

Mississippi Recreational Red Snapper Season



Office of Marine Fisheries
Finfish Bureau
2018

Introduction

Red Snapper is one of the most difficult and controversial species to manage throughout their range. Due to population declines, regulation changes, and shortened derby-style recreational seasons, sufficient catch and effort data has become increasingly difficult to collect. Accurate and timely estimation of recreational Red Snapper harvest and angler effort is important as this species is currently under a federal reef fish management plan with a gulf-wide quota, which was allocated to individual Gulf States this year through Exempted Fish Permits (EFPs). Accurate estimation of in-season and annual harvest is extremely valuable to allow fisheries managers to set and adjust regulations. With the current approaches utilizing state-by-state management (in which each state manages its own quota independently), estimation of in-season harvest on a timelier basis is of utmost importance in preventing overages allowing the recreational Red Snapper fishery to stay within the allocated quota.

Red Snapper recreational harvest in Mississippi has been, and is currently, estimated using the Marine Recreational Information Program (MRIP) Access Point Angler Intercept Survey (APAIS). This survey is designed to intercept anglers at ramps and public access sites to gather data on catch and effort. Due to the decrease in federal season lengths for Red Snapper, and the random-draw system implemented through MRIP, fewer intercepts have captured Red Snapper in the past decade. With this issue in mind, Mississippi Department of Marine Resources (MDMR) implemented a mandatory electronic reporting system called Tails n' Scales in 2015. This system provides a means to gather sufficient catch and effort data for Red Snapper in Mississippi to inform management decisions.

The Tails n' Scales system is currently the most accurate Red Snapper reporting system for the recreational sector in the Gulf of Mexico (GOM). Its simple design and ease of use has given Mississippi the opportunity to collect data in a census-like manner. Angler reporting is also coupled with dockside intercepts by Finfish Bureau staff, allowing MDMR to validate trip compliance, number of anglers, and fish harvested. In addition to dockside intercepts, Marine Patrol (MP) intercepts are collected with the use of a Survey123 App, implemented in 2018, designed for a smartphone or tablet. The design is also versatile and adaptable to all Red Snapper season lengths and changes.

This year, Red Snapper were managed by the individual Gulf States through approved Exempted Fishing Permits (EFPs), which were reviewed by NOAA/NMFS and approved in April 2018. These EFPs will allow each gulf state to manage a state allocated ACL for two years, 2018-2019 on an experimental basis. This year, the recreational Red Snapper season was managed separately for the state for-hire component and the private recreational component in Mississippi (Appendix 1.). This approach split the annual catch limit (ACL) for the recreational sector into two separate ACL's, 135,149 pounds for the private recreational subsector and 2,800 pounds for the state for-hire subsector. Both subsectors were managed to the annual catch target ACT, which was calculated using a 10% buffer below the ACL (private recreational – 121,634 lbs., state for-hire – 2,520 lbs.). The federal for-hire fishermen were given a 51-day season, lasting from June 1st to July 21st. For all anglers landing fish in Mississippi, a Tails n' Scales trip authorization number had to be acquired prior to fishing. This trip authorization number expires after 24 hours.

Statistical analysis of data was divided around a two-week closure, which provided a sufficient number of intercepts for validation and estimation of harvest. The split for the seasons were considered as before the two-week closure (May 25th – July 8th) and after the two-week closure (July 23rd – August 17th, September 1st – 2nd, and September 14th – 16th). A ratio-estimator was used to estimate the total number of fish harvested in Mississippi and used ramp-specific compliance rates to calculate a mean (\pm S.E.) rate for each sector and season. Data presented in this document represents the final estimates for Mississippi’s 2018 Recreational Red Snapper Season.

Methods

Mandatory Reporting Program

MDMR staff continued the Tails n’ Scales (TNS) reporting system for this year’s Red Snapper season. This is the fourth year that this program has been used to gather data on Red Snapper harvest, and the first year of the Mississippi EFP; the TNS system continues to be robust to alterations in seasons and validation strategies. Currently, all recreational vessels (private and for-hire) landing Red Snapper in Mississippi are required to use the TNS electronic reporting system regardless of harvest area (federal waters, Mississippi state waters, or adjacent states’ waters, etc.). There are no exemptions. One angler per vessel per trip is required to possess a trip authorization number from the reporting system when targeting Red Snapper.

