

MS CREEL OVERVIEW

Finfish Bureau
Office of Marine Fisheries
Mississippi Department of Marine Resources

ENHANCE ★ PROTECT ★ CONSERVE



MS CREEL OVERVIEW

- Background Information
- Methodology
 - Program Structure
 - Effort Survey
 - Dockside Survey
 - Model Functioning
 - Landings Estimates
- Results
 - Effort
 - Catch Rates
 - Landings Estimates
- Summary
- Comparing MS Creel to FES and CHTS



BACKGROUND INFORMATION

Recreational fisheries require survey-based reporting methods.

- Interview/interact with small, representative proportion of the population
- Scale the observations to the entire fleet

Federal survey programs began in the 1980s.

- MRFSS, MRIP
- NOAA OST conducts effort portion (CHTS, FES)
- States conduct dockside portion (APAIS)

Mississippi Creel established as a state-specific survey program to replace federal surveys.

- Directly adapted methodology from LA Creel; developed alongside AL Creel
 - LA Creel became NOAA Fisheries certified in 2017
 - Provided statistical framework by MS Creel was built
- Effort sampling began in 2024
- Dockside sampling began in 2025
- Entire program is developed and operated in-house



METHODOLOGY: PROGRAM STRUCTURE

$$\text{FISHING EFFORT} \times \text{DOCKSIDE CATCH} = \text{ESTIMATED LANDINGS}$$

Fishing Effort
Effort Survey

Dockside Catch
Dockside Survey

Stratified Angler Trips

Week × Region × Mode × Basin × Day Type

Stratified Catch

Week × Species × Mode × Basin × Disposition

Weekly Effort Estimates (angler trips)
By Mode × Basin



Weekly Catch Rates (fish per angler)
By Species × Disposition × Mode × Basin

Weekly Landings Estimates (number of fish)
By Species × Disposition × Mode × Basin

METHODOLOGY: PROGRAM STRUCTURE

Strata

Region (4):

- Coastal / Noncoastal / Out-of-State / ROLP

Mode (3):

- Shore / Private Vessel / Charter For-Hire

Basin (5):

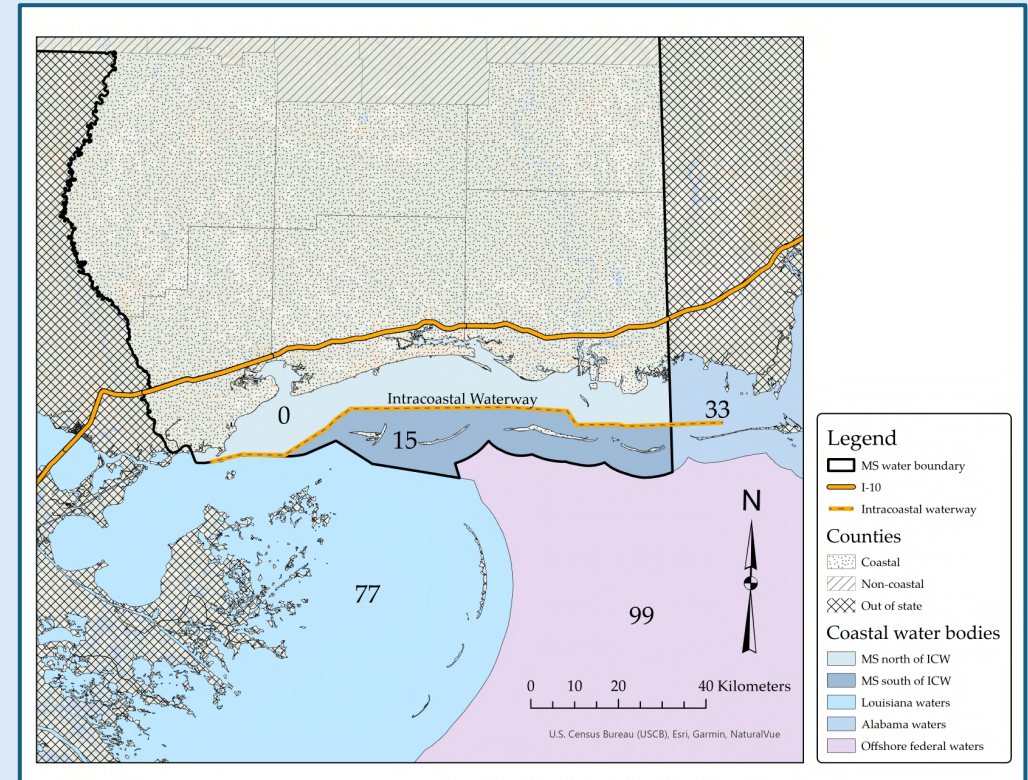
- MS Inshore Waters / MS Barrier Islands / Alabama / Louisiana / Federal Waters

Day Type (2):

- Weekday / Weekend

Disposition (5):

- Observed Harvest / Reported Harvest / Undersize Discard / Legal Discard / Bait



METHODOLOGY: EFFORT SURVEY

Delivery:

- Phone-based (email and text options)

Frequency:

- Weekly

Population Pool:

- MS Saltwater Recreational Fishing License Holders

Regional Strata (Sample Size):

- Coastal MS Residents (200)
- Noncoastal MS Residents (200)
- Out-of-State Residents (200)
- ROLP Holders (200 – 300)

Sample Period:

- Monday through Sunday each week

Survey Period:

- 1st contact made the following Monday via email and text
- Calls conducted Tuesday – Friday, 9am – 5pm
- Quota of 400 complete surveys

Fishing Effort Effort Survey



Stratified Angler Trips

Week × Region × Mode × Basin × Day Type



Weekly Effort Estimates (angler trips)

By Mode × Basin



METHODOLOGY: EFFORT SURVEY

MS Recreational Saltwater Licenses

- Annual or short-term
- Resident or Non-resident
- Lifetime Sportsman License
- 65+ Lifetime Saltwater License

Recreational Offshore Landing Permit

- ROLP
- Required for landing Cobia, Red Snapper, and other Reef Fish in MS
- Established 2024
- Expires annually December 31st
- Separate from other licenses to prevent oversubscription

Fishing Effort Effort Survey



Stratified Angler Trips *Week × Region × Mode × Basin × Day Type*



Weekly Effort Estimates (angler trips) *By Mode × Basin*



METHODOLOGY: EFFORT SURVEY – ANGLER DATA

[MDMR.MSCREEL.Call.Center](#)

eric.gigli@dmr.ms.gov

Training Activities

Eric Gigli

#2508 | ROLP / ROLP

Status: New | Agent Status: New

Call Status: | Attempts: 0

Last Attempted on : null

2286971587

2283251585

2283251717

Incorrect Contact

Not in Service

Non Survey

Reset status

Comments/Notes:

View Audit Trail

View Call Log

Reload Survey

Show Stats

Load Previous

Exit Call Center

Load next

☒ Keep Loading

No Answer

Not Available

Numbers Exhausted

Survey Refused

Agent, When a call is connected. Start with the script below:

GOOGLE ASSISTANT PROMPT: Mississippi Department of Marine Resources, Angler Information

Hi I am trying to reach Eric.

Hey, I work for the Mississippi Department of Marine Resources to collect fishing information from our licensed anglers.

Survey Questions

Did you go saltwater fishing in Mississippi last week from (Monday, January 19, 2026 through Sunday, January 25, 2026) *

☐ Yes, I did fish

☐ No, I did not fish





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METHODOLOGY: EFFORT SURVEY – ANGLER DATA

^ Saturday, January 24, 2026

Which of the following describes your fishing activity? *

- ☒ Private Boat
- ☐ Charter Boat
- ☐ Shore

Which area did you primarily fish? *

- ☐ MS Inshore Waters - Bays Bayous, Rivers, and the Mississippi Sound North of Inter-coastal Waterway
- ☒ Barrier Islands - State waters, South Intercoastal Waterway but North of line formed 3 miles South of Mississippi Barrier Islands
- ☐ Alabama Waters - East of MS state-line, Grand Bay or near Dauphin Island
- ☐ Louisiana Waters - West and South of MS state-line, Biloxi Marsh, Chandeleur Islands, Freemason, Breton Sound, Lake Borgne
- ☐ Offshore - More than 3nm South of Barrier Islands

About what time did your fishing trip end? *

05:55 PM ⌚

(Please indicate a time and include AM/PM EX: 12 Noon/12PM)

Did you come back to a site that is open to the general public? (Dock, Ramp, Camp, Shore)

- ☒ Public
- ☐ Private



METHODOLOGY: DOCKSIDE SURVEY

Frequency:

- 9 per week (14 for Red Snapper season)

Mode:

- 1 SH / 1 CH / 7 PRV (12 for RS season)

Day Type:

- 3 Weekday / 6 Weekend (5 / 9 for RS season)
 - Monday – Thursday / Friday – Sunday

Shift Times:

- AM: 0800 – 1400 / PM: 1400 – sunset
 - Randomly configured

Intercept Length:

- Streamlined – one angler per group (~3 min.)

Site Selection:

- Probability-proportional-to-size sampling with replacement
- Site-specific pressure values dependent on season, day type, and mode
 - Developed with trailer counts, local staff knowledge, historical trip data

Dockside Catch
Dockside Survey



Stratified Catch
Week × Species × Mode × Basin × Disposition



Weekly Catch Rates (fish per angler)
By Species × Disposition × Mode × Basin



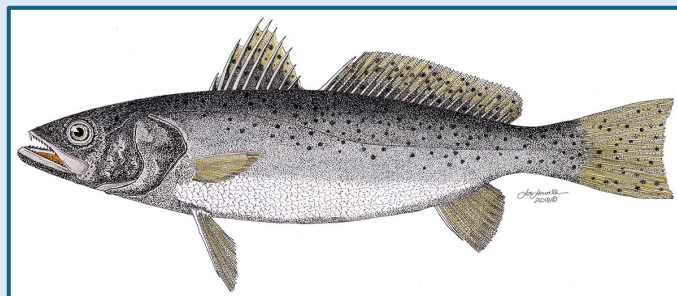
METHODOLOGY: DOCKSIDE SURVEY – SUMMARY DATA

	Total
Complete Private Vessel Interviews:	
Complete Shore Group Interviews:	
Complete Charter For-Hire Interviews:	
Private Vessel Not Done Fishing Groups:	
Shore Mode Not Done Fishing Groups:	
Refusals/Unable to Complete Survey:	
Missed Groups/Drive Offs:	
Freshwater Groups:	
Commercial Groups:	
Non-Fishing Groups:	
Single Axle Trailers at Start:	
Double Axle Trailers at Start:	
Triple Axle Trailers at Start:	
Single Axle Trailers at End:	
Double Axle Trailers at End:	
Triple Axle Trailers at End:	

METHODOLOGY: DOCKSIDE SURVEY – INTERCEPT DATA

CONTROL #: _____ MS Creel Assignment Intercepts Page #: _____

Survey Trip #: 01	Time of Survey (0000-2400): 1330	Trip Activity: PRV SH / CFH
Fished in a Tournament: ☐	Incomplete: ☐	Res: MS Coastal 2 MS Non-Coastal _____ Out of State 2
# Anglers: 4	# Licenses: 4	# ROLPs: 2 CFH: _____
1° Area Fished: 1- MS Inshore (N. of ICW) / 2- MS Barrier Islands / 3- LA / 4- AL / 5- Federal (>3nm S. of BI)		
2° Area (Optional): 1- MS Inshore (N. of ICW) / 2- MS Barrier Islands / 3- LA / 4- AL / 5- Federal (>3nm S. of BI)		
1° Target Species: SST		2° Target Species:
Species Name	#	Code
SST	14	1
SF	2	1
BD	1	1
WT	3	1
Comments:		



METHODOLOGY: MODEL FUNCTIONING

Effort

Input Data:

- Effort Survey – trip counts by basin, region, day
- License Frame – weekly license counts by region

Strata:

