UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

MEMORANDUM FOR: The Record

DATE: 4/21/2026

FROM: Evan Howell – Deputy Assistant Administrator for Scientific Programs, National Marine Fisheries Service (NMFS)

CC: David Detlor – Director (Acting), NMFS Office of Science and Technology; Clay Porch – Director, NMFS Southeast Fisheries Science Center; Andy Strelcheck – Regional Administrator, NMFS Southeast Regional Office

SUBJECT: Formal NOAA Fisheries Certification of AL and MS Creel Recreational Fishing Survey Programs

This memorandum certifies the MS and AL Creel designs described herein as approved methods for deriving estimates of recreational fishing catch and effort. Both methods are adaptations of the previously certified LA Creel design and independent expert peer reviews were conducted from January to April 2026 to ensure they maintain the necessary statistical integrity. The reviewers concluded that both AL and MS Creel meet the criteria for certification, as their structures rely on standard, design-based probability sampling and estimation methodologies.

UNDERSTANDING CERTIFICATION AND NEXT STEPS

NOAA Fisheries established a rigorous certification process to ensure recreational fisheries surveys and estimation methods are scientifically sound. Certification is a core component of meeting NOAA Fisheries national recreational fishing survey and data standards. Certified methods are prioritized for funding as available, and eligible for use in NMFS fisheries stock assessments and management actions. Note that future changes to the underlying survey designs must be documented and re-reviewed to maintain this certification.

While NOAA Fisheries certification validates the scientific integrity of a survey, it does not mean the resulting data can be immediately used to monitor catch against existing Annual Catch Limits (ACLs). Because existing ACLs were established using historical data from previous survey methods (e.g., MRIP APAIS-FES or APAIS-CHTS), monitoring current catch using a newly certified state survey can create an “apples-to-oranges” comparison. Different survey designs inherently produce differently scaled estimates of catch and effort. Evaluating the new, uncalibrated data directly against an existing ACL could lead to inappropriate management actions—such as prematurely triggering accountability measures or inadvertently allowing overfishing—simply because the "ruler" used to measure the catch has changed, rather than the actual harvest.

To bridge this gap, comprehensive transition coordination is required. AL and MS will work with NMFS and the Gulf Council to develop agreed-upon calibration methods as needed to translate the new survey estimates into the same statistical "currency" as used for science and management. Calibration serves a dual purpose: first, "back-calibrating" the new survey data allows current catch to be monitored against existing ACLs. Second, and equally important, calibration is used to update the historical catch time series to bring it in line with the new data collection methods. Generating this calibrated historical time series is a critical requirement for conducting future stock assessments, which will ultimately establish updated ACLs based natively on the new survey designs.

DESCRIPTION OF SURVEY METHODS

Both AL Creel and MS Creel are complementary surveys combining on-site dockside intercept surveys with off-site telephone effort surveys to calculate total landings estimates:

- **Catch Rate Estimation:** Both programs utilize an access point intercept survey with a stratified two-stage design to estimate catch rates. The primary sampling units are clustered by a specific site, day type, and shift when an interviewer is present to survey anglers. The secondary sampling unit is the fishing trip. In addition to collecting trip and harvest data, these surveys also ask questions to identify anglers not captured within the license frame. This information is used to calculate an important adjustment factor to account for off-frame effort, allowing the final estimates to represent the entire fishing population.
- **Effort Estimation:** Total effort is estimated using off-site telephone surveys with stratified element designs. Both states conduct two separate weekly effort surveys:
    - *Private Angler Effort Survey*: Stratifies the state's saltwater fishing license frame by geographic region and endorsement type (e.g., MS stratifies by Coastal Resident, Non-coastal Resident, Non-Resident, and Recreational Offshore Landing Permit Holder) to contact anglers and estimate the total number of angler trips.
    - *Charter Effort Survey*: Draws weekly from the commercial charter boat sample frame to randomly contact charter captains and estimate charter fishing effort.

Total catch estimates (landings and releases) for each recreational sector are the product of the catch rates and total effort values.

CONSIDERATIONS

The peer review panel concluded that the AL Creel and MS Creel survey designs offer equivalent utility compared to current survey programs (i.e., MRIP APAIS-FES, MS Tails n' Scales, and AL Creel) for stock assessments and fisheries management. However, because the designs are more similar to LA Creel, the implementation of AL and MS Creel should facilitate direct comparisons between state fisheries targeting similar stocks and lead to synergies in developing future methodological improvements.

While certification is recommended, based on the outcomes of the peer reviews, **NOAA Fisheries recommends the following considerations be evaluated and addressed by the states over time** to support continuous improvement:

- **Periodic Evaluation of Assumptions:** Assumptions and estimation adjustments (e.g., coverage adjustments) should be periodically evaluated to ensure they remain valid over time.
- **Weighting Adjustments (AL Creel):** Two minor weighting issues should be addressed, including treating refused interviews in the same way as missed trips for the purpose of computing the second-stage weight.
- **Sample Frame Contact Information (MS Creel):** The reviewers flagged that a substantial fraction of the MS license holders in the sampling frame have incomplete and/or inaccurate contact information. This implies an assumption that contactable and non-contactable license holders have similar effort characteristics, which should be explicitly identified in the survey documentation and improved upon in the future.
- **Holiday Exclusions:** The exclusion of state holidays from the sampling frame creates a minor discrepancy between the frame and the target population that should be acknowledged in the program descriptions.

ATTACHMENTS

- AL Creel Documentation
    - AL Creel Peer Review
- MS Creel Documentation
    - MS Creel Peer Review

Alabama Recreational Creel Program Manual

Contents

SALTWATER FINFISH LANDING STATISTICS **2**

Effort Surveys **6**

Private Angler Effort Survey 6

Charter Effort Survey 9

Calculations **11**

AL CREEL DATA DICTIONARY **18**

Dockside Summary Form 18

Dockside Form 19

AL CREEL ESTIMATES TABLES DATA DICTIONARY **21**

Harvest 21

Effort 23

AL CREEL DATA DELIVERY SCHEDULE **24**

AL Creel
SALTWATER FINFISH LANDING STATISTICS

Purpose

The Alabama Creel (AL Creel) is a program designed to provide saltwater recreational fishery information to aid in the management of Alabama's valuable fishery resources. This includes saltwater fishing activities along Alabama's coastal communities such as bays, sounds, rivers, inlets, and nearshore areas, as well as in offshore waters within state and federally managed areas of the Exclusive Economic Zone (EEZ). These are open systems where the only boundary to the species is its habitat requirements.