Reporting options continue to be available through the TNS mobile application, online at www.tailsnscales.org, or by phone through a 24-hour call center. Data gathered includes:

- Number of Red Snapper harvested
- Number of Red Snapper released
- Number of anglers
- Hours fished for Red Snapper
- Habitat fished (artificial reef, oil rig, natural bottom)
- Landing site

Also, by having anglers register in the TNS system prior to reporting their trip information, MDMR has access to information such as the vessel number, name, email and phone number of all individuals in the system. All data gathered are vital to the success of the program and are used to increase the accuracy of Red Snapper harvest estimates. All data are kept confidential following Title 22 Part 9 unless in aggregate form and by specific-level restrictions.

Validation Methods

Validations are currently conducted using access point intercept surveys in which MDMR staff are assigned to public-access ramps that have shown to be departure points for Red Snapper trips. These intercepts allow MDMR staff to record the number of fish and anglers and validate compliance by asking for the trip authorization number. These surveys also supply MDMR with opportunities to conduct bio-sampling (lengths, weights, sex, and otoliths), which are essential to

the estimation of the biomass of Red Snapper harvested. After collection, these intercepts are entered and checked for validity in the TNS database. All validations are inputted in the estimator to yield final estimates of number of fish harvested.

Marine Patrol

The Office of Marine Patrol was able to conduct on-water and public-access validations using a newly-designed Survey123 app by MDMR-IT. This App, whose predecessor was paper cards, allowed MP staff to record individual stops on water and enter in various information including unique authorization numbers, vessel numbers, names and other information which could be used for trip matching. The App also included location services, which provided a map for all stops made by MP over the season.

Observer Trips

The NFWF Reef Fish Observer Program continued this year with participating recreational federal and state for-hire vessels. A MDMR observer was sent on charter trips throughout the Red Snapper season to collect data on Red Snapper landings and discards. For-Hire vessels were chosen through a random draw each month. During each trip, the MDMR observer recorded the number of Red Snapper discards, lengths, and conditions of fish upon release. Effects of barotrauma, including bulging eyes, everted stomach, and expanded body cavity, were recorded. Additional bio-sampling data were collected at the dock which included length, weight, sex, and otoliths from each fish landed.

Statistical Analysis

As mentioned earlier, statistical analysis of data was split into two seasons, so that a sufficient number of intercepts could be used for validation and estimation of harvest. The split for the seasons were: before the two-week closure (May 25th – July 8th) and after the two-week closure (July 23rd – August 17th, September 1st – 2nd, and September 14th – 16th). This approach allowed for a more precise estimation of harvest, as it accounted for changes in catch metrics across the season. Data were split into three different sectors (private recreational, state for-hire and federal for-hire) and by season split for separate analysis. The data were input into a ratio estimator that calculated ramp specific harvest along with correction factors. The equation for this estimator is as follows:

$$\hat{N}_{yc} = N_y * \frac{\sum_{i \in S_2} w_i y_i}{\sum_{i \in S_2} w_i r_i y_i^*}$$

Where \hat{N}_{yc} is the number of Red Snapper caught and is estimated by calculating the number reported (N_y) and multiplying that by a correction factor which includes the sum of correct and incorrect intercepts including individual weights based on ramp pressure. For ramps with no intercepts, mean correction factors were used to estimate the amount harvested.