- Week $\times$ Region $\times$ Mode $\times$ Basin $\times$ Day Type

Weighting:

- Regional License Total / Statewide License Total

Expansion:

- Horvitz-Thompson-style expansion from sampled trips to total population trips

Output:

- Total angler trips per week $\times$ basin $\times$ mode
 - Variance summed across regions

```
library(survey)
svydesign | svyby | svyratio
R equivalent to PROC SURVEYMEANS in SAS
```

Catch

Input Data:

- Dockside Survey – anglers, licenses, catch by species, disposition
- Pressure Table – probability that assignment was drawn

Weighting:

- $1 / (\text{site-selection probability} \times \text{day-type and shift probability} \times \text{completed-intercept rate})$
- Full inverse probability of that encounter being sampled

Domains:

- Three-way interaction of week $\times$ mode $\times$ basin
- Denominator – number of anglers

Output:

- Catch-per-angler rate
- License compliance rate

METHODOLOGY: LANDINGS ESTIMATES

Effort

Output:

- Total angler trips per week $\times$ basin $\times$ mode
 - Variance summed across regions

Catch

Output:

- Catch-per-angler rate
- License compliance rate

Landings

$$\text{Landings} = \text{Catch Rate} \times (\text{Effort} / \text{License Compliance})$$

Output:

- Adjusted weekly landings by species $\times$ disposition $\times$ mode $\times$ basin
- Variance – Goodman exact product-variance formula
 - Propagates effort and catch-rate uncertainty together

RESULTS: OVERVIEW

Time: 2025 – 2026 (up to week 28)

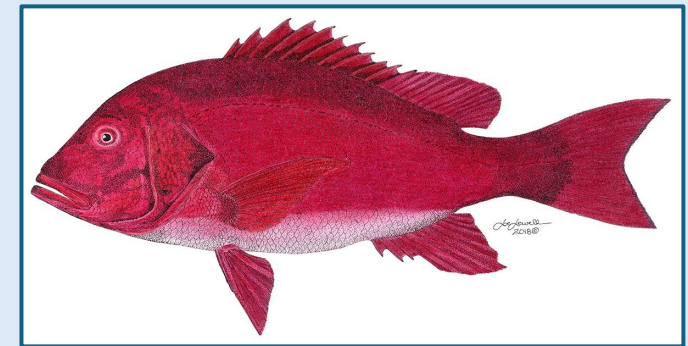
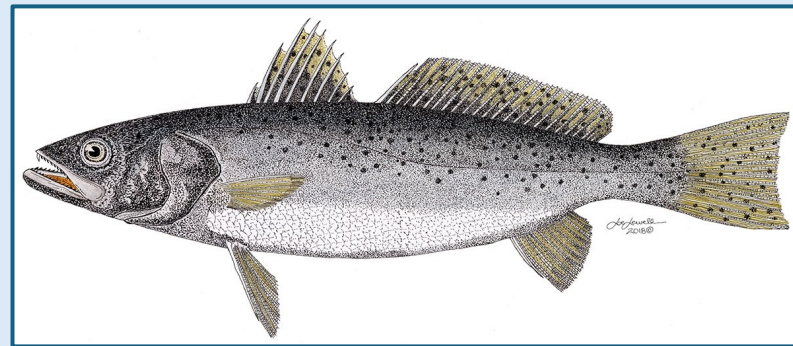
Mode: Private Vessel and Shore

Time Units: Week / Month

Species: Sheepshead / Spotted Seatrout / Red Snapper

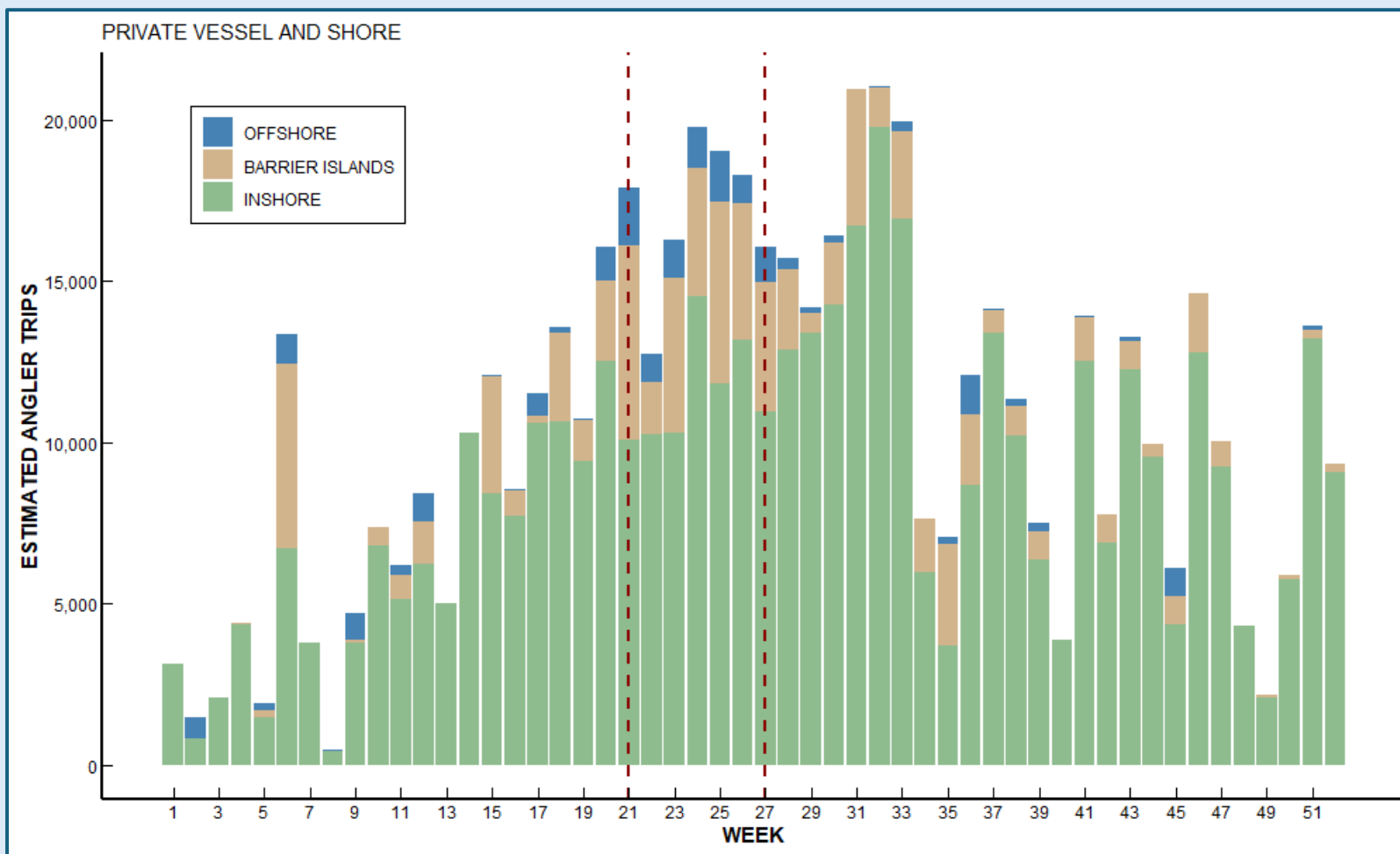
Effort: Number of Trips per Angler

Landings: Total Number of Observed and Reported Fish Harvested



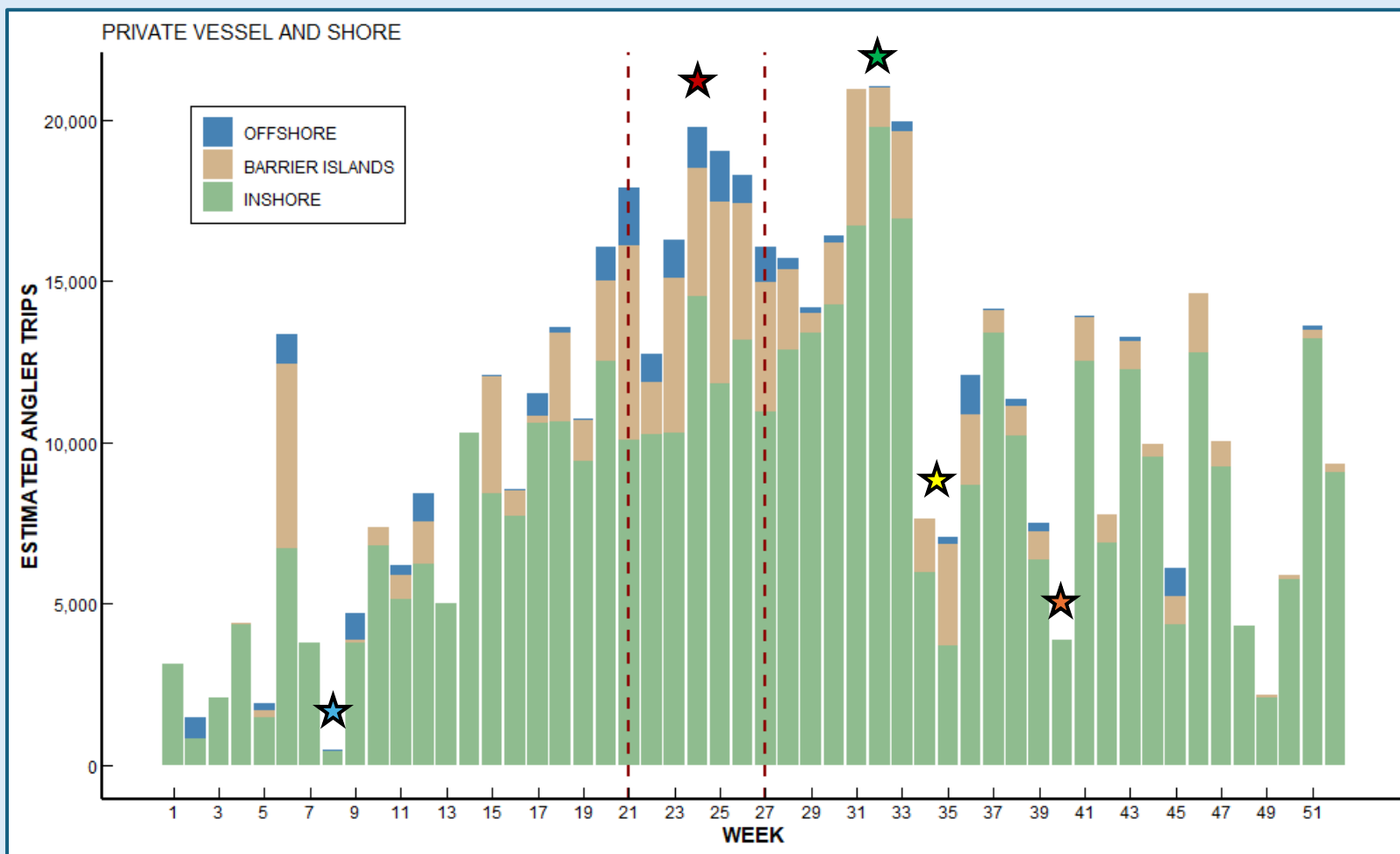
RESULTS: EFFORT – 2025

Estimated weekly **angler trips** by basin, 2025.



