



Red Snapper Total Catch



Impacts on Recreational Fishing



Stock Assessment Schedule

Species	Region	Type	Timing
Striped Bass	Atlantic Coast	Benchmark	Fall 2018
Summer Flounder	Mid-Atlantic Coast	Benchmark	Fall 2018
Red Snapper	Gulf of Mexico	Data Update	Fall 2018
Black Sea Bass	Mid-Atlantic Coast	Operational	Early 2019
Bluefish	Atlantic Coast	Operational	Early 2019
Scup	Atlantic Coast	Operational	Early 2019
Spot	Atlantic Coast	Operational	Early 2019
Red Porgy	Southern Atlantic Coast	Full Update	May 2019
Greater Amberjack	Southern Atlantic Coast	Full Update	May 2019
Red Grouper	Gulf of Mexico	Full Update	July 2019
Gray Triggerfish	Gulf of Mexico	Full Update	Aug. 2019
Atlantic Cod	Gulf of Maine	Operational	Fall 2019
Yellowtail Snapper	Southern Atlantic Coast/Gulf of Mexico	Benchmark	Nov. 2019
Red Snapper	South Atlantic	Full Update	2020

Key Takeaways

- We see a substantial increase in effort, especially in the shore mode.
- Those stocks that have high proportion of catch from shore are more heavily impacted.
- The changes in effort are generally larger in more recent years, mostly driven by the “wireless” effect.
- 2018 catch will be back-calibrated to ensure ACLs and catch are in the same “currency.”
- Stock assessments incorporating this new data will be used to determine stock status and ACLs.



What's Next

2018

- Revised total catch estimates now available for use in planned stock assessments.
- 2018 ACLs and catch estimates will be in the **same “currency.”**

2019

- Preliminary management changes may be made for re-assessed stocks.
- Calibrated statistics incorporated into additional stock assessments.

2020

- Based on new stock assessments, management changes could occur for a number of species.

Upcoming Presentations



October 4

- South Atlantic Fishery Management Council



October 15-18

- Gulf States Marine Fisheries Commission



October 24

- Gulf of Mexico Fishery Management Council





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Questions?

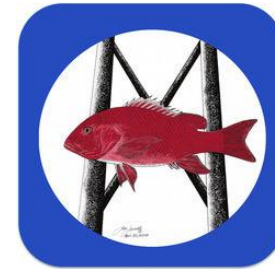


NOAA FISHERIES

State Surveys



LA Creel



MS Tails n' Scales

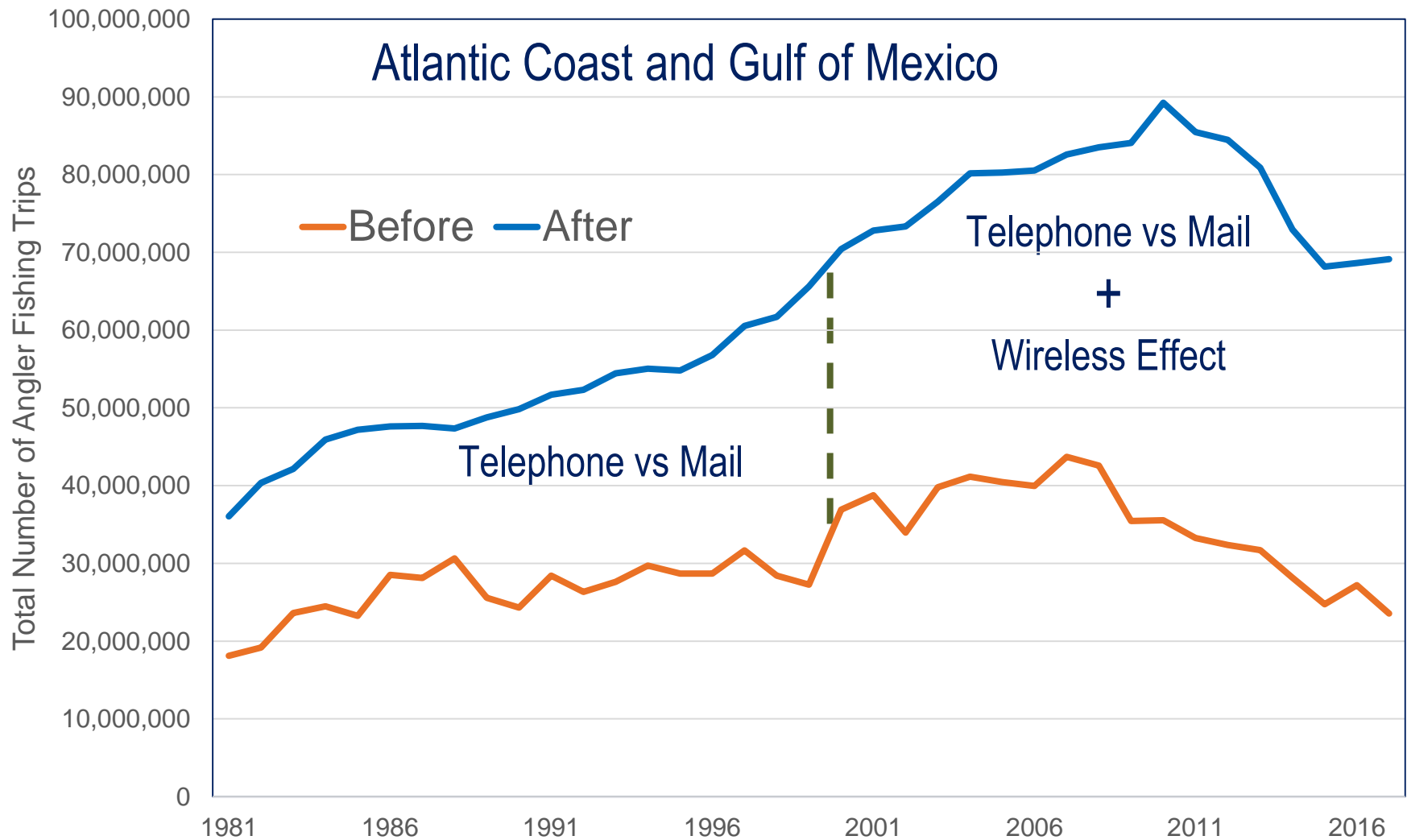


AL Snapper Check



FL Gulf Reef Fish Survey

Private Boat Effort



Shore Effort

