

Day Passes for Private Reef Fish Angling - EFP Application

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The proceeding EFP application seeks to create a small-scale experimental fishery for the private recreational sector in the Gulf reef fishery, for the purpose of answering essential research questions relevant to the future of management in that sector, and in the reef fishery more broadly.

In summary, this proposal outlines a program wherein private boat anglers may participate more actively in the management of the fishery by reporting to NMFS on their trips and catch through an online system, and in exchange are awarded flexibility in future harvest decision, ie. are allowed to retain the target species outside of the regular season.

The remainder of the application is organized as follows. The **Statement of Purpose** describes in greater detail the motivation for the proposed experiment. The section **Structure of Proposed Program** provides the details of the proposed experiment, using the Action/Alternative idiom common to amendment options papers to highlight issues which need to be decided on. The **Socio-Economic Study** elaborates on the research questions this experiment will answer, beginning with a broad conceptualization of the questions, and proceeding to more explicit, precise formulation of the questions in terms of statistics that may be calculated from the data to be gathered in the experiment. The remaining sections provide responses to the required parts of an EFP application as outlined on the [SERO website](#).

Statement of Purpose

A statement of the purposes and goals of the activity for which an EFP is needed, including justification for issuance of the EFP.

— [SERO EFP Application Info](#)

The project goal is to assess the feasibility of alternative mechanisms for allocating harvest to the recreational sector. The current mechanisms for allocating harvest of Gulf reef fish to the rec sector include 3 primary components:

1. Season openings and closures (along with potential mini seasons, re-openings, etc.)

2. Size rules for harvested fish (minimum size, slot limits, etc.)
3. Per-person Bag limits (and aggregate bags, per-vessel limits, etc.)

Restrictive season lengths are an inevitable outcome of this mechanism when applied to certain fisheries, the Gulf Red Snapper fishery being a prominent example. They are inevitable because if sizing rules are already binding and it is not possible (or desirable) to reduce harvest by passing more restrictive size limits, and bag limits are already low (in particular, if they are already 1 or 2 fish, as is the case for the Red Snapper fishery), yet projected harvest (or last year's actual harvest) is above the rec sector allocation, then the only remaining policy lever by which to reduce harvest is the shortening of seasons.

Short season lengths are a source of considerable discontent for rec sector participants. This is partially attributable to the connection between the season length and the amount of fish which can be harvested (ie. the ACL), but not entirely. The discontent arises also from the arbitrary nature of the current de facto allocation system, wherein essentially random factors such as someone's work/family schedule, whether they happen to fall ill during the brief open season, local weather and water conditions, etc. figure prominently, though implicitly, into their harvest allocation.

Some seasonal restrictions are justified on biological grounds, for instance the Gag fishery which sees heavy spawning in March. However, most season restrictions exist for the sake of limiting harvest. This is unfortunate; it entails a trade-off between the goal of sustainably managing the fishery and the ability of rec anglers to flexibly manage their own angling schedule.

Such a trade-off is partially inherent to sustainably managing the fishery. But some of the trade-off is peculiar to the existing mechanism, and in particular to one feature of the existing mechanism: anonymity. The status-quo rec allocation regime treats anglers as anonymous in that an individual angler's (or charter operator) choices today are entirely unaffected by their actions yesterday. They face the same bag limit, size limits, and impending season closure no matter how they have participated in the fishery recently.

In imagining alternate mechanisms which are not anonymous, and which might thereby avoid some unnecessary limitations on angler's decisions about when to fish, the easiest example at hand comes from the IFQ programs in the commercial sector. In these programs, a very clear and explicit link is made between the fisher's actions today and the choices they will have to make tomorrow: every IFQ-pound they land today will be gone from their account for their operations tomorrow. IFQ programs are of course not directly applicable to the private rec sector, for a number of reasons, for instance the difficulty in monitoring the exact weight of landed fish. However, the general principle that fisheries management should create a 'mirroring', wherein the long-term vs short-term trade-offs which we face at a societal level are also felt at the individual level, is certainly applicable.

Structure of Proposed Program

A statement of the purposes and goals of the *activity for which an EFP is needed*, including justification for issuance of the EFP.

— SERO EFP Application Info

Under this EFP, participating private anglers will be granted a day pass(es) to fish for and retain Red Snapper outside of the regular season, as determined by the Gulf Council.