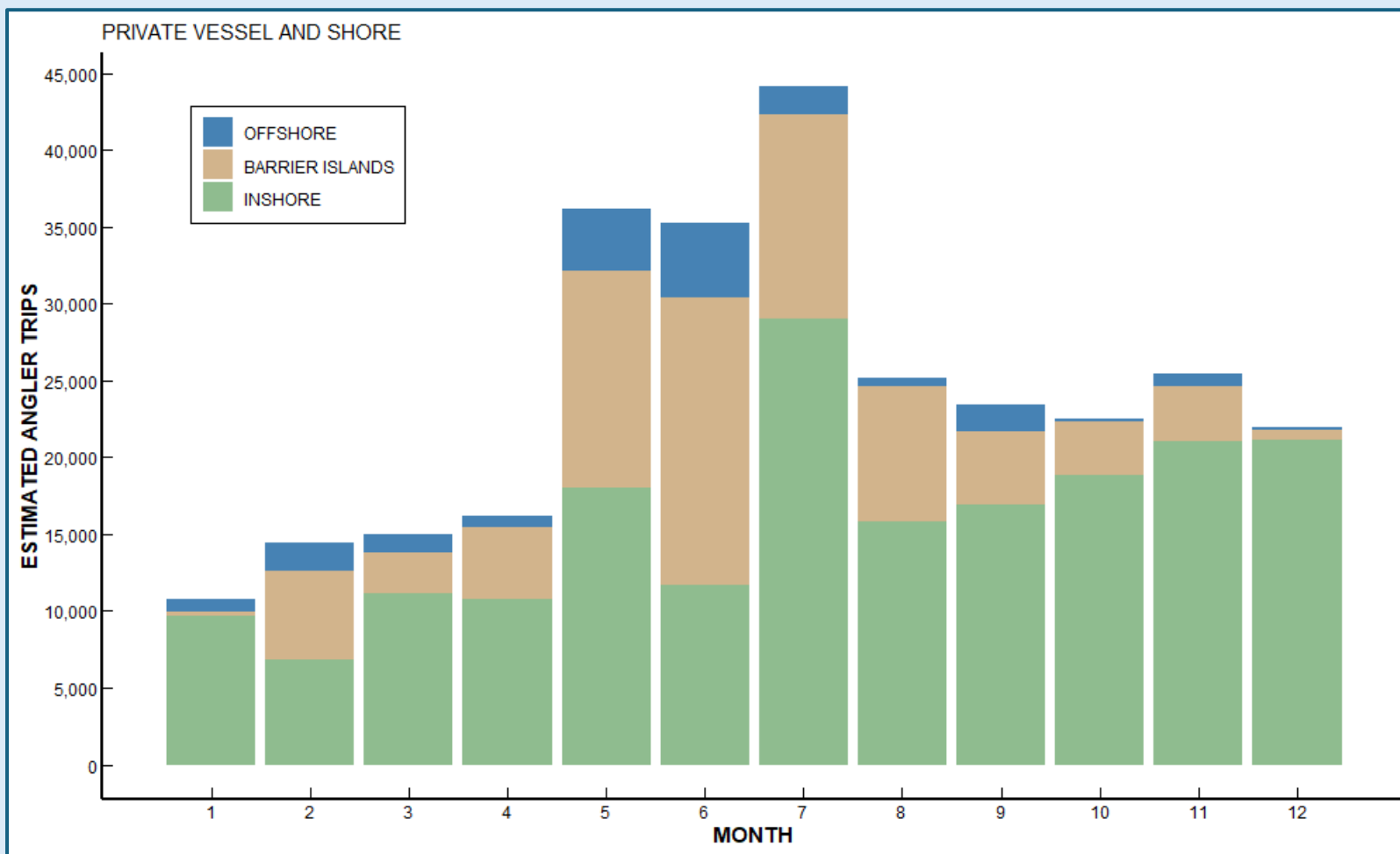
RESULTS: EFFORT – 2025

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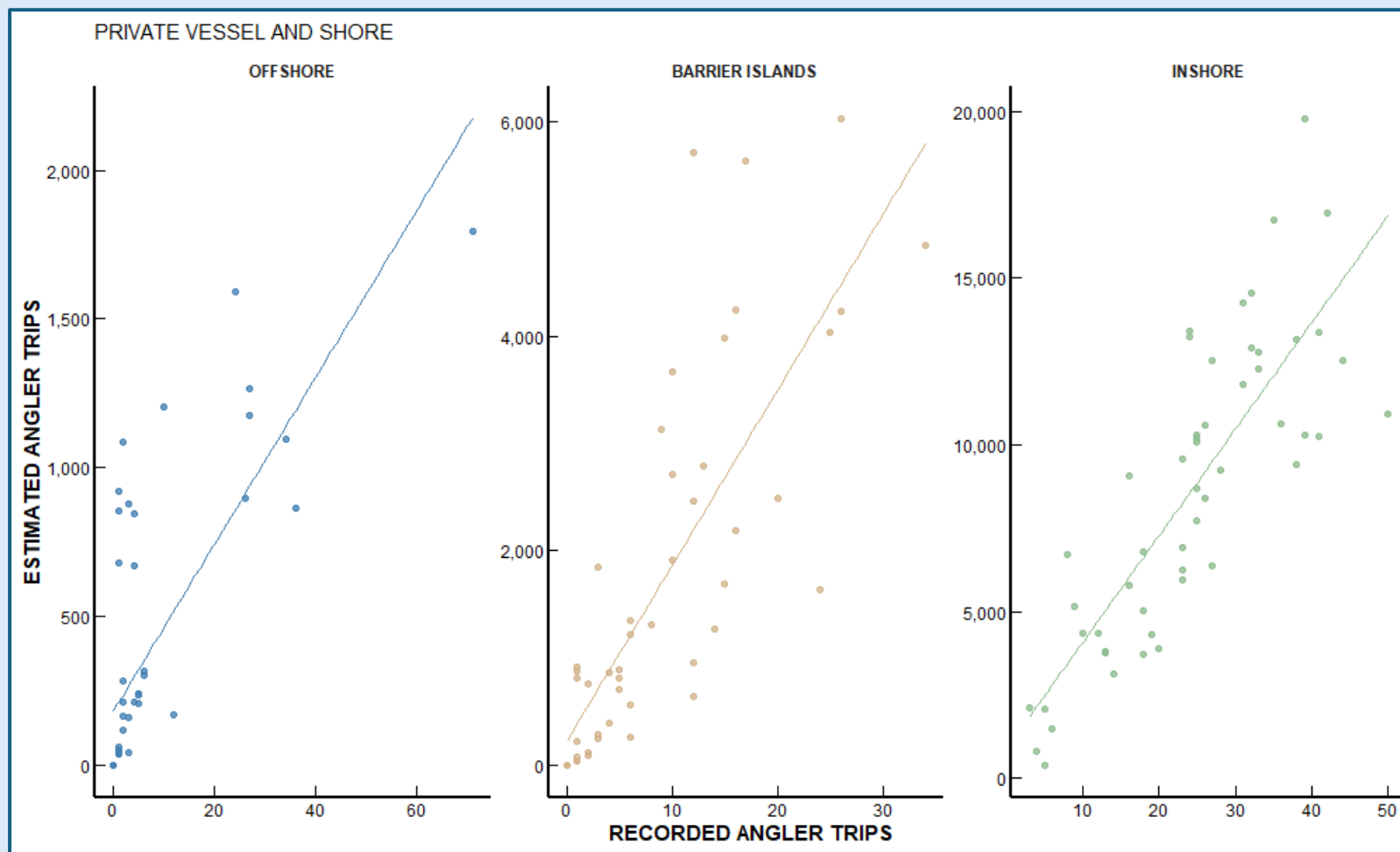
RESULTS: EFFORT – 2025

Estimated monthly **angler trips** by basin, 2025.



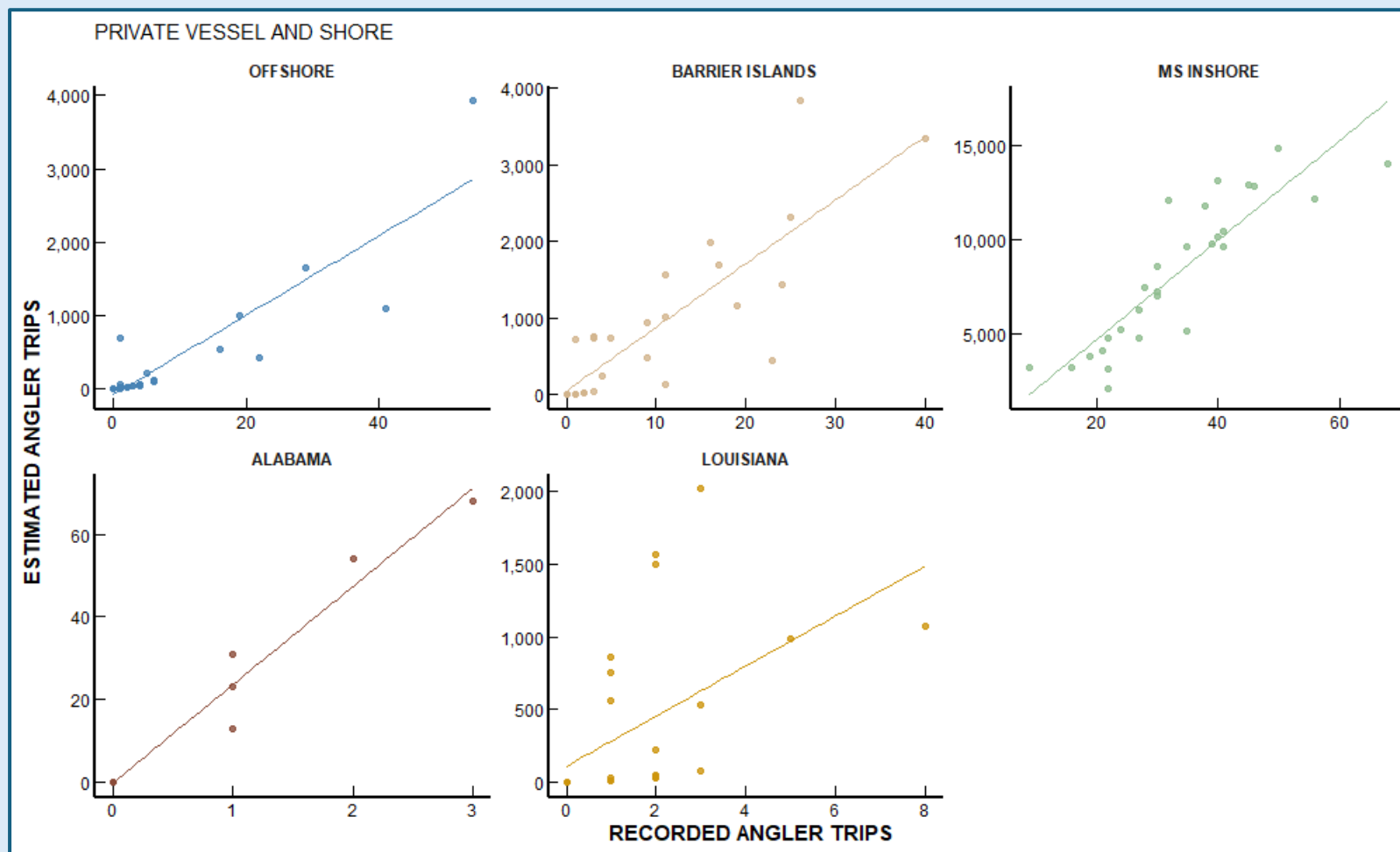
RESULTS: EFFORT – 2025

Comparison of weekly **recorded angler trips** against the **expanded effort estimates**, 2025.