Methodology

The AL Creel survey is based on the LA Creel survey design, where an on-site dockside survey is combined with off-site telephone surveys in order to calculate total landings estimates for saltwater finfish species across different recreational fishing activities. Data collected through the dockside survey are used to estimate catch rates (catch per angler trip). A dockside sampling weight is calculated as the reciprocal of the probability of selecting a specific site multiplied by the probability of selecting the day-shift combination. This value is then adjusted by multiplying it by the ratio of interviewed trips (or parties) to the total number of trips observed (interviewed plus missed). Refused interviews are excluded from the calculation. The telephone survey is used to estimate total effort (total number of anglers). Total landing estimates for each recreational sector for a certain period of time are simply the product of the landing rate and total effort values.

AL Creel Dockside Survey for Landing Rate Estimation

Site Sample Frame

Dockside survey assignments are only conducted at public sites (i.e., boat launches, marinas, piers, roadside, beaches) utilized by saltwater anglers. Each site is evaluated monthly on the fishing pressure (estimated average number of angler trips per day within 8AM - 8PM) for each fishing activity (Private, Charter, and Shore), Shifts (8AM – 2PM & 2PM – sunset), and for each day type (weekday/weekend). Weekdays are Monday – Thursday and weekend days are Friday – Sunday. Pressure is the monthly average number of angler trips for the day-type, time block and fishing activity type. Eligible fishing trips include the number of interviewed recreational saltwater fishing trips, missed recreational saltwater fishing trips, and recreational saltwater fishing trips that were refused. Eligible fishing trips are totaled and averaged to produce a single pressure value representing the fishing activity for a given month, time shift and type of day. For each fishing activity proportional probabilities are calculated from the total fishing pressure for each site. These probabilities are then averaged across the different fishing activities. The final outcome is two weighting factors (average proportional probabilities) for each site, per month—one for each day type. These weighting factors are used in the assignment selection process (described below).

Sampling Design

The primary sampling unit (cluster) is a specific site, day type, and time shift when an interviewer will be present to survey anglers. Shifts are 8am – 2pm and 2pm – sunset. Day types are Weekday (Monday-Thursday) and Weekend (Friday-Sunday). The secondary sampling unit is the trip type. From here on, the specific site/day/shift clusters are referred to as "assignments." See AL Creel Sampler Manual for detailed interview

procedures. One person from each fishing trip party will be interviewed.

Information collected on Summary Form:

1. Sampler name and ID#.
2. Date
3. Site number
4. Control number (CN) – Control #: A unique 4-digit number issued with each drawn assignment. The first digit indicates the County to which the assignment was given (2 – Mobile or 5 – Baldwin). Digits two and three are the Sample Week for which the assignment was drawn. The last digit is the sequential numbering of assignments drawn for that Sample Week within a county. Control numbers are issued by county. Example: 2502 is the second assignment drawn for County 2 in Sample Week 50.
5. Assignment status – Complete or Incomplete.
6. Start and end times of sampling at site.
7. Vessel activity: number of interviewed, missed, refusals, non-finfish, commercial, non-fishing vessels.
8. Shore activity: number of interviewed, missed, refusals, non-finfish, and commercial.

Information collected during dockside survey:

1. Date of the assignment: year, month, day.
2. Sampler ID#.
3. Control #.
4. Site: Four-digit code associated with sampling location.
5. Time: when interview began in military format.
6. Number of anglers in party.
7. Fishing activity (Private, Charter, Shore) and number of anglers reporting a valid Alabama saltwater fishing license or angler registry for exempt anglers. Charter Vessel registration # (validation purposes).
8. Whether or not trip was participating in a tournament.
9. Area where majority of fishing effort took place (Figure 1).
    i. Inshore – Bay, River, Sound, ICW (0)
    ii. 0-3 miles – Gulf (15)
    iii. 3-9 miles – Gulf (39)
    iv. Greater than 9 miles – Gulf (99)
10. Bottom Type.
    i. Artificial
    ii. Oil/Natural Gas Platform
    iii. Natural Hard Bottom
    iv. Flat Bottom
    v. Don't Know
11. Target species (primary and secondary).
12. Total number of fish in possession (Harvest) for each species (trip total for entire party).
    i. Available harvest (1) – observed harvest of saltwater finfish identified and counted by the sampler. Includes length (mm) and weight (kg) for individual fish.
    ii. Unavailable catch (2) – reported discards and harvest of saltwater finfish identified and

counted by angler.

13. Total number of fish (catch & releases) by type code.
    i. Used for Bait (4) – fish caught and used as bait during the trip. Fish in possession at the time of survey that will be used for bait on a later trip should be Type 1 or 2 as appropriate.
    ii. Other (5) – any fish discarded during the trip or given away before the survey for any reason not covered by codes.
    iii. Thrown back alive (6).
    iv. Thrown back dead / plan to throw away (7).
    v. Eaten / plan to eat (8).
    vi. Eaten by predator (9).