Results

The 2018 Mississippi private recreational Red Snapper EFP season began on May 25th and was open daily until July 9th at 12:01 a.m. at which time a two-week mid-season closure was implemented to allow for data analysis and harvest projections to occur prior to re-opening. The season opened again on July 23rd, and was open daily until August 24th, at which time the season was closed as the ACT was projected to be reached. The season re-opened for two days over Labor Day weekend, September 1st and 2nd, however, due to inclement weather, harvest was lower than projected (~ 60 lbs.). The final reopening of the season occurred over the weekend of September 14th – 16th, after which harvest totals indicated that the private recreational ACT had been surpassed and harvest was within 95% of the private recreational ACL. The state for-hire season opened on May 25th and ran daily until June 10th, at which point it had surpassed the state for-hire ACT and ACL. After the season’s completion, both the private recreational and state for-hire harvest were combined to compare to Mississippi’s overall ACT/ACL. While Mississippi exceeded the overall ACT, the overall ACL was not exceeded (Table 3). This year, as with previous years, the federally permitted for-hire sector was managed separately by NOAA, with its own season length and quota. Their season ran from June 1st to July 21st. Federal for-hire vessels in Mississippi were not included or managed by the EFP; however, federal for-hire vessels are still within the recreational sector and must report all Red Snapper trips in TNS. Harvest estimates were made for this sector and included below (Table 4) but the estimate totals do not count towards the overall harvest estimates within the EFP. Staff conducted a total of 203 intercepts across multiple ramps and collected biological data to inform biological metrics. Observers gathered discard and harvest data on 19 charter vessel trips from June through July (Table 5). All results are listed in table format below:

Table 1. Season lengths for each sector/subsector of the Mississippi Red Snapper Recreational Fishery.

| Sector/Sub-sector | Season Length |
|----------------------|---------------|
| Private Recreational | 76 Days |
| State For-Hire | 17 Days |
| Federal For-Hire | 51 Days |

Table 2. Biomass estimates of Red Snapper harvested (lbs.) by the private recreational sector in Mississippi for the 2018 EFP Season.

| Season Split | Raw Reported Harvest | Estimated Harvest | PSE |
|-----------------------|----------------------|-------------------|-----|
| Before 2-week closure | 80,371.5 | 88,286.3 | 4.0 |
| After 2-week closure | 36,646.8 | 40,392.3 | 3.3 |
| Total | 117,018.3 | 128,678.6 | 3.8 |

Table 3. Comparison of landings (lbs.) to Mississippi allocated annual catch limit (ACL).

| Sector/Sub-sector | ACL | Estimated Harvest | Percent of ACL |
|----------------------|---------|-------------------|----------------|
| Private Recreational | 135,149 | 128,678.6 | 95.2 |
| State For-hire | 2,800 | 3,235.5 | 115.6 |
| Total | 137,949 | 131,914.1 | 95.6 |

Table 4. Total Red Snapper Biomass harvested (lbs.) in Mississippi for 2018 with percent standard error (PSE).

| Sector/Sub-sector | Raw Reported Harvest | Estimated Harvest | PSE |
|----------------------|----------------------|-------------------|-----|
| Private Recreational | 117,018.3 | 128,678.6 | 3.8 |
| State For-hire | 2,995.1 | 3,235.5 | 2.6 |
| Federal For-Hire | 16,360.4 | 16,313.0 | 0.1 |

Table 5. Total Red Snapper landings and discards caught on observer trips.

| Red Snapper | Total Samples | Avg Length (in) | Avg Weight (lbs.) |
|----------------------|---------------|-----------------|-------------------|
| Landings | 242 | 20.98 | 5.36 |
| Discards (total) | 298 | 13.15 | N/A |
| Discards (undersize) | 283 | 12.99 | N/A |
| Discards (legal) | 15 | 16.30 | N/A |

Discussion

This is the first year in which individual states have been allowed to manage their Red Snapper harvest through NOAA approved EFPs. Through this process each state was given their own ACL to manage and were monitored using individual programs developed by each state (Tails n' Scales, Snapper Check, LA Creel, GRFS, Texas Creel). For Mississippi, the overall ACL was 137,949 pounds which was split between the private recreational sector (135,149 lbs.) and state for-hire subsector (2,800 lbs., Appendix 1.). Based on the results, the MDMR has determined that Mississippi harvested below the overall ACL, with 95.6% of the quota being caught during the 2018 Red Snapper EFP season. Despite staying below, the overall ACL for both sectors, the state for-hire sub-sector exceeded their allotted ACL by 435 pounds. This was due to an increase in participation by state-permitted captains when comparing last year to this year. Additionally, an increase in participation was observed during the 2018 EFP season, causing difficulty when projecting harvest in real-time. For the second year of the EFP, staff will be able to more accurately project based on the number of state-permitted captains that participated in this year's season. Low PSE's were observed for both portions of the season and across sectors, illustrating the accuracy of the estimates derived from the raw data. When comparing these results to recent years, the most notable difference observed were the trip compliance rates. In 2016, the private

