

# Monitoring Florida's Recreational Catch Limit for Red Snapper in the Gulf of Mexico



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Florida Fish and Wildlife Conservation Commission

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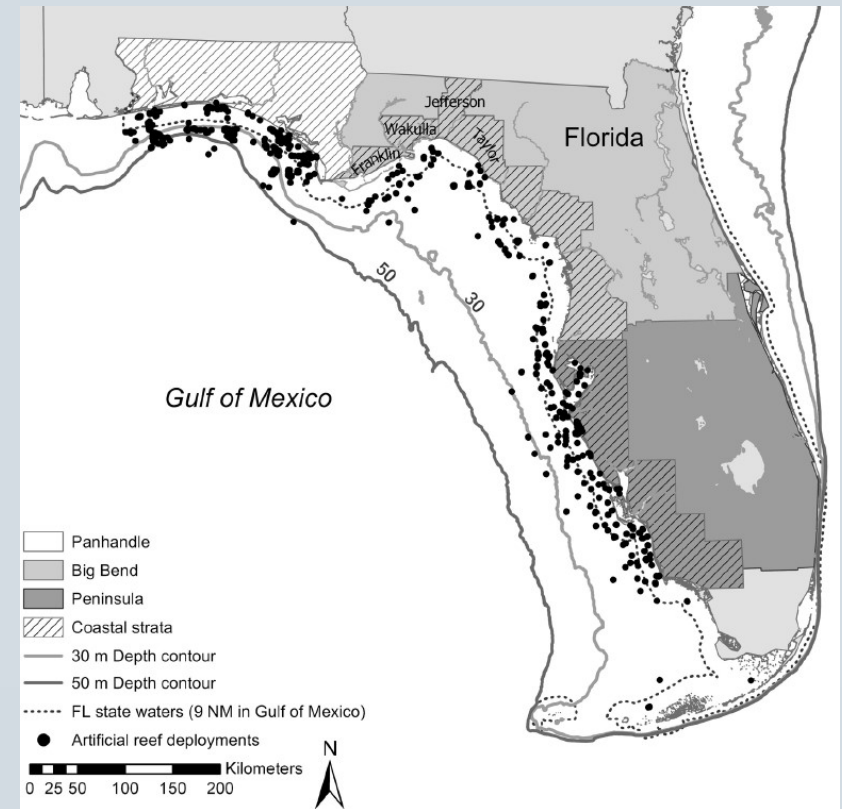
# Recreational Reef Fish Fishery in Florida

- Private boats account for majority of recreational red snapper landings
  - High effort
  - Many access points
  - Large geographic area
- Requirements to harvest Red Snapper
  - Valid state fishing license
    - Some exemptions
  - Sign up for Gulf Reef Fish Survey (GRFS)
    - Open access, >600,000 registered



# Overview of Gulf Reef Fish Survey

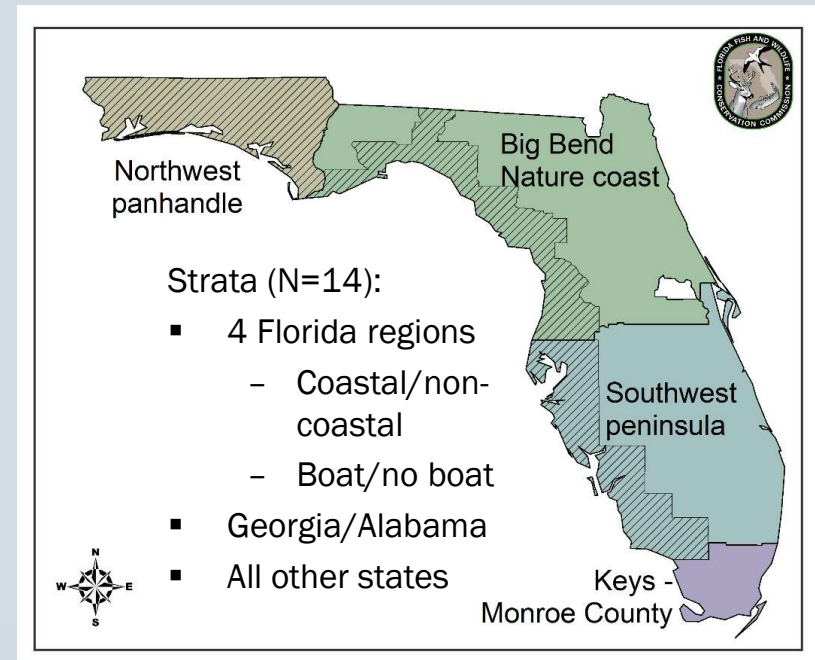
- Designed to improve data for management and assessment.
- Year-round, monthly estimates
  - Effort
  - Landings and discards
  - State waters and EEZ
  - Three large coastal areas in Eastern Gulf of Mexico
    - NW Panhandle
    - Big Bend
    - SW Peninsula