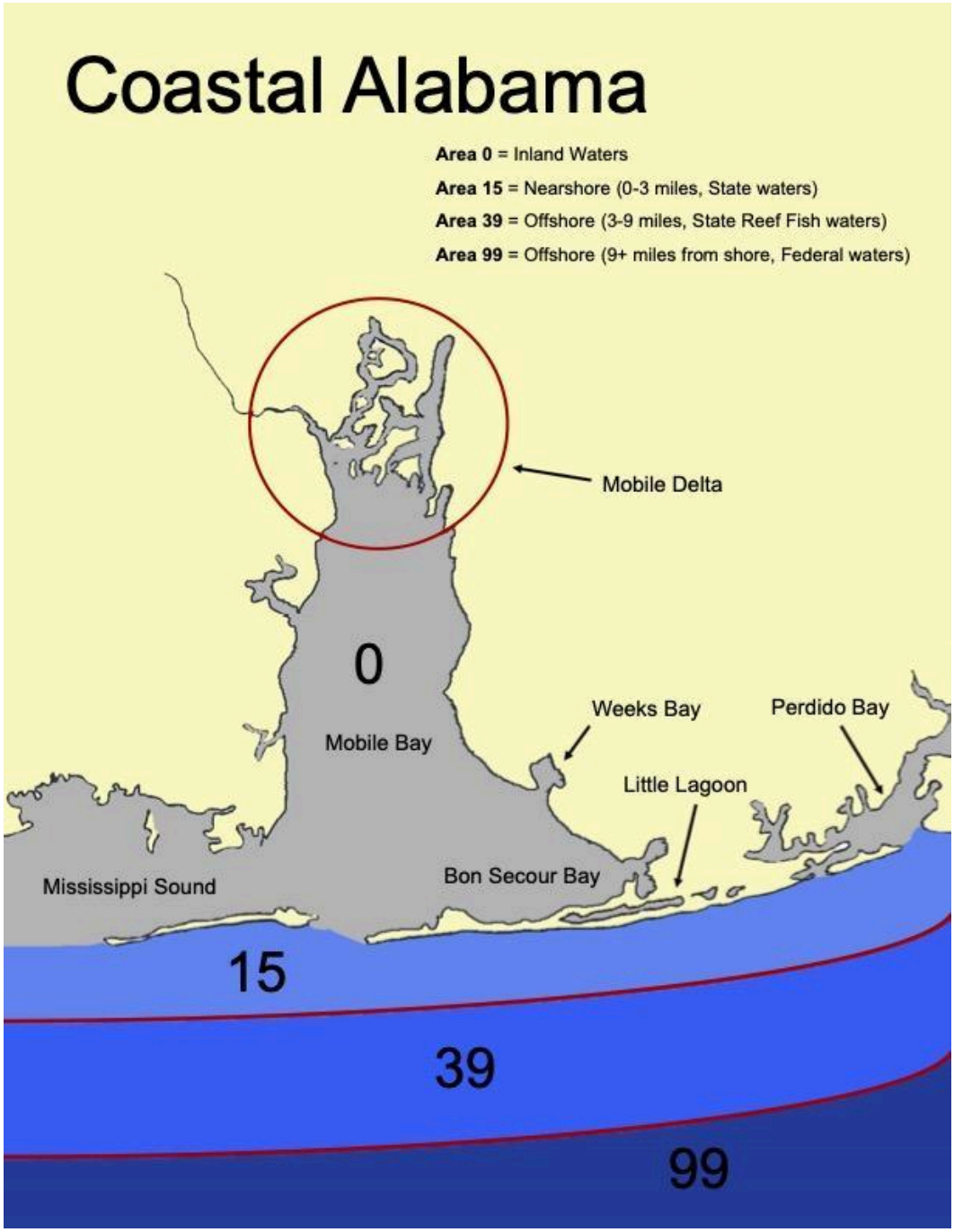

Figure 1. Fishing effort areas and associated codes.

The license question is asked to ascertain the number of anglers not captured within the license frame. Angler's age of 15 and under, 65 and older without an Angler Registry, and unlicensed anglers are assessed by the question. Information is used in the calculation of the private angler license compliance rate.

Missed recreational fishing trips are parties believed to be eligible for the survey but were not approached due to the interviewer surveying other angler/party at the time.

Biological data is recorded dockside as time permits. Specifically, fish lengths and weights shall be obtained. During Red Snapper season, the goal is 30 Red Snapper length samples per activity (charter/private) per week.

Assignment Selection

The number of assignments per month was determined on probabilities of each day-type and fishing activity. Since greater fishing activity occurs on the weekends, assignments are divided so that weekends are drawn more often than weekdays (Table 1).

Table 1. Weekly assignment distribution by Season, Day-Type, and Fishing activity.

Season	**Day_Type Distribution**		**Fishing Activity Distribution**		
	Weekdays	**Weekends**	**PR**	**Shore**	**Charter**
Off peak (Sep – April)	3	5	5	2	1
Peak (May– August)	4	6	6	2	2

Holidays

Most holidays are excluded from the assignment draw process. Excluded holidays (9) include New Year's Day, Martin Luther King Day, Mardi Gras, Easter Sunday, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. These holidays are removed from the annual calendar prior to producing dockside assignment allocations for the given month. As a result, when a holiday falls on a specific day type (e.g., weekday or weekend), the available site/day/time combinations for that day type are reduced, and selection probability is redistributed among the remaining eligible days within that month.

Next, specific sites, dates, and shift times are selected. For each week, sites are randomly selected using a probability proportional to size (PPS) methodology with replacement using average proportional probabilities for each site as the weighting factor. Dates and shift times are randomly selected with replacement for each sub-week. Equal weights are used for AM and PM shifts. Dockside schedules are distributed to staff monthly.

Considerations

Interviewing anglers in-person immediately after they finish their trip is preferred because trained field staff can observe and confirm catch. This removes numerous response issues common in off-site survey designs (recall bias) and assumptions associated with incomplete trip (roving) surveys. Typical access point surveys can have a high cost given the relatively low number of interviews obtained, but the data obtained are high quality (Pollack et al., 1994). Given that only **one angler per fishing party** provides data for the trip (see sampler manual

appendix B), the question list is short. The short interview time should also appeal to anglers and increase participation (reduce refusal rate).

Site selection is optimized through the inclusion of site pressures that are evaluated monthly by fishing activity and day type, where assignment dates are distributed evenly throughout the month and/or seasons. This helps to minimize manpower requirements on a given day, and data lost to weather cancellations or poor fishing conditions (resulting in no interviews). Cancelled assignments are excluded from the estimation process. However, partial assignments due to weather cancellations are included. By weighting the random selection process, the likelihood that observed landing rates are representative of Alabama anglers over time is greatly increased.

The dockside survey portion of AL Creel does not currently sample nighttime anglers or anglers with private fishing access and as such, landing rates will not be included for these angler groups. It is not known if landing rates of nighttime anglers and private access anglers substantially differ from daytime landing rates at public access sites.

If total landing estimates from private access sites are calculated, landing rates from public sites will be used in combination with private effort to determine total private landings. The telephone surveys will account for public vs. private and daytime vs. nighttime differences in effort.

Omitting the target species question would remove a source of prestige bias (anglers stating that only fish harvested were targeted), but since this is a multispecies survey, the issue is raised of when to apply zeroes if a species is not harvested. This survey will ask for primary and secondary target species. This survey assumes that all anglers interviewed had the potential to catch all species observed during the shift of interest, essentially assigning zeroes to trips that did not land a species that was landed by other trips.