recreational sector had a trip compliance rate of approximately 66.7%, which increased in 2017 to 86%, and reached 93% for this year's season. The federal for-hire sector also continued its 100% trip compliance rate based on trips validated by staff in 2018. In addition to the validations completed by Fisheries staff, Marine Patrol staff conducted numerous enforcement stops and were able to record compliance metrics on the Survey123 App. The increase in compliance along with the detailed tracking of MP compliance metrics represents the success of the program and ensures the accuracy of harvest estimates derived from the TNS system.

2018 Updates to Tails n' Scales System

Annual updates have been made to the TNS system; new features and changes are made to continue the process of enhancing and improving the system each year. Several changes were made to TNS for the 2018 season:

- The user interface was improved for ease-of-use and includes new icons that are better interpreted by anglers.
- MDMR IT built a Survey123 App for Marine Patrol when conducting on-water Red Snapper enforcement stops so that they could collect the information easily and more efficiently. The App also allowed managers to access the data in real-time.
- A notification banner was added to the web portal and phone App allowing fisheries managers to alert all TNS users with any pertinent messages at any point during the season.
- Push-to-phone, in-App, and SMS text messaging capabilities were implemented to alert anglers of season openings and closings. The system can send texts to all anglers, specified groups of anglers, or individuals. Trip authorization numbers and expired trip reminders were also sent via text message this year.
- Fisheries managers were able to quickly and easily disable the system's trip creation process during season closures to ensure anglers could not acquire trip authorization codes when the season was closed.

Data Improvements/Needs

The TNS system has shown to be versatile and adaptable at estimating the recreational harvest of Red Snapper; however, data improvements could increase the success of the program. Current improvements being considered include: 1) increasing the amount of validations to allow MDMR to analyze and estimate harvest in smaller timeframes, allowing managers to monitor total harvest more accurately than in two-month waves or season splits, 2) explore variability in spatial distribution of anglers to determine use and pressure across Mississippi's artificial reef habitats, and 3) determine if there is a difference in catch metrics between private and public access anglers, which is a data gap currently present in all surveys across the GOM. Currently, private access anglers make up approximately 1/4 of the Red Snapper anglers in Mississippi; however, traditional approaches do not intercept them. With MP staff currently conducting on-water intercepts, MDMR will be the first agency in the Gulf States with the ability to tackle this question. Overall, the TNS program has continued to improve and its success as a mandatory reporting system highlights the successful teamwork of the Office of Marine Fisheries, Marine Patrol, MDMR Information Technology, and all other individuals involved with the program.

Appendix 1. Mississippi's Approved NOAA EFP.

Appendix
Terms and Conditions
Mississippi Department of Marine Resources
Exempted Fishing Permit
PERMIT NO.: 18-SERO-03

Management of the Harvest of Red Snapper by the Private Recreational Component in the
Exclusive Economic Zone Off Mississippi's Gulf Coast for 2018 and 2019

PURPOSE

The purpose of this exempted fishing permit (EFP) is to allow the Mississippi Department of Conservation and Natural Resources (MDMR) to conduct a pilot study during 2018 and 2019 to test data collection and quota monitoring methodologies for management of harvest of red snapper off Mississippi's Gulf of Mexico (Gulf) coast by the private recreational component. Note that persons aboard state-licensed charter vessels are prohibited from fishing for or possessing red snapper in or from federal waters when under charter unless those vessels have been issued a federal reef fish charter vessel/headboat permit¹.

BACKGROUND

The current management system for red snapper in the Gulf utilizes traditional tools such as bag limits, size limits, and shortened seasons to remain within the allowable annual catch levels, and to achieve the other goals and objectives outlined in the fishery management plans. Currently, the recreational sector for red snapper is divided into the private angling and federal for-hire components, each with a separate quota. State-permitted for-hire vessels are included in the private angling component, but are not able to fish in federal waters. Despite regular increases in the recreational annual catch limit since 2010, shorter federal seasons have continued as the quota is caught in a shorter amount of time and inconsistent state water seasons become longer. The Gulf of Mexico Fishery Management Council (Council) is currently developing Amendment 50 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico to establish a program to allow each Gulf state to establish a management program that would provide flexibility in the management of the recreational harvest of red snapper for its anglers.