Gulf reef fish effort in 2018 ~1.1 million angler trips

# Gulf Reef Fish Survey Overview

- Methods certified by NOAA Fisheries
  - Calibration in progress
- Mail survey of Gulf reef fish anglers
  - Separate from MRIP Fishing Effort Survey
  - Directly estimates private boat angler trips that target reef fishes in Gulf
  - Stratified sample design accounts for potential non-response bias
- Private boat angler intercept survey
  - Incorporates MRIP APAIS data and sample weights
  - Measures CPUE and under-coverage



# Exempted Fishing Permit (EFP)

- State authority to manage allocation of Gulf Red Snapper recreational ACL 2018 to 2019.
- Includes landings from:
  - Private boats in state and federal waters
  - Charter vessels without federal permits
    - State waters only
- Florida annual catch limit (ACL)
  - 2018 = 1,778,515 pounds
  - 2019 = 1,704,875 pounds
    - Includes payback provision for 2018
- Season set in advance
  - 2018 = 40 days, June 11 to July 20
  - 2019 = 32 days, June 11 to July 12



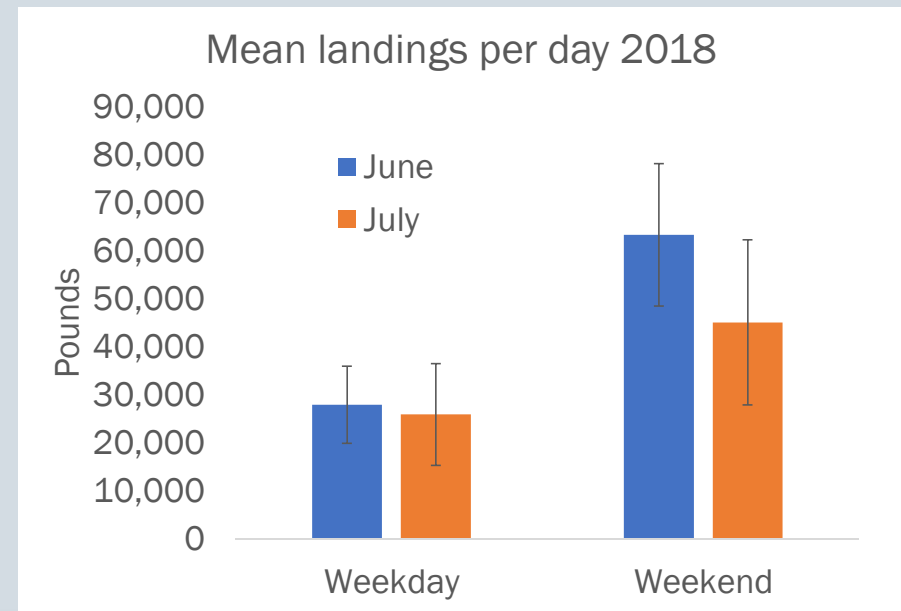
Additional State Regulations in Gulf:  
Size limit: 16" total length  
Bag limit: 2 per person per day





# Daily Harvest Rates

- Catch rates used to provide guidance to the Commission during EFP
  - Monthly landings in prior year(s) estimated separately for weekends versus weekdays.
    - Divide by number of days to get daily harvest rate.
  - Helped managers select dates for 2019 season to stay within catch limit.