If the EFP is allocated 1.00% of the 4.269×10^6 pound ACL, this would provide a total of 4.269×10^4 pounds for use in this EFP. At an average landed weight of 6 pounds, and conservatively assuming that all anglers will land the maximum 2 fish on the day they use their pass, this translates to 3557.5 passes being available for distribution under this EFP.

We may reasonably anticipate that there will be more anglers interested in participating in this EFP than the number of passes there are to distribute, and so require a method for distributing the passes.

The following is an outline of the actions for this EFP:

Action 1: Determine eligibility and advertise program

We will need to determine who is eligible to apply for this program, which may include all licensed anglers, or may involve restrictions based on residence or other factors. We will then need to ensure that all anglers who may wish to participate have a chance to be informed about the opportunity. This may be accomplished in concert with the State management agencies, who have contact information for most anglers who are registered as saltwater license holders, and furthermore may also have info on those targeting reef fish in particular, as in the case of Florida with the Gulf Reef Fish anglers designation. Additional avenues for promoting the program include messaging through popular clubs such as the ASA and CCA, as well as local tackle shops who already commonly serve as a distribution channel for information about fishing regulations.

Alternative 1: No eligibility restrictions

Anyone with a valid license for saltwater fishing may apply for the program, including those outside of Gulf states.

Alternative 2: Gulf-state residents only

Participation may be limited to those who reside in one of the Gulf states.

Alternative 3: Single-state, or otherwise spatially-delineated eligibility

It may be desirable to conduct the program in a spatially-targeted manner. One motivation for this may be to aid in data verification, as a smaller area reduces the costs of conducting dockside intercepts or other verification actions. This is discussed further [here](#).

Action 2: Determine application requirements and solicit applications

Alternative 1: Open application

Allow applications to be submitted at no cost by any eligible angler, as determined under [Action 1](#).

Alternative 2: Require prior cooperation with data collection

Require prior cooperation with data collection efforts as a condition for valid applications. For instance, for a day pass program around the 2022 fishing season, require that anglers report their catch through an angler app during the 2021 season.

Alternative 3: Require nominal fee to apply

Require the payment of a nominal fee be included in applications, for the purposes of covering the administrative expenses of this EFP. Furthermore, requiring a small fee may be an effective mechanism for “weeding out” speculative/frivolous applications, which would be particularly important in case of using [lotteries to determine program participation](#).

Action 3: Set up data collection infrastructure

The core of the program being an exchange of monitoring and catch data for flexibility in the disposition of harvest privileges, the choice of data collection instruments is an important design element. The alternatives discussed below are not at all mutually-exclusive, but rather represent a range of complementary options.

Alternative 1: Angler app logbooks

At a minimum, the information to be collected should include the number of the target species which are caught, and the number retained. It is likely also valuable to collect information on other species encountered on the trip. If entered in real-time, this information may be time-stamped.

Alternative 2: Catch photos

Requiring that anglers submit a photo of the harvested target species may be valuable for a number of reasons. First, it provides a simple means of (virtually) measuring the fish, increasing the potential value of data collected under the program to stock assessment work. Second, it may very well lower the [costs to anglers](#) of reporting in to the program. Third, it is an effective way to ensure that over-reporting of catch is not possible, which may be important if the program is being used to establish [catch histories](#).

Alternative 3: Law enforcement validation

Though uncommon for the recreational sector, law enforcement can play a role in validating the data reported through this program. In the Headboat Collaborative EFP, validation of reported catch by port agents was an integral part of program success, as documented [here](#). More applicable to the current proposal, Mississippi has since 2015 required anglers to report their catch of Red Snapper on the Tails'n Scales app, and conducts patrols to verify compliance with this system, as described [here](#). MS may be unique in that a relatively small number of public access points (~14) allows for such verification to be done more efficiently than would be possible in the more highly dispersed case of, say, Florida. If this alternative is desired, other actions may be tailored to make this more practicable, particularly the [eligibility criteria](#) and [reporting requirements](#).

Alternative 4: Biological Verification

Complementary to other methods of validation, biological sampling may be conducted for the purpose of understanding the selectivity of program participants.