The National Marine Fisheries Service (NMFS) encouraged each of the five Gulf States to submit EFP applications to test state-based recreational red snapper management programs, and in response, each Gulf state developed a proposal for a pilot study. The Council reviewed these applications, and after careful deliberation, recommended the approval of each state's EFP

¹ Persons aboard vessels that have been issued a federal reef fish charter vessel/headboat permit may fish for or possess red snapper in and from federal waters only during the federal charter vessel/headboat season and are not exempt from any federal regulations.

application with the caveat that the length of the Gulf-wide federal for-hire component season not be affected by the issuance of these EFPs.

By issuing this EFP, NMFS exempts private anglers who hold a valid recreational fishing permit issued by the State of Mississippi and who are in compliance with all other Mississippi requirements for landing red snapper in that state from regulations at 50 CFR § 622.34(b) (recreational season closure for red snapper) and 50 C.F.R. 622.41(q)(2)(i) (private angler component in-season closure). Private anglers will be able to land red snapper harvested from state and federal waters during seasons announced by MDMR. Note that persons aboard state licensed charter vessels are not exempt from these, or any other federal regulations. For purposes of this project, NMFS establishes the following terms and conditions, which specify how this program will be conducted.

TERMS AND CONDITIONS

A. INITIAL ISSUANCE OF ALLOCATION TO MDMR

After the EFP is effective, NMFS will establish an apportionment of the red snapper recreational quota corresponding to MDMR's request. MDMR based its request on the 2017 harvest documented with the Tails n' Scales reporting system. This equates to a quota of 137,949 pounds whole weight (ww) with 135,149 pounds provided for private recreational anglers (state and federal waters) and 2,800 pounds provided for the state charter for-hire sector. MDMR will project the Mississippi season lengths based on 121,634 pounds ww and 2520 pounds ww, respectively, which is a 10% buffer below MDMR's allocation request. This buffer will be used to account for management uncertainty and will be the basis for calculating Mississippi's fishing season. The Gulf red snapper stock is currently being assessed. Should this assessment result in a change to the 2019 recreational quota, the terms and conditions of this EFP will be reissued to reflect the adjustment to Mississippi's allocation. The 2018 and 2019 seasons for private anglers (state and federal waters) and state-licensed charter captains (state waters only) may begin as early as May 1 and continue until the quota, less 10 percent, is projected to be caught. MDMR's allocation, when combined with the allocation provided to other Gulf states in their respective EFPs, does not exceed the Gulf-wide private angling component quota.

B. PERMIT CONDITIONS

MDMR will require private anglers report red snapper landings through a mandatory reporting system (Tails n' Scales) to participate in the EFP. By signing up for Tails n' Scales and holding the appropriate Mississippi state fishing license, which serves as a proxy for this EFP, anglers agree to be subject to the applicable terms and conditions associated with this EFP. Although not covered by this EFP, state-licensed charter vessel captains under charter will also be required to report red snapper landings through Tails n' Scales. All red snapper landed in Mississippi must be harvested in accordance with this EFP. MDMR must enforce the Mississippi red snapper season and ensure each participant abides by all federal fishing regulations and specific requirements imposed by NMFS through these terms and conditions.

Federally permitted for-hire vessels that also have an Mississippi state charter captain or charter vessel license must follow the federal for-hire season for red snapper harvested in federal waters, and can only fish for red snapper in state waters when both the federal for-hire season and Mississippi red snapper fishing season overlap. Any harvest by these vessels will be attributed to the federal for-hire component's quota and not counted toward Mississippi's quota under this EFP.

Tails n' Scales is expected to be certified through the Marine Recreational Information Program (MRIP) before the end of the fishing season. To validate angler reported information provided through Tails n' Scales, a corresponding dockside survey of anglers will be conducted by MDMR staff at public vessel launches and marinas. Trip information collected through dockside surveys will be compared to angler information submitted through Tails n' Scales for the same trip. In addition, phone and visual effort surveys will be conducted. The phone surveys will be used to complete or close out expired trips initiated through Tails n' Scales but marked as abandoned in the program. Visual surveys (aircraft and MDMR vessels) will provide vessel counts (effort estimates) and MDMR vessels will intercept anglers leaving or returning on red snapper trips.