# State Red Snapper Season: June 11- July 12, 2019

- August, wave 3 MRIP data available
  - Landings through June = 45.5% of ACL
- September, wave 4 MRIP data not available
  - Interim estimate through July = 74.5% of ACL
- October, wave 4 MRIP data available
  - Updated landings through July = 64.0%
  - Season re-opened 6 weekend days
  - TS Nestor formed October 18
- November
  - Season re-opened 2 weekend days
- December, wave 5 MRIP data available
  - Landings through Oct. = 75.5% of ACL



2019 landings through December available mid-February, 2020

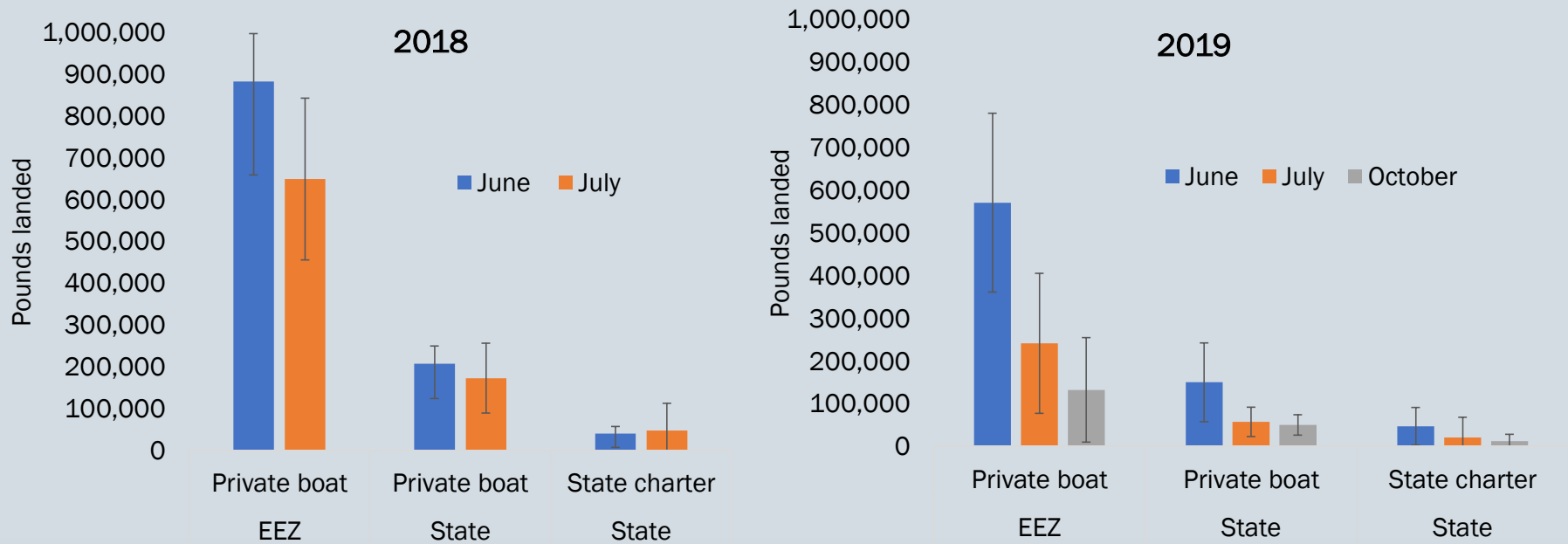
## Timeliness of GRFS Estimates

- Preliminary GRFS effort estimates
  - June: mid-August
  - July: mid-September
- Preliminary GRFS landings estimates
  - Wave 3 (May-June) MRIP data available mid-August
  - Wave 4 (July-August) MRIP data available mid-October
- Management advice for potential fall re-opening needed by mid-September
  - June and July GRFS effort x June CPUE