Action 4: Distribute day passes

Alternative 1: First Come, First Served

This alternative is not advisable. If it first-come first-served with a requirement to file applications in-person, say at tackle shops, then it is effectively a geographical restriction on participation, which would be better done in more explicit fashion under the [eligibility criteria](#). If it is first-come, first-serve with an online application, we essentially guarantee that the website used for registration will have a sudden, large influx of traffic, and risk crashing the site, getting off to a bad start with the program.

Alternative 2: Lottery

Perhaps most feasibly, offers to participate in the program may be offered to applicants at random, conditional on a valid and eligible application. Another way of viewing this is that program participation may be offered at random for the purpose of improving statistical inference on program data, so that the participants can be understood as a random sample of the population of anglers who are interested in the program. In that sense, some stratification based on geography or other attributes may also be desired.

Alternative 3: Revenue-Neutral Auction

Though conventional auctions may not be viable in this case, revenue-neutral auctions may be employed, which remit to the participants some amount of money, so that most participants (low-bidders) receive a small sum, provided by the winners (high-bidders / program participants). This may be desirable if willingness to pay values are desired.

Alternative 4: Participation Buy-Out

In the absence of an auction, this program will not allow for direct measurement of willingness to pay values for the out-of-season fishing passes being awarded to anglers. If obtaining such values is desired and auctions are not feasible, an alternative method is to offer to buy people out of participation, offering them a random amount of money, as has been done before with licenses.

Action 5: Collect data from anglers

This action has many possibilities, among which the alternatives below illustrate some archetypal options.

Alternative 1: Collect info only on day pass trip

This alternative represents the minimal information which may be collected; only requiring that anglers enter their catch information during the trip on which they use the out-of-season pass.

Alternative 2: Require reporting during the full-length of regular season

This alternative sits on the opposite end of the spectrum from alternative 1; requiring that anglers comply with the data reporting requirements during all trips for the target species during its regular season.

Alternative 3: Require reporting during a fixed portion of the season

For instance, during a 1-week or 2-week period in the middle of the season. This approach would have the drawback of not providing information through the entire season, substantially complicating inference about stock impacts, especially in the case that weather or other events have realizations from the distribution tails during the chosen time period. It has the potential advantage of easing data verification, in particular if **law enforcement** or **biological** verification is being conducted.

Alternative 4: Require reporting at random intervals

In order to obtain data coverage over the full season length, anglers may be asked to report at randomly selected intervals. For instance, if each angler is expected to report on their trips twice during the regular season, then they may receive a notification at some date telling them to file a logbook on their next trip, and then another notification later in the season.

Alternative 5: Experimentally assign participants to different levels of reporting burden

Rather than assigning all participants to the same level of reporting requirements, it may be useful to vary the level of reporting burden that is required. This can be done at random,

allowing us to make inferences about the **costs of reporting** based on the accept/reject rates observed at different levels of reporting burden.

Alternative 6: Require reporting from a control group

The preceding alternatives have been presented with an implicit assumption that only program participants will be reporting in the program. However, as a way of establishing a control group, we may also require that, as a condition of filing an application, applicants agree that there is a chance they may be selected into a control group, subject to the same reporting requirements as the program participants, but without the day pass award. This would especially be useful for assessing the presence of any incentives to increase fishing for the participants, which contributes to understanding whether **Pareto improvements** may be achieved under this program.

Action 6: Review and Renew Program

After participating anglers have made use of the day pass, the program review certainly includes at a minimum, (1) systematic analysis of collected data, and (2) post-program survey and/or qualitative research to follow up with participants. There is also potential for the program to be structured as a multi-year or habitual endeavor.

Alternative 1: No Renewal

In case that a “self-contained” pilot program is preferred, the program may be structured with no intention of continuation.

Alternative 2: Conditional Scale-Up

In case that an intentionally scalable program is desired, we may define at the outset certain performance indicators which, if they attain some minimal values, will trigger a review for expanding the program in the following year. Commitment to such expansion can not be attained in the present EFP per se, since it would require explicit allocation of quota, but this may be a useful mechanism for defining in advance what a successful program would look like. In particular, high compliance rates as assessed by law enforcement validation, low sample attrition, and other key metrics may be looked to in determining whether to trigger consideration of program scale-up.