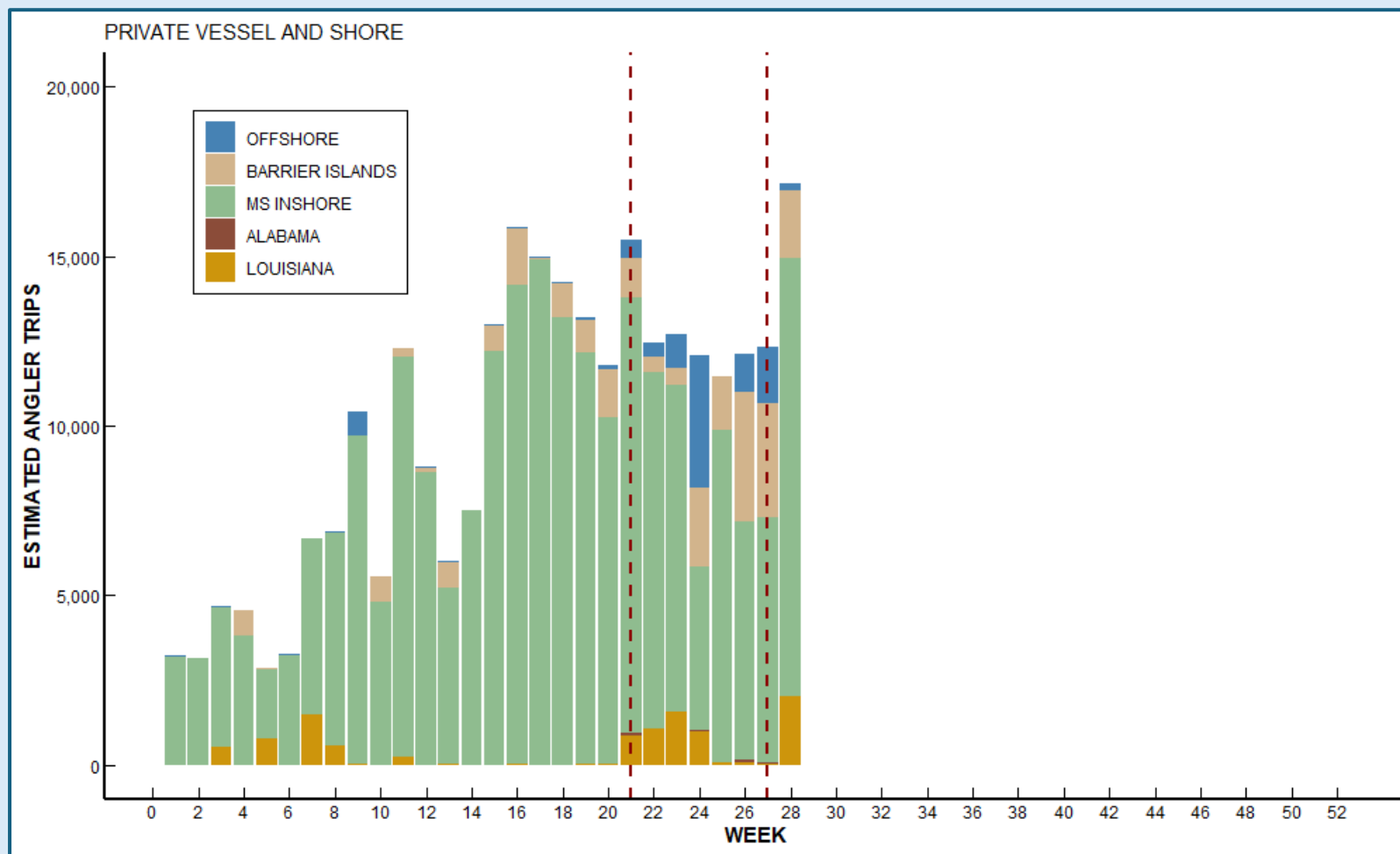
RESULTS: EFFORT – 2026

Comparison of weekly **recorded angler trips** against the **expanded effort estimates**, 2026.



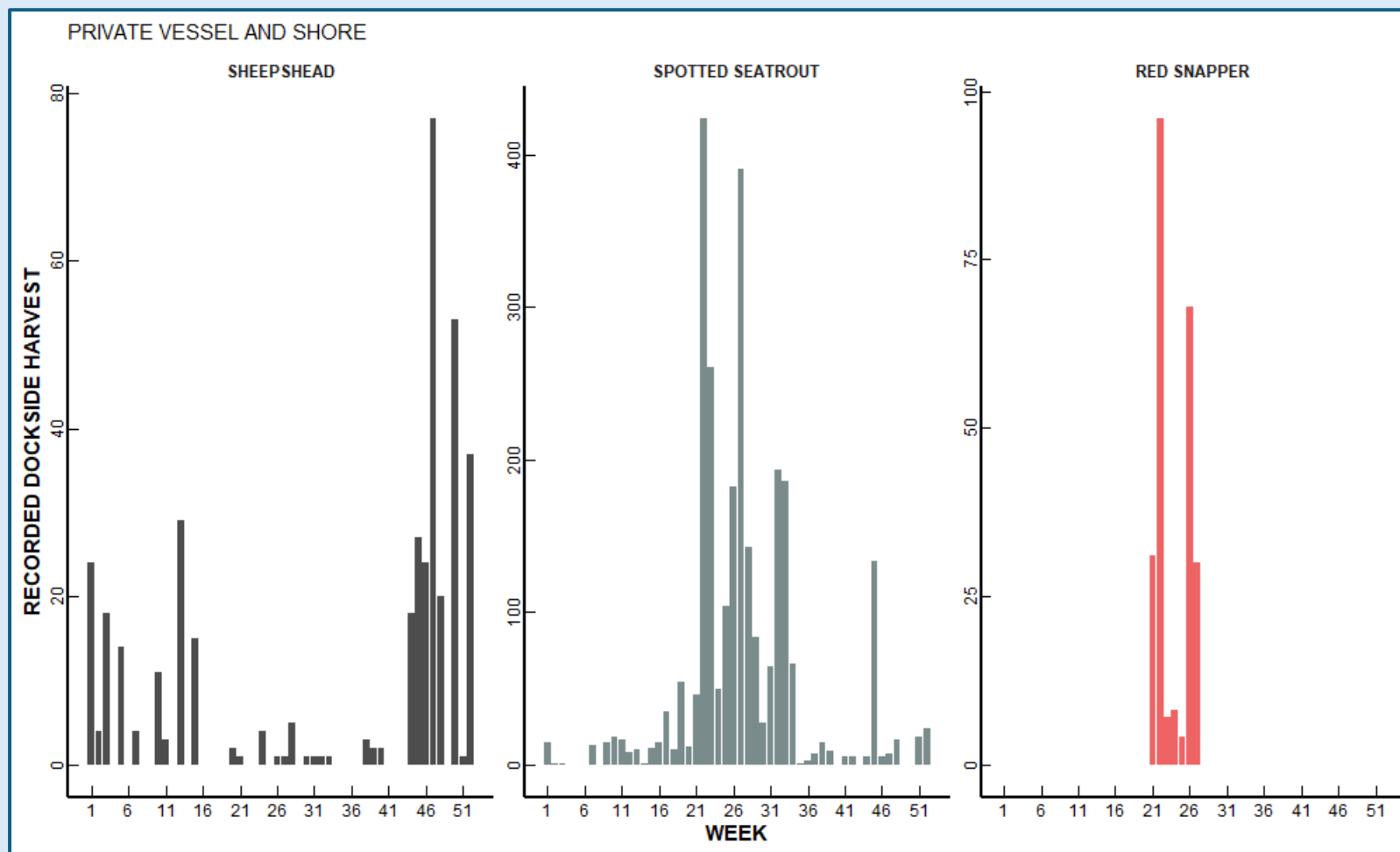
RESULTS: EFFORT – 2026

Estimated weekly **angler trips** by basin, 2026.



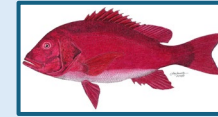
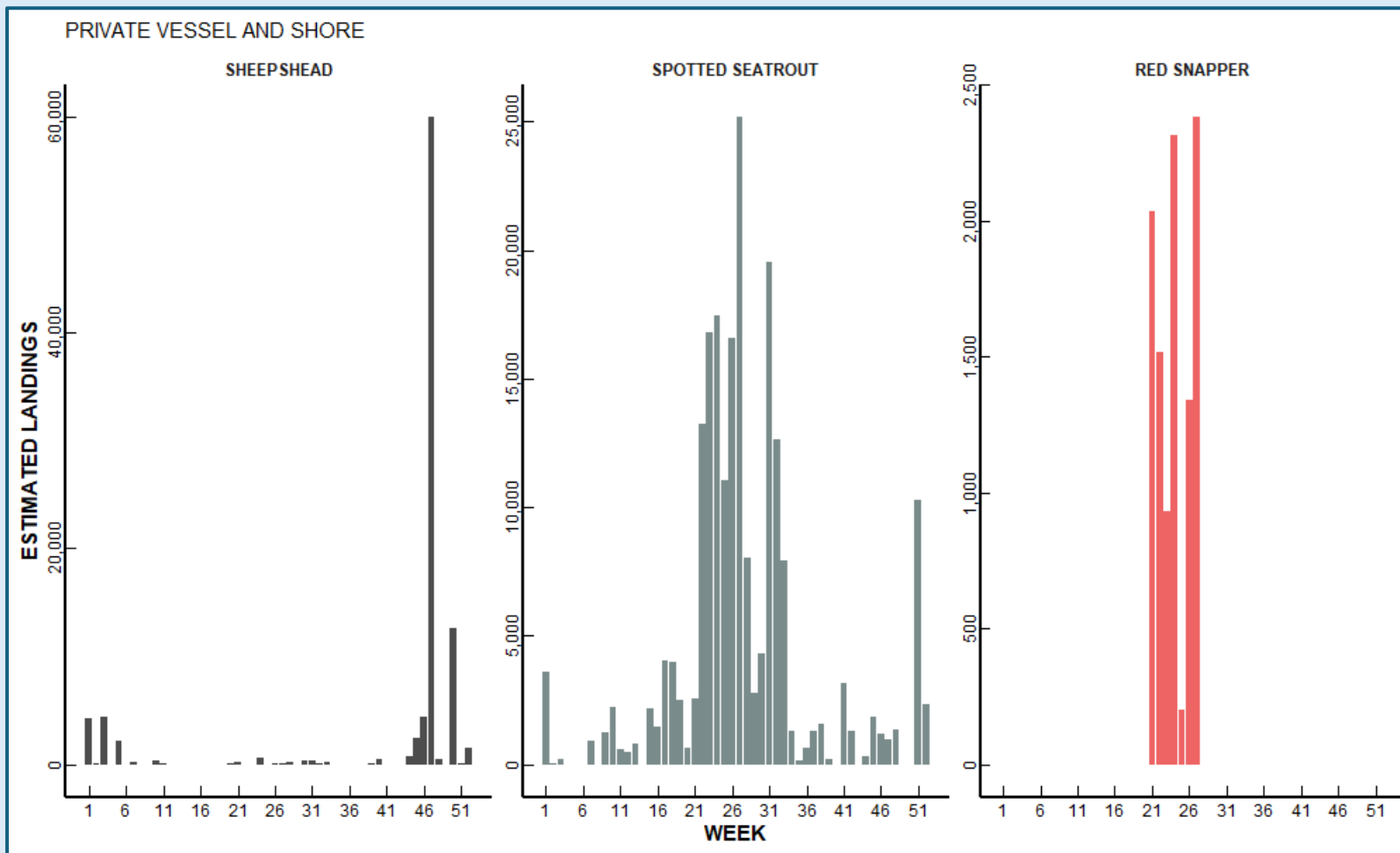
RESULTS: OBSERVED CATCH – 2025

Recorded weekly harvest (observed and reported) from dockside intercepts, 2025.