Effort Surveys

There are two separate effort surveys being conducted, one for private recreational saltwater anglers (Private Angler Effort Survey) and one for the Charter Boat Captains (Charter Effort Survey). Effort surveys are conducted weekly based off of license frames. Weekly private effort that is reported by anglers is spread across the four regions. Weights are generated by taking the region sum divided the state sum of angler trips. Weekly charter effort that is reported for each vessel trip is spread across two groups; GRFE and non-GRFE trips. Weights are generated by taking the strata trips sum divided the state sum of charter trips. Exceptions to this are tropical weather events and the timing of the event in relation to the sample period of Monday through Sunday. During week of impending weather, calls will continue to be made to access effort of prior week. If a 50% contact rate cannot be achieved, then mean effort estimates from three prior (or rolling average) weeks will be applied to current week. The week following hurricane landfall, calls may be cancelled due to call center logistics or limited dockside surveys being completed within prior week as the tropical weather event approached. This is considered a dead week, and no weekly estimate will be provided.

Private Angler Effort Survey

Angler Sample Frame
All persons possessing an Alabama saltwater fishing license with valid phone numbers on file or angler registry

are included in the private angler effort survey sample frame. The license frame is divided into four region consisting of coastal without a GRFE, non-coastal without a GRFE, non-resident without a GRFE, and all licenses with a GRFE. The frame information includes the angler's name, Alabama recreational saltwater fishing license number, GRFE, and phone number. Email addresses are included in the frame if the license holder opts to enter it at the time of license purchase or provides it during the effort survey for future surveys.

The frame is updated weekly and continually screened to remove unusable phone numbers. Anglers selected in previous week are removed from the current week for random selection. The contact list is based on a phone number and an email is optional. Any license holder without a phone number is excluded. The number of saltwater license holders continually changes throughout the year. The most notable sample frame change during the year is immediately after August 31st when annual recreational licenses expire, where a rapid decrease and subsequent increase in frame size occurs as anglers purchase new licenses.

Sample Design

The angler effort survey sample frame is stratified into 4 regions based on geographic area, license densities, and/or license type (Table 2).

Table 2. 2025 license year plus lifetime licenses. (September 1 , 2024 - August 31, 2025)

Region	Saltwater Licensed Angler Population
Coastal	33,414
Non-coastal	47,846
Non-Resident	35,949
GRFE	82,447

Actual license count changes weekly

Beginning license year 2019, the GRFE was required to possess certain offshore species. The purpose of this stratification is to increase the precision of effort and catch for reef fish anglers. Each week, 900 license holders are included in the call list to contact through email or phone for interviews, distributed uniformly across the four regions (300 contacts for the GRFE region and 200 contacts per remaining region) (Table 3). Emails are initially sent out on the beginning of the call week and given until the next day to respond. If an online survey is not completed then the contact is contacted by phone. For sampling to be considered complete for the week, a total of 450 license holders must complete a survey. A contact is defined as the license holder who completes the survey online or by phone and either responds 'no' to fishing or refuses participation / requests to be removed from the survey. Calling efforts continue until the quota of 50% contact rate is met or calling has reached the cutoff on Saturday.

Information collected during the private angler effort survey:

1. Date(s) angler went saltwater fishing.
2. Fishing activity; shore or boat.
3. If fishing activity is boat, then Private or paid charter recorded.
4. The area from which the majority of fishing activity occurred.
5. Time fishing trip ended.
6. Whether trip ended at a publicly accessible site or a private site.
7. Verify or update email address.
8. During the month of September, additional information is asked during the survey to anglers to

determine if they have a valid Alabama saltwater fishing license and if they have a GRFE.

Call List Selection

The weekly call list of 900 anglers is randomly selected from the sample frame without replacement. Anglers do not appear on the call list two weeks in a row. The list is purposely randomized using random number sorting before calling begins. Calls are made by going through the list until the 450 contact quota is met or the call period expires. This randomization ensures there is no sorting bias that would otherwise occur with this method. By uniformly allocating the weekly call list, the necessary weighting needed to account for disproportional license distribution can be achieved.

Peak Season

Given the drastic increase in fishing activity (May – August) during the Red Snapper season, the number of anglers contacted weekly in the GRFE strata is increased from 300 to 600 in order to improve the precision of private angler GRFE effort estimates (Table 3).

Table 3: Number of recreational anglers with contact information to be supplied to the call center by two-month periods beginning with January.

Season	Proposed Contact List				Totals
	Coastal	Non-Coastal	Out-Of-State	Reef Fish Endorsement (GRFE)[1]	
Jan-Feb	1600	1600	1600	2400	7200
Mar- Apr	1600	1600	1600	2400	7200
May-Jun	1600	1600	1600	4800	9600
Jul-Aug	1600	1600	1600	4800	9600
Sep[2]-Oct	1600	1600	1600	2400	7200
Nov-Dec	1600	1600	1600	2400	7200
TOTALS	9600	9600	9600	24000	52,800

[1] The number of calls to Gulf Reef Fish Endorsements will increase during peak fishing season (May – August).
[2] Potential to reduce call effort during September to 600 per week to achieve 6% of frame calling effort.

Considerations

In 2025 our average contact rate was 46.16% and the range of completion was 27.12% (Christmas week) to 50.45%. By conducting this survey weekly, recall bias is substantially reduced when compared to other telephone surveys. The question list is short, which minimizes costs and appeals to anglers, and is able to provide effort data by drainage basin and public/private access status. Stratifying the call list sample frame ensures that regional differences in avidity are accounted for.

A common problem with call list sample frames is inaccurate contact information resulting in a high number of calls with no successful interviews. While the frame is screened to remove obviously unusable phone numbers, it is not possible to identify all bad numbers *a priori*. This frame is adjusted weekly; removing any unusable number and emails addresses encountered and updating phone numbers and email addresses as given by contacted anglers. Unlicensed anglers are not contacted during the effort survey, meaning observed total angler trips only includes licensed anglers and is an underestimate of effort. This is accounted for by expanding observed effort estimates by AL recreational saltwater license requirement and compliance levels determined from the dockside survey.

AMRD will continue to investigate the effect of license turnover on effort and will modify design if necessary. The most notable change is immediately after August 31st when annual recreational licenses expire and a rapid increase as anglers purchase new licenses. Twenty-seven percent of anglers who buy a license during a license year do so in September. Current calling efforts in September attempts to contact 12% of licensed anglers. The percentage of anglers contacted on a monthly basis drops to below 6% by December. The yearly average is 5.4% of licensed holders are attempted to be contacted for their fishing effort in a given month. Potentially reducing the call effort to 6% of September licensed anglers would reduce calls per week to 600 versus 900 calls per week in September. Discussion above is addressing angler response burn out due to repetitive calls within a month's time(12% of sample frame) and not the number of calls within the sample week.