The allocation of the private angling and state charter for-hire component's quota is measured in pounds, but Tails n' Scales reports the number of red snapper landed. The average weight of red snapper derived from the dockside sampling will be used to convert the number of fish landed to pounds landed. MDMR will monitor landings weekly and should the allocation, less the buffer, be reached, MDMR must close the Mississippi fishing season. Closures will be announced three days prior to the closure through public notices and emails to those registered in Tails n' Scales.

For 2018, the red snapper fishing season based off of MDMR projections for private anglers fishing in state and federal waters and state-licensed charter captains fishing in state waters may begin as early as May 1 and continue until the quota is caught. Should the recreational quota be exceeded in 2018, MDMR will adjust the quota for the following year to account for the overage in 2019.

MDMR must account for and collect data as specified in the reporting requirements to NMFS' Southeast Regional Office for posting on their website. Annual draft reports summarizing the results of the EFP by MDMR shall be provided to NMFS for review and comment. NMFS personnel will review the report and determine if it is based on the best available scientific information.

NMFS could terminate the EFP if MDMR violates the terms and conditions of the EFP (see 50 C.F.R. § 600.745(b)(9)).

C. EFFECTIVE DATES

This EFP is effective when signed by the NMFS Regional Administrator and the EFP holder identified on the EFP (18-SERO-03), through December 31, 2019.

D. EXEMPTIONS AND FISHING RESTRICTIONS

This EFP is issued to MDMR in accordance with procedures established at 50 CFR 600.745(b). The EFP exempts private anglers conforming to MDMR's EFP requirements from the following regulation:

- 1) Recreational season closure for red snapper at 50 CFR § 622.34(b)
- 2) Private angler component in-season closure at 50 C.F.R. 622.41(q)(2)(i)

This EFP does not exempt private anglers from Section 407(d) (16 U.S.C. 1883(d)) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Section 407(d) requires that if NMFS determines the Gulf red snapper recreational quota has been met, harvest must be prohibited for the remainder of the fishing year. This will apply to all private anglers even if MDMR still has allocation remaining. In addition, the EFP does not exempt private anglers from the federal minimum size limit at 50 CFR § 622.37(a)(1) and bag limit at 50 CFR § 622.38(b)(3).

E. REPORTING REQUIREMENTS AND DATA DISSIMINATION

MDMR must report red snapper landings in numbers and pounds, the estimated number of trips and anglers landing red snapper, and any other relevant information to NMFS at least bimonthly. At the end of each fishing year, a report summarizing the results of the EFP by MDMR shall be provided to NMFS for review and comment as soon as possible but no later than April 15 of the next calendar year.

The fishing activities carried out under the EFP, which are otherwise prohibited, are for the purpose of collecting catch information. Anglers participating under this EFP agree to the public release of aggregated information obtained as a result of activities conducted under this permit.

F. ENFORCEMENT

Anglers fishing under this EFP must be able to provide the appropriate state license and any other state-required documentation to state and federal law enforcement agents. Anglers fishing for red snapper outside the state season, unless also participating in another state's EFP whose waters are open to red snapper harvest, will be considered in violation of the EFP.

G. SANCTIONS

Failure of MDMR or any person to comply with the terms and conditions of this permit, any notice issued under 50 CFR Part 600 any other applicable provision of 50 CFR Parts 600 and 622, the Magnuson-Stevens Act, or any other regulations promulgated thereunder, may be grounds for revocation, suspension, or modification of this permit as well as civil or criminal penalties under the Magnuson-Stevens Act with respect to all persons and vessels conducting activities under the EFP (50 CFR § 600.745(b)(9)).

H. WAIVER

The EFP holder on its own behalf, and on behalf of all persons conducting activities authorized by the permit under his/her direction, waives any and all claims against the United States and its agents and employees, for any liability whatsoever for personal injury, death, or damage to property directly or indirectly due to activities under this permit.