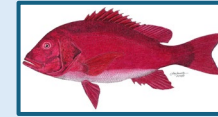
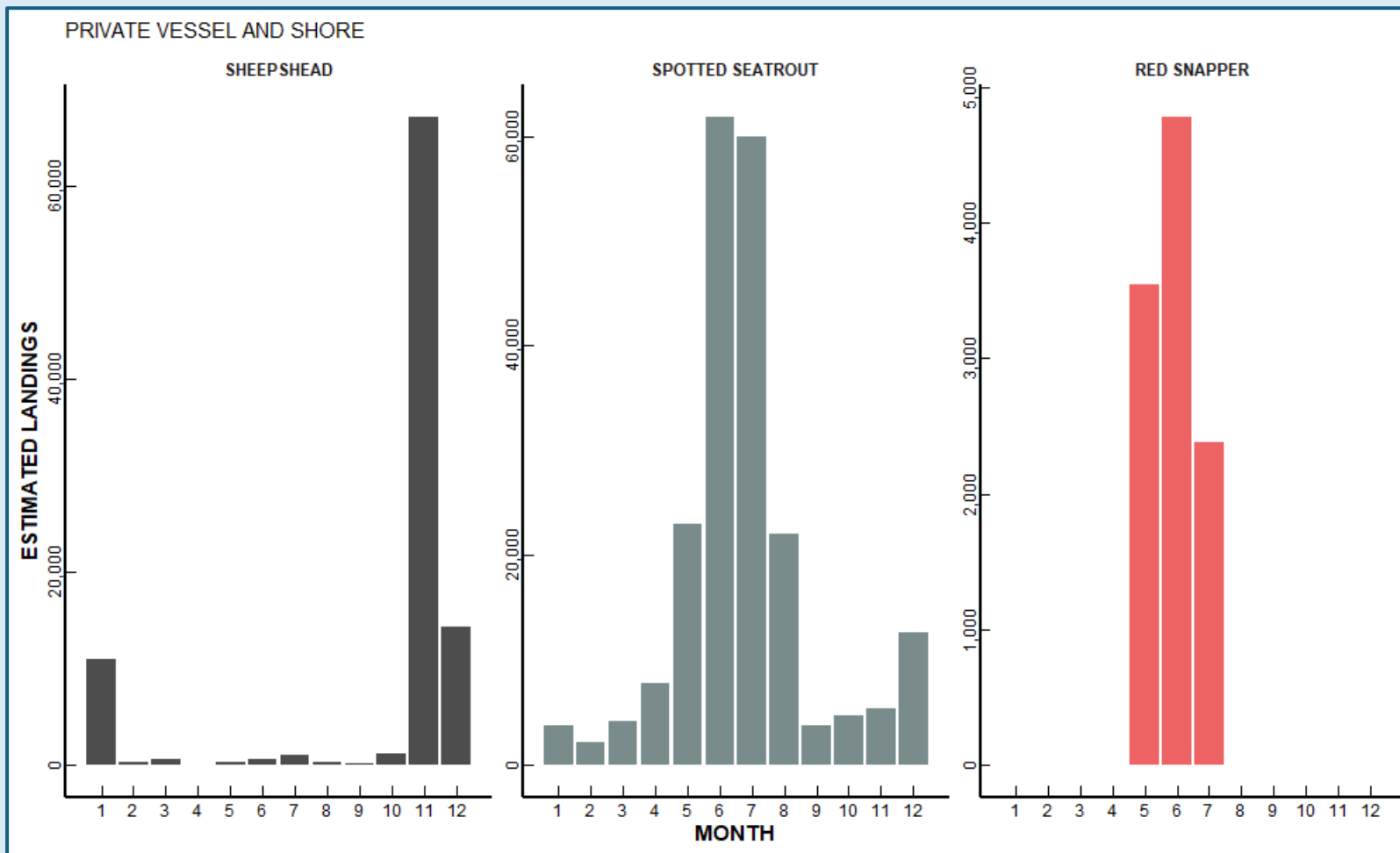
RESULTS: LANDINGS – 2025

Estimated weekly landings (# fish, Type A + B1), 2025.



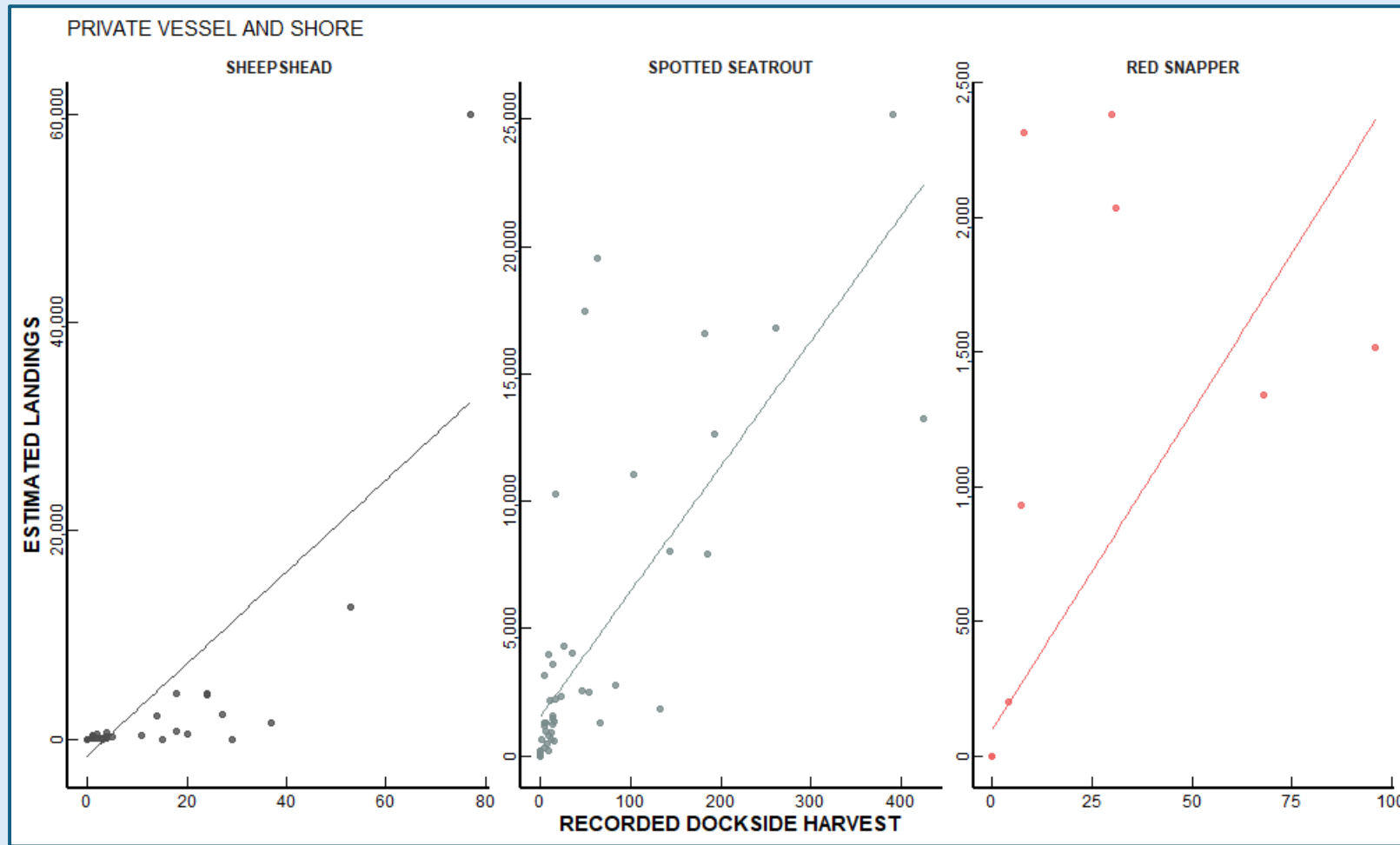
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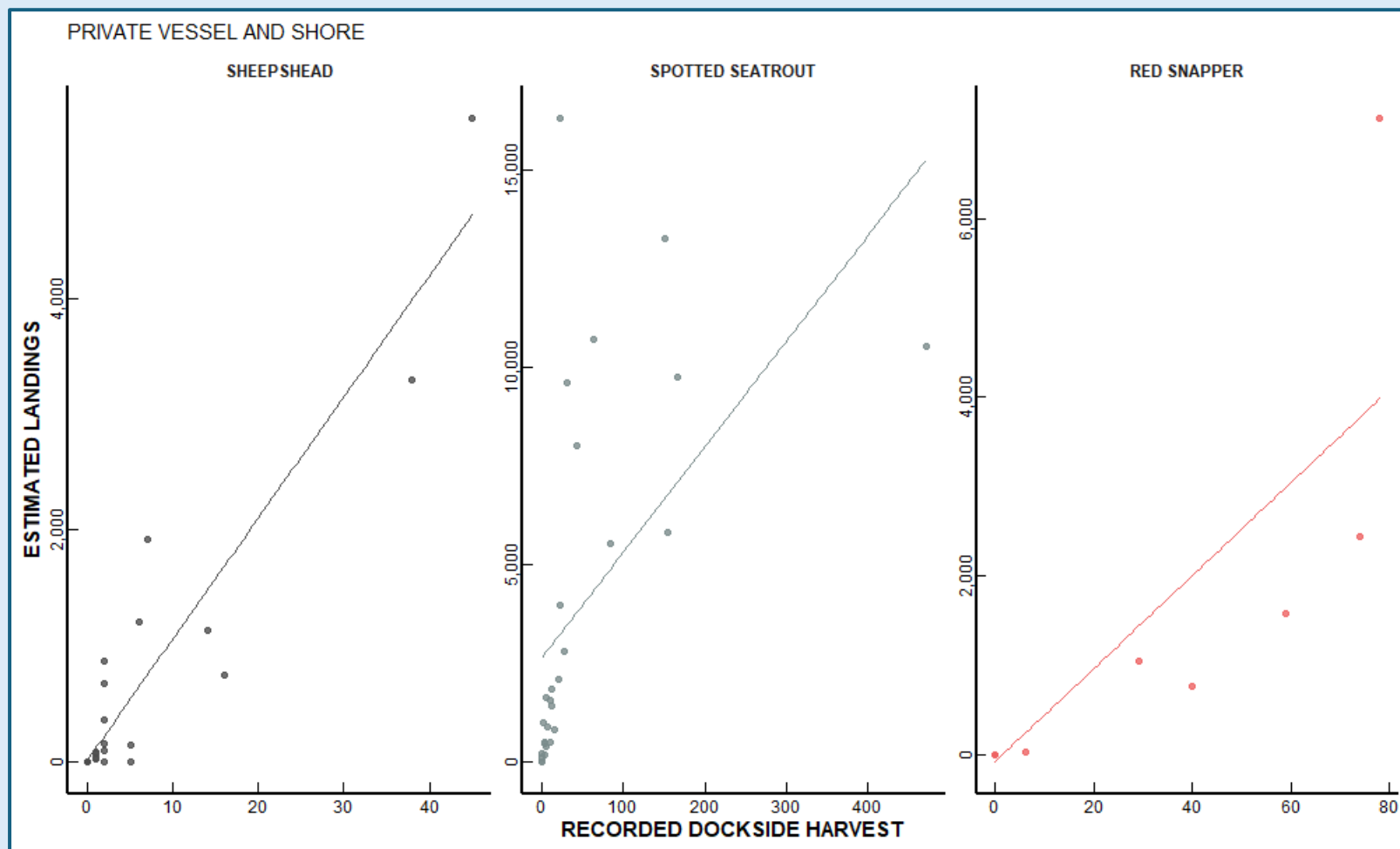
RESULTS: LANDINGS – 2025

Comparison of weekly **recorded dockside harvest** against the **expanded landings estimates**, 2025.