Alternative 3: Using program to establish catch histories

The program may be allowed to snowball by treating the reported catch among participants as catch histories, and removing the catch among participants from the overall ACL, and allowing the participants to conduct all fishing under the day pass program in the next year. Notably, it can be the case that this is done in a way which does not affect the regular season length, although whether this is actually the case is an empirical question. In order for this to be a viable alternative, the program needs to be implemented with relatively **high reporting requirements**. Furthermore, there is a clear issue regarding the “race for catch

history”. That is, if anglers know that the number of day passes they will receive in the next year is proportional to their fishing in the current year, they will have a strong incentive to fish more than they otherwise might. This would, if applied at any meaningful level of scale, likely result in exceeding the ACL. One way to mitigate this would be to structure the program as a co-operative

Socio-Economic Study

A statement of the purposes and *goals of the activity* for which an EFP is needed, including justification for issuance of the EFP.

— [SERO EFP Application Info](#)

In conducting such a program, our goals are to answer the following questions:

1. How do anglers value increased flexibility in the choice of when to target which species?
2. How do anglers (dis)value the cost of providing data to NMFS, and what are their privacy concerns?
3. Who will be interested in this program?
4. Is it possible to achieve Pareto improvements in this sector, conditional on current allocation levels?

Evaluating program benefits to anglers

How do anglers value increased flexibility in the choice of when to target which species? In an immediate sense, this program presents several options for understanding this value. In the case that **auctions** or **buy-outs** are used to allocate program participation slots, this will provide explicit, dollarized values of the out-of-season fishing provided under the program. Alternately, if **reporting burdens are varied at random**, the value of the out-of-season fishing may be understood in relative terms to the cost of program reporting.

Beyond the short-term, if the program is **structured as a multi-year program**, and we see that anglers opt-in to the program for a second or more year after having been exposed to it prior, that is the simplest possible proof that the anglers prefer this management approach to the status quo.

Evaluating program cost to anglers

How do anglers (dis)value the cost of providing data to NMFS, and what are their privacy concerns? There are costs to providing the information we will request of program participants, including the time and effort to fill out forms, as well as privacy concerns. For the purpose of this program, this research question can be addressed in two parts. First, prior to program implementation, qualitative research (focus groups, interviews, etc.) should be conducted to assess angler receptivity to the program, in particular with regard to their perceptions of the different alternatives surrounding the **data collection action**. Second, during and after program implementation, data collected during the program may be analyzed to assess

this question. For instance, if an **alternative with relatively high reporting requirements** is chosen, particular attention should be paid to sample attrition rates, that is, anglers who joined the program and began reporting, but dropped out, possibly because they found the reporting rules more burdensome than they expected. More directly, if **reporting burdens are varied experimentally**, we may obtain a clearer understanding of how important these costs are by looking at the curve plotting program participation rates with respect to the randomly-assigned reporting burden. Especially if such a curve exhibits a steep drop-off at some threshold value, we may infer that represents a level of reporting burden which most anglers deem too high.

Characterizing the program participation decision

Who will be interested in this program? With respect to number of trips taken during the season, catch per unit effort, and other important attributes, there is significant heterogeneity among anglers in the fishery. Understanding who would be interested in participating in this style of program is an important part of understanding the likely effects of a more large-scale implementation of this style of program.

Pareto Improvements

Is it possible to achieve Pareto improvements in this sector, conditional on current allocation levels? This question is particularly relevant to the notion of using the program to establish **catch-histories**. In this context, a Pareto improvement would mean that the program can be scaled up without affecting the regular season length. If anglers choose to opt-in to the self-monitoring and day pass regime, while the regular season remains an unaffected option, this necessarily implies a Pareto improvement is achieved. Whether this is feasible turns on several issues, including (1) designing the program to avoid creating an incentive to increase fishing effort “race for catch history”, (2) whether the data gathered from the program can be verified with sufficient reliability to treat reported catch as catch histories, and (3) creating an appropriate mechanism for program entry and exit (ie. if someone wants to exit the program and just participate in the regular season, how will that affect the others still participating in the program?).

Exemptions Requested

A list of the specific regulations from which an exemption is being requested and why each exemption is required for the experiment to succeed.

— [SERO EFP Application Info](#)

The principal exemption requested concerns the season closure. Under this EFP, participating anglers will be allowed to retain fish caught outside the regular fishing season. All other restrictions regarding the use of gear, possession limits, protected habitat, etc. will remain in effect for participating anglers conducting out-of-season fishing under this EFP.