For effort that is reported by anglers drawn from the GRFE region, the total number of offshore trips will not come from the license frame, but from the GRFE frame. However, the effort estimate generated by GRFE region data is ultimately combined with offshore effort from all other regions to produce one weekly offshore effort for private anglers. Catch rates calculated from dockside data does not distinguish between GRFE and non-GRFE anglers and is applied to the entire weekly offshore effort. GRFE species-specific catch rates are no longer applied to just the GRFE effort but to the combined offshore effort of all private offshore trips.

Charter Effort Survey

Sample Design

All active Alabama commercial party (charter) boat licenses in a given sample period (Mon-Sun) are included in the charter call list, a.k.a. "frame". The charter sample frame is stratified into 2 groups: those possessing a charter GRFE, and those that do not. The purpose of this stratification is to increase the likelihood that offshore charter fishing trips will be obtained from the survey. Charters that take clients out on offshore trips should register for a charter vessel GRFE. Charters that take clients out on inshore trips are encouraged to register for a charter vessel GRFE. Charter captains should register for a recreational GRFE for personal trips, as Charter GRFE will not cover the vessel owner for any private trips taken. GRFE's are valid for the fishing year.

Each week, 10% of the non-GRFE vessels will be contacted and 30% of the GRFE vessels will be contacted to improve the precision of effort estimates for this group. A sample weight for each vessel with a group is calculated as the inverse of the proportion of vessels within each group to all of the vessels (non-GRFE and GRFE vessels combined) available for selection during the selected week. The vessel representative contact list is updated weekly from the National Marine Fisheries Service website to determine all active vessels. In 2024 and 2025, the mean weekly completion rate for surveys was 72.5% and 67.1 % of contacted representatives, respectively. The expiration date for charter licenses is September 30th, meaning the size of this sample frame will continually increase throughout the year.

Call List Selection

The weekly charter call list is randomly selected from the sample frame without replacement. Weekly lists of selected charter vessels, along with the "Alabama – For-Hire Survey Form" for recording survey responses are distributed to staff. A current frame of all licensed vessels, in Excel format, is also provided with the weekly list. Vessels that are selected in a given week are removed from being selected in the subsequent week to minimize survey fatigue. Those vessels are available to be drawn for the next sample week (second week after the original week of selection).

Contacting Selected Vessel Representatives

Up to five phone call attempts per vessel to the designated vessel representative for the selected vessel will be made. Call attempts should be spread out temporally throughout the week. No more than two attempts should be made on the same day. If two attempts are made on the same day, calls will vary between the morning and afternoon. See “AL Creel Charter Call Manual” for detailed interview procedures.

The initial questions verify the contact person and their role as either the captain or the vessel representative. If the response is positive for trips, then for each day secondary questions cover anglers per trip, area primarily fished (if in Gulf waters then relative distance from shore), and if the location of the trip's origination was public or private. A supervisor will periodically listen in on conversations to ensure accuracy.

Alabama - For-Hire Survey Form

Period: **Eligibility:** _____ (EL=Eligible, IN=Ineligible, IA=Inactive, NC=Noncooperative)

Boat Type: **Boat Name:**

Representative Name: **Primary #:** **Secondary #:**

Second Contact Name : **Primary #:** **Secondary #:**

Sampler ID:	Sampler ID:	Sampler ID:	Sampler ID:	Sampler ID:
Date:	Date:	Date:	Date:	Date:
Time:	Time:	Time:	Time:	Time:

Call Back	Call Back	Call Back	Call Back	Call Back
1 ☐ No Answer	1 ☐ No Answer	1 ☐ No Answer	1 ☐ No Answer	1 ☐ No Answer
2 ☐ Voicemail	2 ☐ Voicemail	2 ☐ Voicemail	2 ☐ Voicemail	2 ☐ Voicemail
3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.
4 ☐ Not available	4 ☐ Not available	4 ☐ Not available	4 ☐ Not available	4 ☐ Not available
No Call Back	**No Call Back**	**No Call Back**	**No Call Back**	**No Call Back**
5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number
6 ☐ Communication problem	6 ☐ Communication problem	6 ☐ Communication problem	6 ☐ Communication problem	6 ☐ Communication problem

Date	Day of Week	Trip No.	# of anglers	Area	Access Site
5/19/2025	MON	1			
5/19/2025	MON	2			
5/19/2025	MON	3			
5/19/2025	MON	4			
5/20/2025	TUE	1			
5/20/2025	TUE	2			
5/20/2025	TUE	3			
5/20/2025	TUE	4			
5/21/2025	WED	1			
5/21/2025	WED	2			
5/21/2025	WED	3			
5/21/2025	WED	4			
5/22/2025	THU	1			
5/22/2025	THU	2			
5/22/2025	THU	3			
5/22/2025	THU	4			
5/23/2025	FRI	1			
5/23/2025	FRI	2			
5/23/2025	FRI	3			
5/23/2025	FRI	4			
5/24/2025	SAT	1			
5/24/2025	SAT	2			
5/24/2025	SAT	3			
5/24/2025	SAT	4			
5/25/2025	SUN	1			
5/25/2025	SUN	2			
5/25/2025	SUN	3			
5/25/2025	SUN	4			

Total Recreational Saltwater Fin

Fishing Trips with Paying Passengers _____

Comments:

Database Comments:

No. of Attempts: _____

Interview Conducted by

ID#: _____

Interview Status (to be completed when telephone contact is made):

1 ☐ Complete Interview
2 ☐ Refusal
3 ☐ Ineligible
4 ☐ Unable to Contact
5 ☐ Inactive

Area Codes
0 = Inshore
15 = Gulf, 0-3 miles
39= Gulf, 3-9 miles
99 = Gulf, more than 9 miles

Access Site Codes
1 = Public
2 = Private

Figure 2. AL Creel For-Hire Survey Form

Considerations

For effort that is reported by anglers drawn from the GRFE region, the total number of offshore trips will not come from the license frame, but from the GRFE frame. However, the effort estimate generated by GRFE region data is ultimately combined with offshore effort from all other regions to produce one weekly offshore effort for private anglers. Catch rates calculated from dockside data does not distinguish between GRFE and non-GRFE anglers and is applied to the entire weekly offshore effort. GRFE species-specific catch rates are no longer applied to just the GRFE effort but to the combined offshore effort of all private offshore trips.