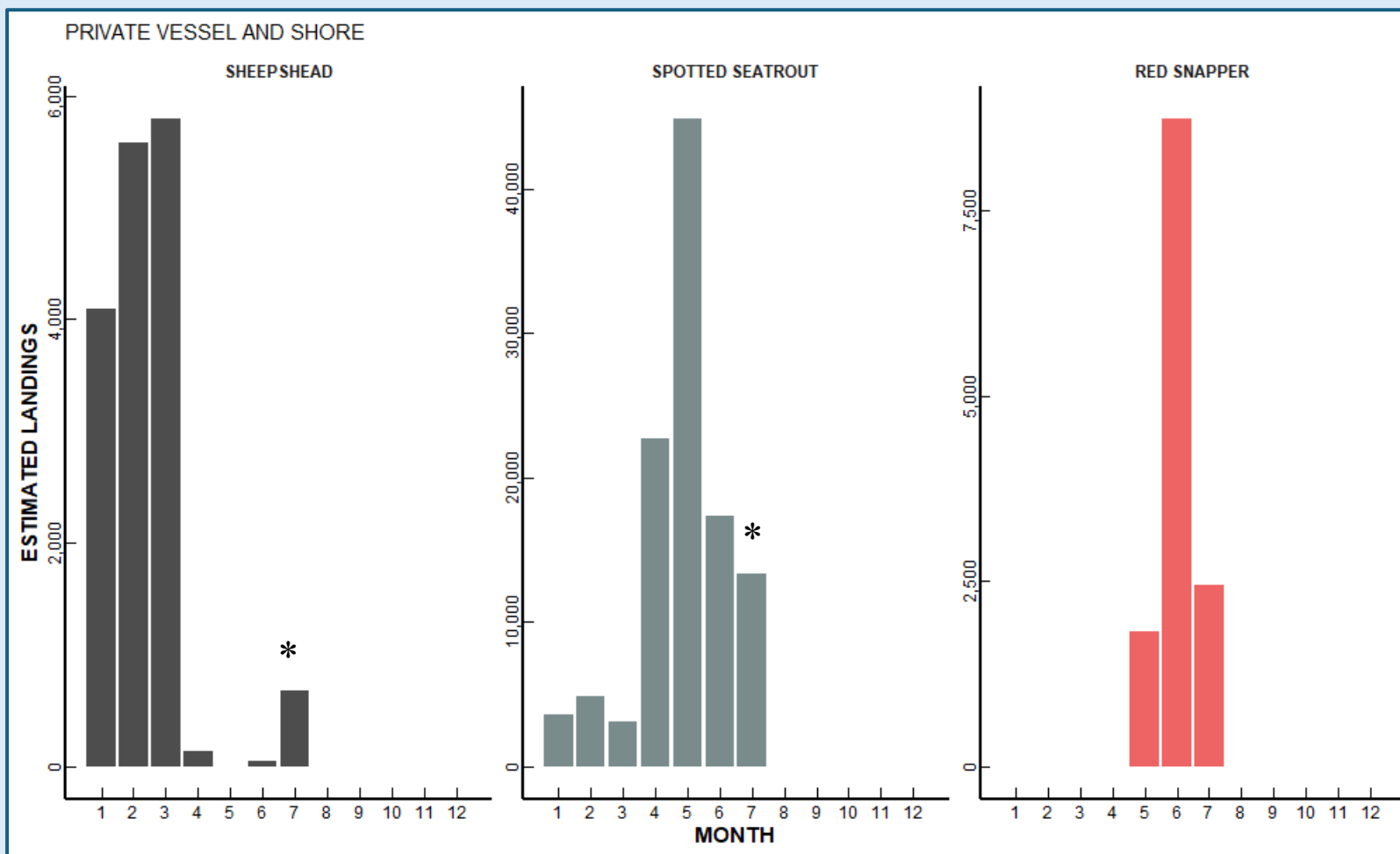
RESULTS: LANDINGS – 2026

Comparison of weekly **recorded dockside harvest** against the **expanded landings estimates**, 2026.



RESULTS: LANDINGS – 2026

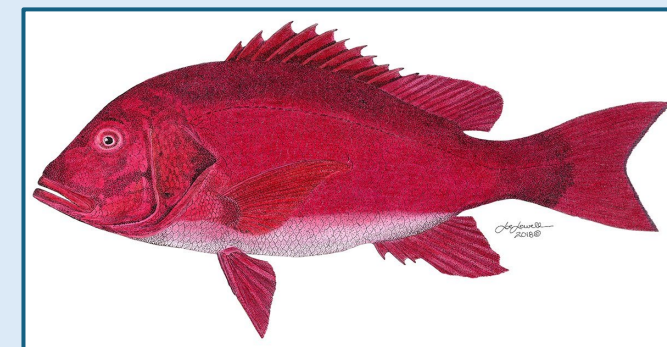
Estimated monthly landings (# fish, Type A + B1), 2026.



RESULTS: COMPARING LANDINGS – 2025

Comparing total estimated landings (# fish, Type A + B1) by program, 2025.

Species	MS Creel	FES (Pre 2026)	FES (Calibrated)
Sheepshead	96,416	259,846	149,059
Spotted Seatrout	210,801	1,402,659	948,535
Red Snapper	10,718	70,444	59,992



MS CREEL SUMMARY

Scientific Credibility:

- NOAA Fisheries certified MS Creel in April 2026, alongside AL Creel
 - Aligning with LA Creel (certified in 2017)

Stakeholder Benefit:

- Removes burden of mandatory Red Snapper reporting to Tails n' Scales
- Increased dockside efficiency

Agency Benefit:

- Produces effort and landings estimates that reflect actual fishing patterns and magnitude
 - Validated against known conditions (i.e., unfishable weather weeks, holiday weeks, etc.)
- Built and operated entirely in-house
 - Enables timely adjustments and flexible exploratory analysis

Regional Benefit:

- Regionally consistent recreational harvest estimates across Louisiana, Mississippi, and Alabama

Continued Improvement:

- Ongoing efficiency gains in data collection, estimation, and delivery



COMPARING MS CREEL TO CHTS AND FES PROGRAMS

**Finfish Bureau
Office of Marine Fisheries
Mississippi Department of Marine Resources**

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COMPARING PROGRAMS – FRAMEWORK

Overview

Mississippi has the lowest harvest of any state in the Gulf

- Lowest number of license holders
- Limited coastline and small coastal population

MS Creel

- Only operational survey conducted in Mississippi
- Will be used for in season management of Red Snapper in 2027
- Directly adapted from LA Creel methodology
- MRIP certification received April 2026

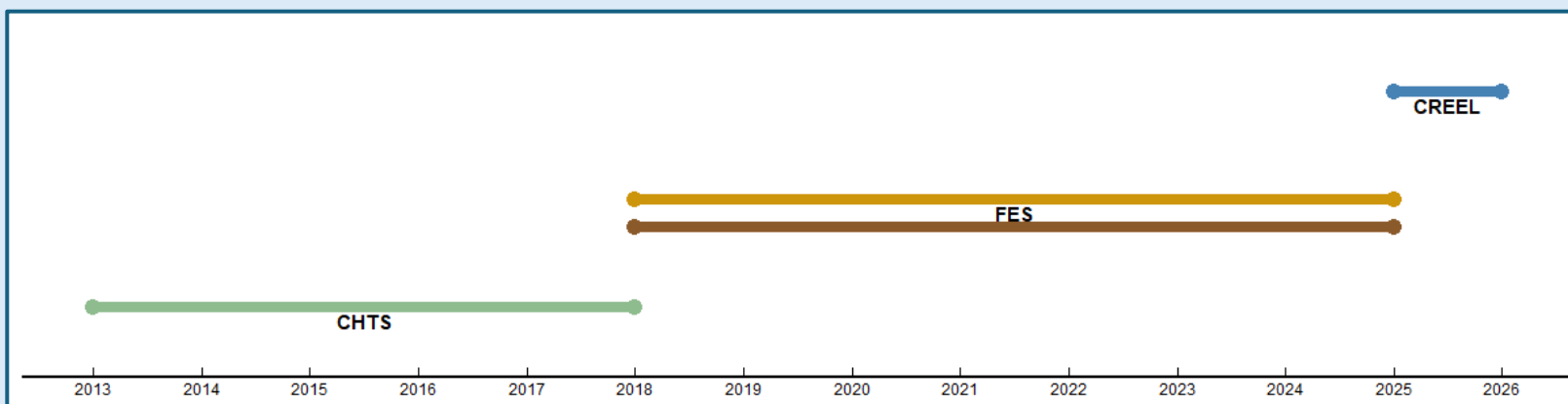
LA Creel

- LA Creel ran side by side with CHTS for one year
- Current calibration factor is 1.06 for Red Snapper management

Current ACL for Red Snapper is in CHTS units

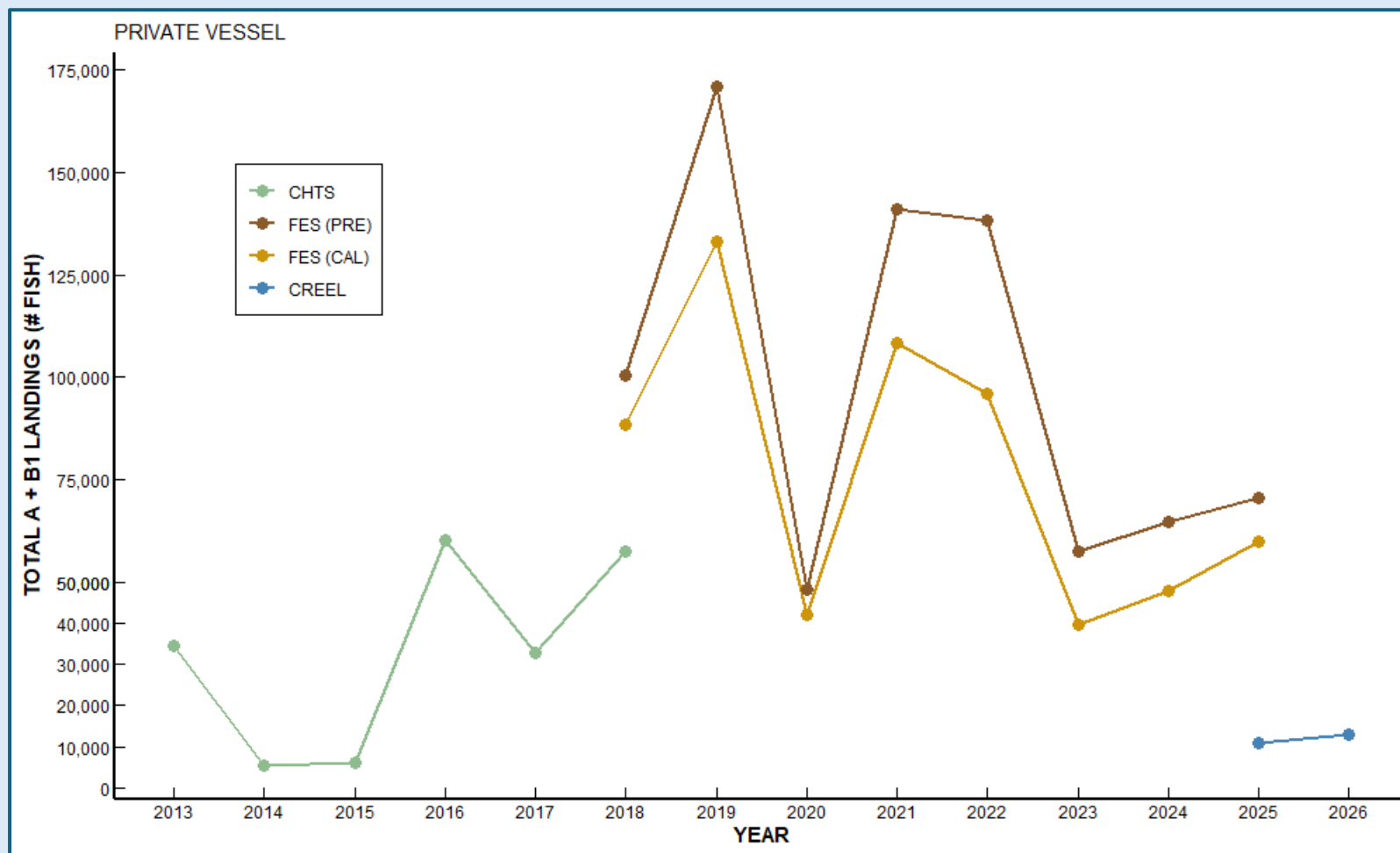
Objectives

1. Review estimate distribution across FES, CHTS, MS Creel
2. Propose pathway for Red Snapper management in Mississippi for 2027