Species Harvested

The following catch information:

1. The species (target and incidental species must be clearly differentiated) expected to be harvested and/or discarded under the EFP.
2. The number or weight, by species, of such harvest and/or discard anticipated to occur during the exempted fishing, regardless of whether or not it is retained for sale.
3. The expected disposition of all regulated species harvested under the EFP (e.g., what will be done with the fish once it is caught).
4. Any anticipated impacts on fisheries, marine mammals, endangered species, or Essential Fish Habitat.

— [SERO EFP Application Info](#)

The target species for this EFP is Red Snapper. Incidental catch for other species in the reef fish complex will occur, and participating anglers will remain subject to all applicable regulations surrounding season lengths, possession limits, gear rules, etc. for those incidental species. From the Florida Red Snapper EFP:

Other reef fish species expected to be caught incidentally by anglers participating in the pilot study covered by this EFP include: gag, greater amberjack, rudderfish, almaco jack, red grouper, black grouper, vermilion snapper, and gray triggerfish. Direct harvest of these species is not covered by this EFP. Participating anglers will be required to release any incidental catch not allowed by current fishing seasons, size, and bag limits established by state (FWC) and federal (GMFMC) regulations.

— [FL Red Snapper EFP Application 2018](#)

Furthermore, regarding potential impact on marine mammals, threatened or endangered species, and EFH, we do not anticipate any significant impacts. Again from the Florida Red Snapper EFP:

Fishing activities permitted through this EFP are not anticipated to negatively impact fisheries, marine mammals, threatened or endangered species, or essential fish habitat, as any take of these species is not expected to exceed normal recreational red snapper/reef fish fishing activity. Increased use of descending devices and venting tools may increase survival of released fish, and could have a positive effect on these stocks. The Gulf of Mexico reef fish vertical line fishery is listed as a Category III fishery on the 2017 List of Fisheries, meaning the likelihood of mortality and serious injury is less than or equal to 1% of the potential biological removal level for each marine mammal stock. Bottlenose dolphins are the only marine mammal with recorded interactions with this fishery. A 2011 Biological Opinion issued by the National Marine Fisheries Service concluded that the recreational reef fish hook and line (vertical line) fishery may have interactions

with endangered sea turtles and smalltooth sawfish, but available data suggest these species survive the interactions and that this fishery does not jeopardize the continued existence of these species.

— [FL Red Snapper EFP Application 2018](#)

Effort Information

The following anticipated effort information for each vessel:

2. For mobile gear:
 - Type and size of gear to be used.
 - Number of tows to be made each day.
 - Duration and speed of each tow.
 - Number of days during which the experiment will be conducted.
 - Sampling locations (including depth).

— [SERO EFP Application Info](#)

In our application, participating anglers will be fishing using the gear of their choice, subject to the relevant contemporary rules for fishing under the Gulf Reef Fish FMP, eg. the descending device requirement. The relevant possibilities for what dates and times anglers will be able to conduct exempted fishing under this application are discussed in [Structure of Proposed Program](#).

We are requesting this EFP be active from June 01, 2021 through December 31, 2021.

Vessel Documentation

Information for vessels to be used for the EFP as soon as the information is available and before operations begin under the EFP:

1. Vessel Name.
2. USCG documentation number, state license or registration of each vessel.
3. Vessel home port.
4. Vessel owner information – name, mailing address, phone number, email.
5. Vessel captain information and primary project participants – names.

— [SERO EFP Application Info](#)

As a condition of participation in the program, anglers will be required to submit, at the time of program sign-up, the state vessel registration information for any vessel from which

they will engage in exempted fishing under this application, along with their address and contact information.

Application Info

1. The date the application is submitted and extent of time (research end date) needed to accomplish work.
2. The applicant's and/or project coordinator's name, mailing address, telephone number, e-mail, and fax number, if available.
3. A point of contact who can respond to any questions regarding the project that NMFS staff may have during consideration of your application.

— [SERO EFP Application Info](#)

This application is submitted March 9, 2021, by [Alexander Gordan](#), NMFS SEFSC. The project is to remain active through December 31, 2021, as explained in the section on [Effort Information](#).