Given the September 30th license expiration date, this frame will expand throughout the year but will likely not consist of more than 400 vessels before years end. While sampling the entire frame weekly would be preferred due its small size, past experience has shown that contacting more than 20% of charter captains weekly decreases participation. The GRFE /non- GRFE holder strata were chosen since this is expected to be the primary source of avidity differences within the charter call list sample frame however, stratification may be modified once more data become available.

Calculations

The calculations described below determine weekly estimates for landing rate, effort, and total landings for any given species in any particular fishing activity. These estimates can be expanded for any period of interest (month, season, or year). All of the calculations are completed in SAS 9.4.

Landing Rate Estimation
The equations and estimates for effort were obtained from the Proc Survey Means section of SAS Institute Inc. 2014.

For a stratified cluster sample design with sampling weights, the sample can be represented as $n\ x\ (P+1)$ matrix that looks like the following:

$$(\boldsymbol{w}, \boldsymbol{Y}) = \left(w_{hij}, \boldsymbol{y}_{hij}\right) = \left(\ w_{hij}, y_{hij}^{(1)},\ y_{hij}^{(2)}, \ldots,\ y_{hij}^{(P)}\right)$$

Definitions and Notation for Landing Rate

h=1,2,…,*H* is the stratum index (day-type)

i=1,2,…n_h is the cluster index (site-day-shift) within stratum *h*

j=1,2,…m_{hi} is the unit index (interview) within cluster I of stratum h

$\sum_{h=1}^{H}$ $\sum_{i=1}^{n_h}$ $\sum$ m_{hi} is the total number of observations (interviews) in the sample

n_h: is the number of clusters (site-days-shifts) per strata

$\boldsymbol{y}_{hij} = (y^{(1)}_{hij}, y^{(2)}_{hij}, \ldots, y^{(P)}_{hij})$ are the observed values of analysis variables (number of fish and anglers) for unit *j* in cluster *i* of stratum *h*

w_{hij} = are the assignment weights within cluster *i* of stratum *h*.

x_{hij} = are the values for the variable of interest (i.e. total number of anglers)

f_h : is the sampling rate for stratum *h*, which is the fraction of clusters (site-days-shifts) selected for the sample

For private and charter anglers, species landing rates are derived from equation [1]:

$$Mean\ Angler\ Harvest\ Rate = \frac{\#\ of\ Fish\ Harvested\ by\ Party}{Total\ \#\ of\ Anglers\ in\ Party}$$

Let y_{hij} represent the value of the variable for total number of fish landed by the j^{th} party in cluster *i* in the h^{th} stratum. Let x_{hij} represent the value of the variable for total number of anglers in the j^{th} party in cluster *i* in the h^{th} stratum. w_{hij} is the sampling weight for cluster of stratum *h*. Then equation [3] calculates the landing rate (HR) for a single species in a period (week):

$$\hat{HR} = \frac{\sum_{h=1}^{H}\sum_{i=1}^{n_h}\sum_{j=1}^{m_{hi}} w_{hij}\, y_{hij}}{\sum_{h=1}^{H}\sum_{i=1}^{n_h}\sum_{j=1}^{m_{hi}} w_{hij}\, x_{hij}} \qquad [2]$$

The variances of this ratio estimate were calculated using a Taylor series expansion method. This method obtains a linear approximation for the estimator and then uses the variance estimate for this approximation to estimate the variance of the estimate itself. The variance calculation of this landing rate ratio is as follows:

$$\hat{V}\left(\hat{HR}\right) = \sum_{h=1}^{H} \hat{V}_h(\hat{HR})$$

For n_h>1:

$$\hat{V}_h\left(\hat{HR}\right) = \frac{n_h(1-f_h)}{n_h-1}\sum_{i=1}^{n_h}(g_{hi} - \qquad [4]$$

where:

$$g_{hi} = \frac{\sum_{j=1}^{m_{hi}} w_{hij}\,(y_{hij} - x_{hij}\hat{HR})}{\sum_{h=1}^{H}\sum_{i=1}^{n_h}\sum_{j=1}^{m_{hi}} w_{hij}\, x_{hij}} \qquad [5]$$

and:

$$\overline{g}_h = \frac{\sum_{i=1}^{n_h} g_{hi}}{n_h} \qquad [6]$$

Considerations

The standard PSU-only variance approximation does account for both among-PSU and within-PSU variation, but not in an obvious way and not in an unbiased way. The estimator only uses the empirical variation among PSUs, but the theoretical variation among PSUs and within PSUs is included in this empirical variation. Under mild conditions on the design, the bias of the PSU-only variance estimator is extremely small.

Effort Estimation

The equations and estimates for effort were obtained from Cadima et al. 2005. Effort estimates are calculated both statewide and for each basin.

Definitions and Notation for Effort:

N: is the total population of licensed anglers statewide

N_h: is the population total of licensed anglers found within each stratum (Region)

n_h: is the total number of anglers interviewed within each stratum (Region)

E: is the estimated effort (number of angler trips) statewide

E_h: is the estimated effort (number of angler trips) within each stratum (Region)

e_h: is the estimated mean effort (number of angler trips) per angler

e_{hi}: is the estimated effort (number of angler trips) for a specific angler

The effort survey is a stratified random sampling design within each period (analysis). Thus, the following calculations are used to calculate the observed number of angler trips for each stratum (i.e. Region), and the total observed number of angler trips for the total population:

$$E_h = N_h * \frac{e_h}{n_h} \quad [7]$$

$$E = N * \sum_{h=1}^{H} \frac{N_h}{N} * \frac{e_h}{n_h} \quad [8]$$

To calculate variance for the total number of angler trips, you first calculate the estimated variance of each stratum, and then sum the variances for each stratum to get the estimated total variance for the population:

$$\hat{V}_h\left(\hat{E}_h\right) = N$$

$$\hat{V}\left(\hat{E}\right) = \frac{\sum_{h=1}^{H} N_h^2\left(1-\frac{n_h}{N_h}\right)\frac{s_h^2}{n_h}}{}, \text{ where } \ldots s_h^2 = \frac{\sum_{i=1}^{n_h}\left(e_{hi}-\bar{e}_h\right)^2}{n_h-1} \quad [10]$$

To account for unlicensed angler effort, the license compliance rate is calculated using data collected during the access point survey:

[11]

$$Private\ Angler\ License\ Compliance\ Rate = \frac{Total\ \#\ of\ Anglers\ in\ Party\ with\ a\ License}{Total\ \#\ of\ Anglers\ in\ Party}$$ [12]

$$Charter\ Guide\ License\ Compliance\ Rate = \frac{Total\ \#\ of\ Captains\ with\ a\ License}{Total\ \#\ of\ Captains\ Interviewed}$$ [13]

$$\text{GRFE } License\ Compliance\ Rate = \frac{Total\ \#\ of\ Captains\ or\ Anglers\ with\ a\ \text{GRFE}}{Total\ \#\ of\ Captains\ or\ Anglers\ Interviewed}$$

The variance calculation of this ratio is the same as written above in the landing rate estimation section, with the exception being that x_{hij} now represents the value for total number of anglers in the party with a license (or number of captains) for the j^{th} member in cluster i in the h^{th} stratum.