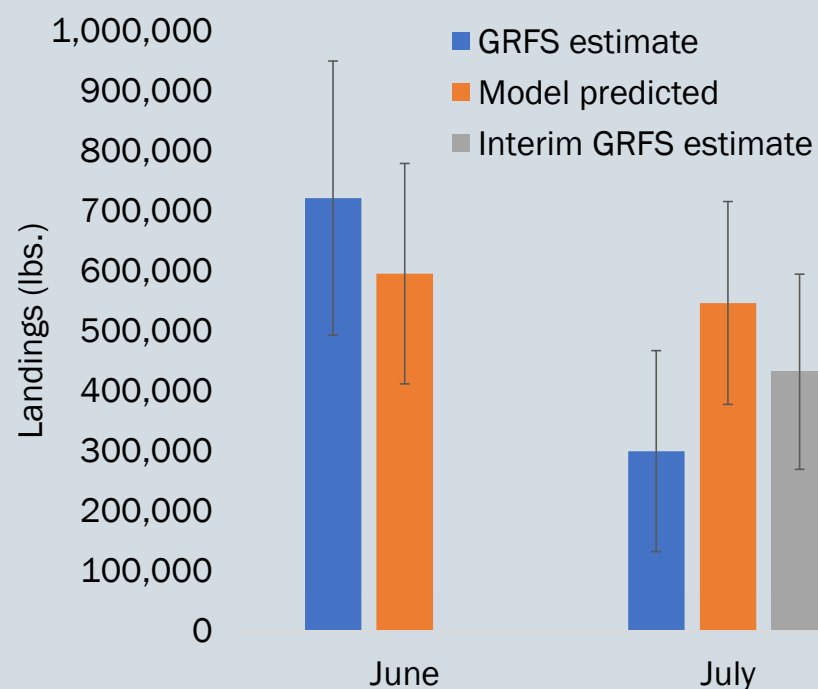


# Red Snapper Landings in 2018 and 2019



# In-Season Prediction Model

- GRFS angler intercept data
  - Available at end of month
  - Early predictor of effort
- Linear regression to predict effort
  - 2016-2018 monthly effort estimates
  - Predictor variables:
    - Sum GRFS intercept sample weights
    - Covariates for region, weather, fishing season
  - Simulated mean CPUE



## Conclusions

- State management under the EFP has been a success in Florida.
- The GRFS gives new insight to better manage the recreational fishery
  - When and where anglers fish, who is participating
  - Effort response to season timing and length
  - Impact of seasons for other state and federally managed fisheries
  - Changes in effort due to weather, hurricanes, red tide blooms
- Adapting to sustainably manage the open-access recreational fishery
  - New data and tools to help Commission set seasons
  - In-season monitoring for more responsive management



# Questions?



The following slides are considered backup material  
and are not anticipated to be part of the actual  
presentation





## Snappers



### News

#### 2020 Gulf Red Snapper Season

The Commission approved *draft* dates for the 2020 Gulf red snapper season to be June 11- July 25 (45 days). The final season will be approved at the February 2020 Commission meeting. To learn more, see [agenda](#).

#### Lane Snapper

Recreational and commercial harvest of lane snapper in Gulf of Mexico state and federal waters closed Dec. 13-31





# State Charter Estimates

- MRIP For-Hire Survey
  - Vessels randomly selected each week to report fishing effort
    - Includes state and federally permitted vessels
  - FWC staff contact vessel operators by phone to collect weekly trip data
  - During Red Snapper season
    - Sample increased to 20% per week
      - Vessels sorted by permit type
      - Systematic random sample
    - Red Snapper targeting question



## Comparison Across Surveys

- MRIP and GRFS use a similar approach
  - Mail survey for Effort
  - Intercept survey for CPUE
  - Effort x CPUE = total catch
- MRIP is a general survey
  - Estimates total effort for all saltwater species anywhere in state
    - Partitioned by area and region
- GRFS is more specialized
  - Directly estimates effort for reef fishes by area and region
- Both use intercept sample weights to adjust catch up to total effort
  - Trends are similar
  - MRIP estimates 2-3 times higher



Design	MRIP - Effort	Florida GRFS – Effort
Recall period	2 month waves	1 month
Survey method	Paper questionnaire sent by mail	Same as MRIP
Sample universe	State households (postal addresses)	Registered anglers
Expansion	State population (American Community Survey)	Registered anglers
Sample stratification	2 strata: <ul style="list-style-type: none"> <li>Florida households matched/unmatched with in-state fishing license</li> </ul>	14 strata: <ul style="list-style-type: none"> <li>Out-of-state residents</li> <li>In-state residents by:               <ul style="list-style-type: none"> <li>Region of state</li> <li>Coastal/non-coastal</li> <li>With/without boat registration</li> </ul> </li> </ul>
Sample Size	FL households selected per wave: <ul style="list-style-type: none"> <li>886 to 1,240</li> </ul>	Anglers selected per month: <ul style="list-style-type: none"> <li>7,000</li> </ul>
Response Rate	32%	20%
Estimate provided before under-coverage adjustments	Total angler trips that target any type of saltwater fish from: <ul style="list-style-type: none"> <li>Florida (any region)</li> <li>By mode (private boat, shore)</li> </ul>	Total angler trips that target reef fish from: <ul style="list-style-type: none"> <li>West Florida (except Keys)</li> <li>Private boats</li> <li>By region and area fished</li> </ul>
Under-coverage adjustments	Out-of-state residents	Non-registered anglers
Effort partitioning	Intercept data used to partition total effort by: <ul style="list-style-type: none"> <li>Area fished (inland, state, EEZ)</li> <li>Region (Gulf versus Atlantic)</li> </ul>	Not necessary