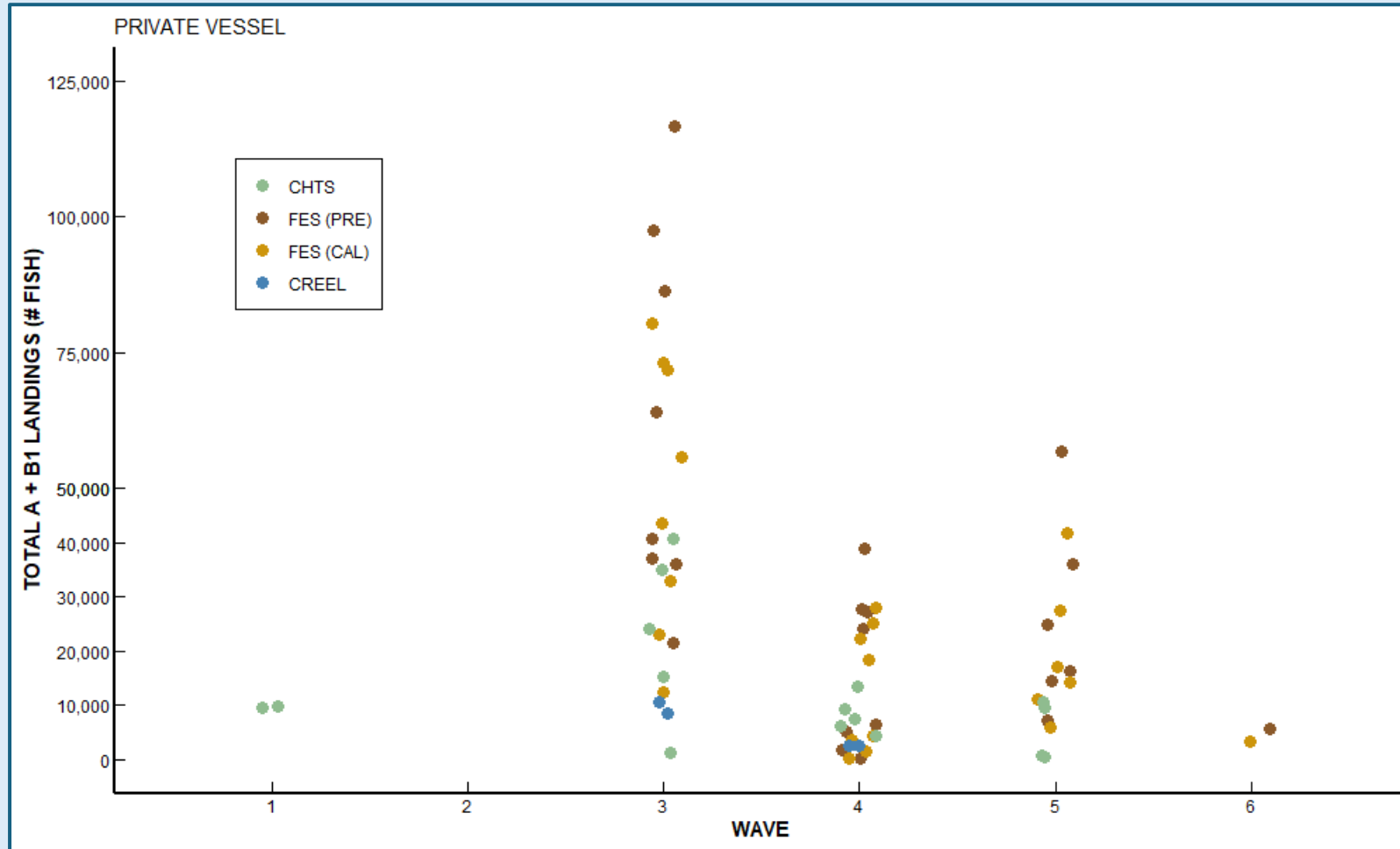
COMPARING PROGRAMS

Estimated annual landings (# fish, Type A + B1) for Red Snapper. Private vessel only.



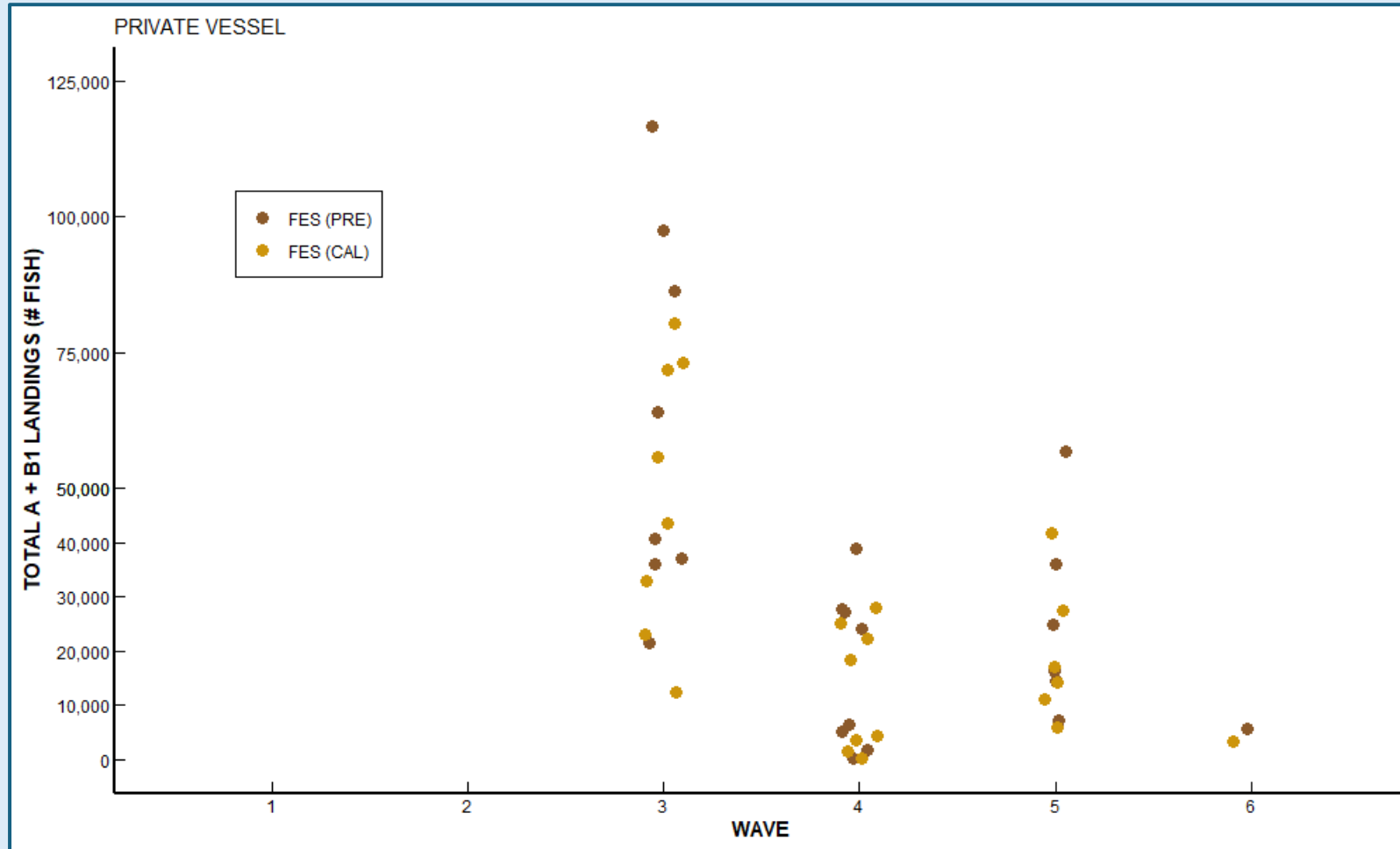
COMPARING PROGRAMS

Estimated landings (# fish, Type A + B1) for Red Snapper by wave. Private vessel only