Using the license compliance rates, the observed total number of angler trips is expanded into a new total number of angler trips:

$$Expanded\ Total\ \#\ of\ Angler\ Trips = \frac{Observed\ Total\ \#\ of\ Angler\ Trips}{License\ Compliance\ Rate}$$ [14]

The calculation of this ratio and its variance is made using a first-order Taylor series approximation of random variables X (total number of angler or charter trips) and Y (license compliance rate). Suppose one wants to estimate:

$$g(\mu_x, \mu_y) = \frac{\mu_x}{\mu_y}\ where\ E(\bar{X}) = \mu_x\ and\ E(\bar{Y}) = \mu_y$$ [15]

Then the first-order Taylor approximation gives:

[16]

$$\hat{g} = \frac{\bar{X}}{\bar{Y}}$$

[17]

$$V(\hat{g}) = \left(\frac{\mu_x}{\mu_y}\right)^2 \left[\frac{V(\bar{X})}{\mu_x^2} + \frac{V(\bar{Y})}{\mu_y^2} - 2\frac{Cov(\bar{X},\bar{Y})}{\mu_x \mu_y}\right]$$ [18]

Since X and Y are independent random variables, the covariance $Cov(X, Y)$ is equal to zero, thus equation [18] simplifies to:

$$V(\hat{g}) = \left(\frac{\mu_x}{\mu_y}\right)^2 \left[\frac{V(\bar{X})}{\mu_x^2} + \frac{V(\bar{Y})}{\mu_y^2}\right]$$

Since the license compliance rate is calculated from the on-site access survey, they can be analyzed separately by species of interest, fishing activity (private, charter, shore) and fishing area (inshore, offshore). With the expanded total number of angler trips being a function of the license compliance rate, this also means that the expanded total number of angler trips can be calculated separate for each species, fishing activity, and fishing area.

Considerations
Total Landings Estimation
The equations and calculations for estimating total landings were obtained from Pollack et al. 1994.

The estimate of total landings is the product of the estimated effort and the estimated landing rate. Equation [19] can be used to calculate observed or expanded total landings estimates, using observed or expanded effort estimates, respectively:

$$Total\ Landing = Effort * Harvest\ Rate$$

or: $\hat{H} = \hat{E} * \hat{HR}$ [20]

The estimated variance of the estimated total landing is calculated using a modified version Goodman's Exact Variance of Products (Goodman 1960, Walter and Ortiz 2012):

$$\hat{V}(\hat{H}) = \hat{E}^2 \hat{V}(\hat{HR}) + \hat{HR}^2 \hat{V}(\hat{E}) - \hat{V}(\hat{E})\hat{V}(\hat{HR})$$ [21]

Quality Control/Quality Assurance

All interviewers will be biologists trained in fish identification, who have passed a training course in AL Creel field procedures. Unannounced visits are made by a trained observer to view the interviewer performing his/her assignment. Interviewers are expected to meet the following minimum criteria:

- ✔ Interviewers must follow protocols as outlined in the AL Creel Sampling Protocol
- ✔ Be at the assigned site at the assigned starting time
- ✔ Clothing must include a shirt with AMRD logo
- ✔ If caps are worn, they must have AMRD logo
- ✔ Shoes must be closed toe (Crocs© are not acceptable)
- ✔ Have a time piece (watch, cell phone, etc.)
- ✔ Have appropriate fish identification book(s)
- ✔ Conduct must be professional and courteous
- ✔ Field fish identifications must be correct

Field forms are reviewed by Supervisors, and both the original data on the field form, and the data entered into electronic databases will be validated. Once field forms are received by supervisor, quality control checks are performed by comparing intercept responses on the field form with the intercept data that was entered electronically. Responses to each question are compared to ensure that each intercept interview data was entered consistently.

Data management attempts to correct any transposition errors and/or inconsistencies prior to running estimate calculations. If discrepancies in data arise, the interviewer is contacted for further explanation, the validity of the data discussed, and if necessary, the interviewer is corrected. Interviewers are regularly checked while at a site for compliance with operating procedures. Interviewers are observed for a significant period of the assignment to document their knowledge of different situations that may arise. Evaluations are documented through the AL Creel QA/QC form.

AL Creel QAQC Form

Interviewer Name/ID#: _____ Announced QC? YES NO

Date: _____ Site Name: _____ CN: _____

QC Representative Name/ID#:

Each item 5 points, 15 points possible

1. Is the interviewer wearing AMRD clothing? YES NO
2. Did the interviewer properly screen anglers? YES NO NA
3. Did the interviewer conduct survey accordingly? YES NO NA

QAQC Representative's Comments:

Interviewer Signature: _____ _____ out of 15 points

= _____%

QC Rep. Signature: _____

Literature Cited

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AL CREEL DATA DICTIONARY

Dockside Summary Form

Name	Type	Length	Format	Description
id	Long Integer	4		Access assigned ID upon entry into database
sampler_id	Long Integer	4		Identification code of sampler
year1	Short Text	4	$	Year of Interview
month1	Short Text	2	$	Month of Interview
day1	Short Text	2	$	Day of Interview
control	Short Text	4	$	A unique 4-digit number issued with each drawn assignment
time_block	Short Text	2	$	Time period assignment is to be conducted (8am-2pm is considered A.M. and 1400-sunset is considered P.M.)
site	Short Text	4	$	Four-character code of site where interviews were collected (matches APAIS site codes)
status	Short Text	2	$	Assignment status indicating complete or incomplete (1 or 2).
comment	Short Text	2	$	Two-digit code associated with the reason for leaving the sampling site before the end of the six-hour assignment time block, or the end of sampling time.
start1	Long Integer	4		Military time when sampler leaves assigned site.
end1	Long Integer	4		Military time when sampler returns to assigned site.
start2	Long Integer	4		Military time when sampler leaves assigned site.
end2	Long Integer	4		Military time when sampler returns to assigned site.
start3	Long Integer	4		Military time when sampler leaves assigned site.
end3	Long Integer	4		Military time when sampler returns to assigned site.
start4	Long Integer	4		Military time when sampler leaves assigned site.
end4	Long Integer	4		Military time when sampler returns to assigned site.
vsl_int	Long Integer	4		Total number of recreational finfishing vessels interviewed.
vsl_miss	Long Integer	4		The total number of vessels, believed to be eligible (recreationally finfishing), that left the site without being interviewed.
vsl_ref	Long Integer	4		Total number of recreational finfishing vessels interviewed who refused to participate in the survey.
vsl_non_fin	Long Integer	4		Total number of fishing vessels interviewed that were determined not to be saltwater finfishing but finfishing for freshwater finfish or shellfish.
vsl_com	Long Integer	4		Total number of fishing vessels interviewed that were used for commercial fishing purposes.
vsl_non_fish	Long Integer	4		Total number of vessels interviewed that were determined not to be fishing.
shore_int	Long Integer	4		Total number of recreational shore finfishing parties interviewed.