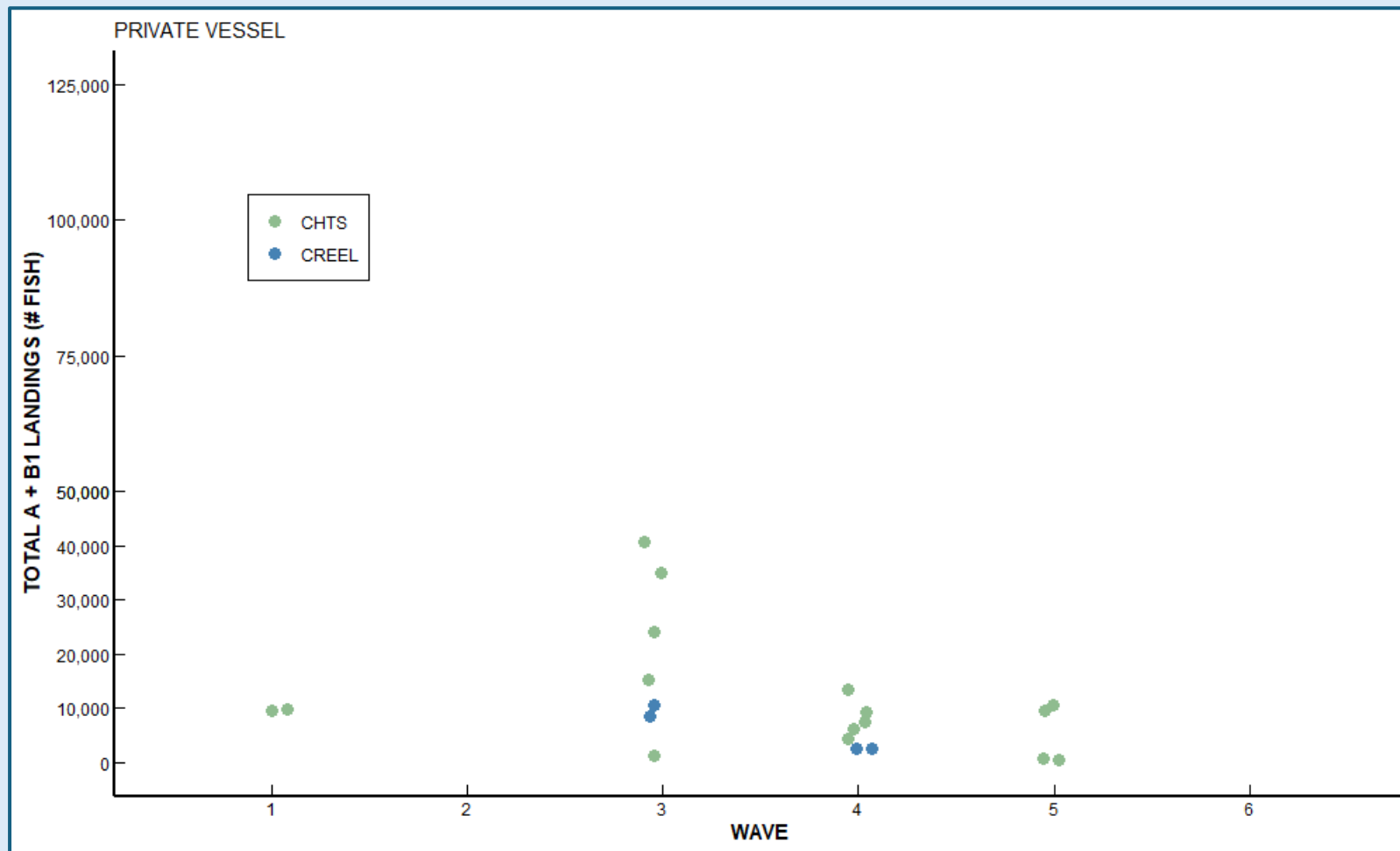
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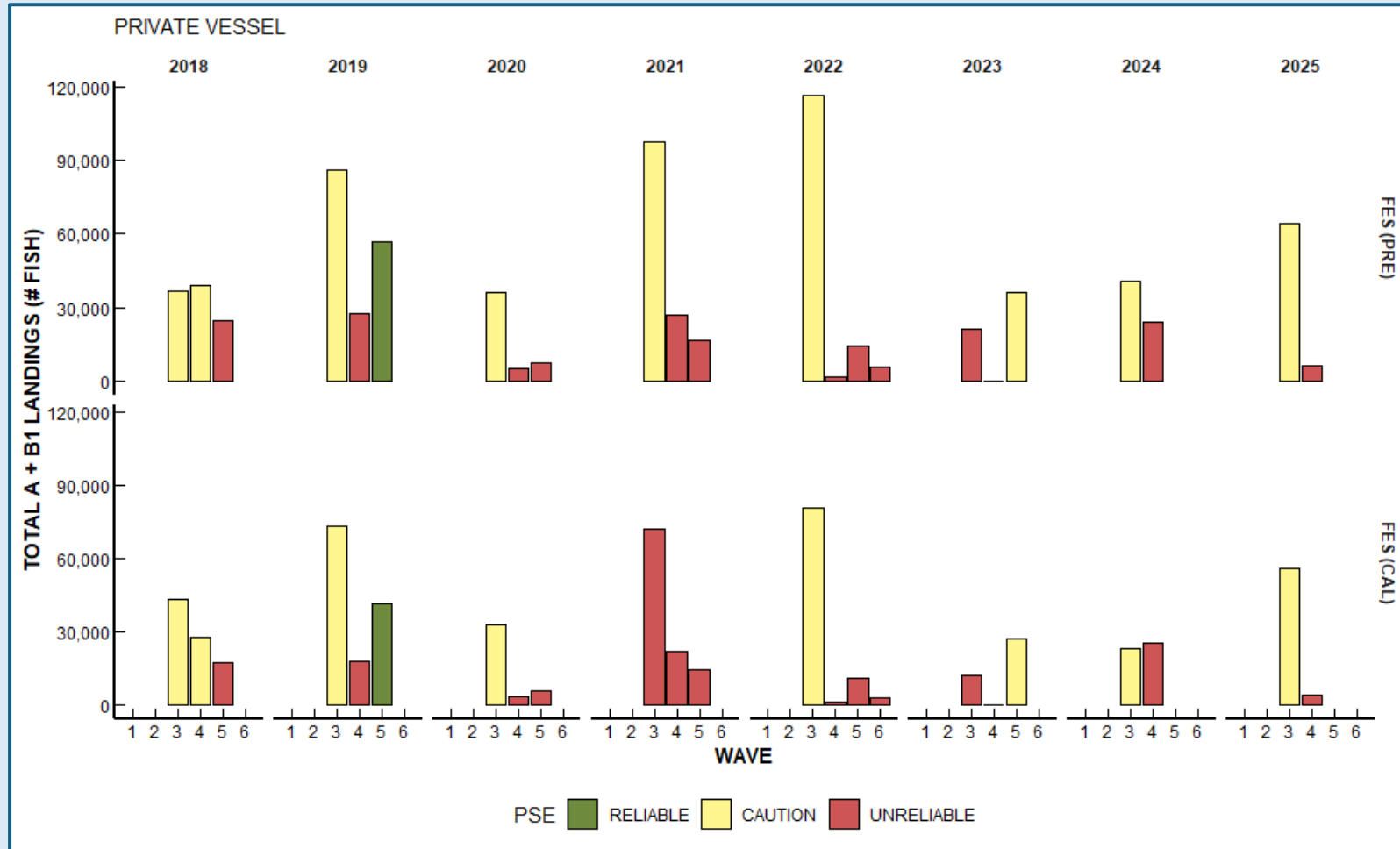
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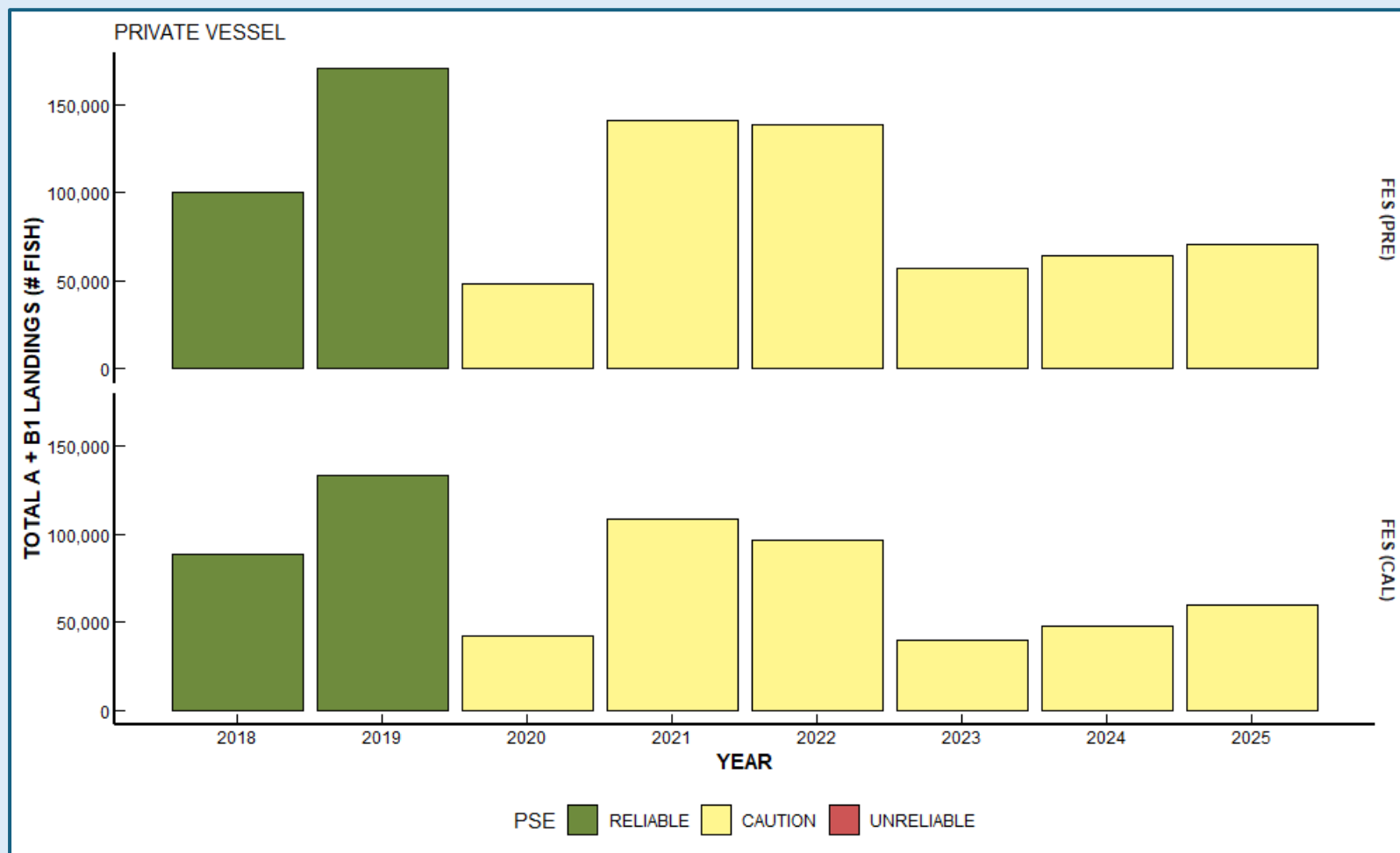
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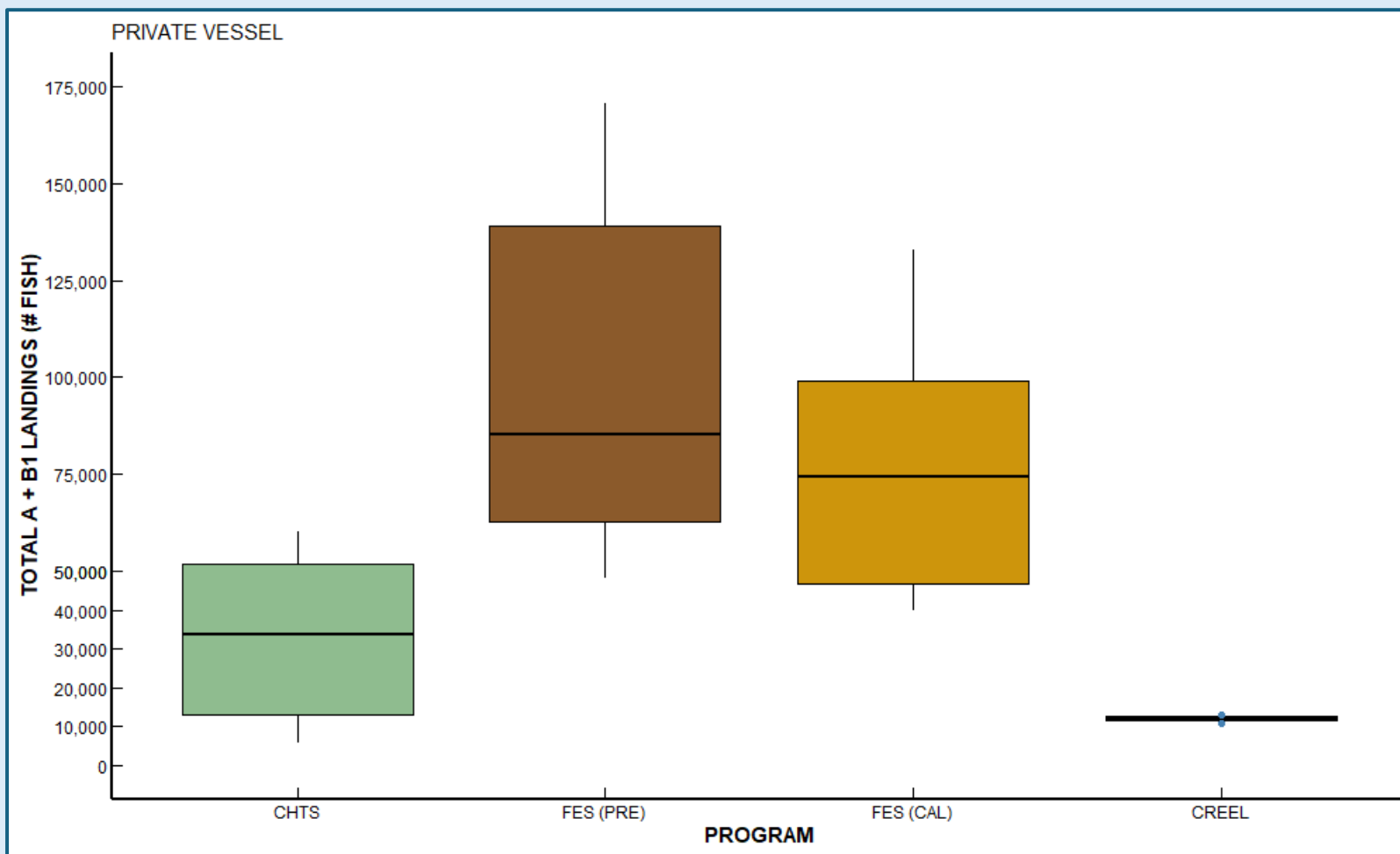
COMPARING PROGRAMS

Estimated annual landings (# fish, Type A + B1) for Red Snapper. Private vessel only



COMPARING PROGRAMS

Estimated annual landings (# fish, Type A + B1) for Red Snapper by program. Private vessel only



OVERALL RECAP

Overview

- Mississippi has the lowest harvest of any state in the Gulf
- MS Creel is the only operational survey conducted in Mississippi
- LA Creel calibration factor is 1.06 for Red Snapper management
- Current ACL for Red Snapper is in CHTS units

Objectives

1. Review estimate distribution across FES, CHTS, MS Creel.
2. Propose pathway for Red Snapper management in Mississippi for 2027.