shore_miss	Long Integer	4		Total number of recreational shore fishing parties who are determined to have been saltwater fishing but were not interviewed.
shore_ref	Long Integer	4		Total number of recreational shore fishing parties interviewed who refused to participate in the survey.
shore_non_fin	Long Integer	4		Total number of shore fishing parties interviewed that were determined not to be saltwater finfishing but fishing for shellfish.
shore_com	Long Integer	4		Total number of shore fishing parties interviewed that were fishing for commercial purposes.
shore_non_fish	Long Integer	4		No longer collected. Total number of shore fishing parties interviewed that were determined not to be fishing.
Time_Stamp	Short Text	30	$	Time stamp assigned to records entered in database

Dockside Form

Name	Type	Length	Format	Description
obs_record	Long Integer	4		Access auto assigned obs_record upon entry into database
year1	Short Text	4	$	Year of Interview
month1	Short Text	2	$	Month of Interview
day1	Short Text	2	$	Day of Interview
sampler_id	Long Integer	4		Identification code of sampler
control	Short Text	4	$	Four-digit control number
site	Short Text	4	$	Four-character code of site where interviews were collected (matches APAIS site codes)
time	Double	8		Military time
anglers	Long Integer	4		Number of anglers on reporting vessel
mode	Short Text	1	$	Indicates the fishing activity (1= Private, 3=Shore, 4=Charter)
rec_lic	Long Integer	4		The total number of anglers who report holding a current recreational Alabama saltwater fishing license (includes lifetime license holders).
rec_grfe	Long Integer	4		The total number of anglers in the interview party that claim to have a valid GRFE.
vessel	Short Text	8	$	Vessel registration number of charter vessel.
ch_lic	Short	1	$	Yes or No if the captain has a license (1=Yes or 2=No)

	Text			
ch_grfe	Short Text	1	$	Yes or No if the captain has a GRFE (1=Yes or 2=No)
tournament	Short Text	1	$	Yes or No if the party was or is participating in a tournament that day (Y=Yes or N=No)
effort	Short Text	2	$	Area where the majority of fishing effort was conducted (0=Inshore, or Gulf: 15=0-3 miles, 39=3-9 miles, 99=greater than 9 miles)
bottom	Short Text	1	$	Structure or bottom type where most of the fishing occurred (A=artificial, P=Oil/Natural Gas Platform, N=Natural Hard Bottom, F=Flat Bottom, D=Don't Know)
target_1	Short Text	6	$	Primary target species (Six-digit ITIS fish identification code)
target_2	Short Text	6	$	Secondary target species (Six-digit ITIS fish identification code)
u_species (1-10)	Short Text	6	$	Unavailable catch reported, identified and counted by angler. Recorded by six-digit ITIS fish identification code
u_fish (1-10)	Long Integer	4		Number of fish reported caught by the party
u_type (1-10)	Short Text	1	$	Type code describes disposition of unavailable catch (4=used for bait/plan to use for bait, 5=other, 6=Thrown back alive/legal, 7=Thrown back dead/plan to throw, 8=Eaten/plan to eat), 9= Eaten by predator
a_species (1-25)	Short Text	6	$	Available harvest of finfish that are identified and counted by the sampler. Recorded by six-digit ITIS fish identification code
a_fish (1-25)	Long Integer	4		Number of fish counted by sampler
Length (1-25)	Long Integer	4		Length of first measured fish matching ITIS code in field 'a_speceis1'
Weight (1-25)	Double	8		Weight of first measured fish in 'length1'
a_type (1-25)	Short Text	1	$	Type code describes disposition of available catch (4=used for bait/plan to use for bait, 5=other, 7=Thrown back dead/plan to throw, 8=Eaten/plan to eat)
Time_Stamp	Short Text	32	$	Time stamp assigned to records entered in database

AL CREEL ESTIMATES TABLES DATA DICTIONARY

Dockside

Field Name	Description
SamplePeriod	Same as sample week in MRIP
SampleYear	Year
ControlNumber	Control Number of the assignment. Unique within a month/year.
AssignDate	Date of the assignment
AssignTimeOfDay	Either a morning (AM) or afternoon (PM) assignment
AssignmentStatus	Assignment was completed or incomplete
TotalTrips	Total number of trips for that assignment (similar to the tally)
TotalParties	Total number of parties missed during an assignment
Site_Code	Site Code (same as MRIP)
Site_Name	Name of site
Interview_id_Num	Interviewer ID (same as MRIP)
Comment	Comments about the assignment; 6:Couldn't find site, 8:Asked to leave, 12:Site closed after hours, 13:Site closed other, 14:Site unsafe during sampling, 15:No activity, darkness, 16:Departed early(sever illness, injury, other, 17:inclement weather
DataEntryMethod	Denotes if the assignment was entered via tablet or DMS (access database)
Type	Week or Weekend assignment
TripNumber	Number of the trip interviewed during the assignment
Activity	1:Private Inshore, 2:Shore, 3:Private Offshore, 4:Charter
Area_Id	Number code associated with body of water name
Area_Name	Area fished description (body of water name)
Captain_LicEntityId_Ref	Charter Captain License distinct number (not a license number)
Tournament	Y/N- was it a tournament

NumberAnglers	Number of anglers on interviewed trip
LicensedAnglers	Number of licensed anglers on interviewed trip
NumberWithGRFE	Number of anglers on interviewed trip with a Gulf Reef Fish Endorsement (GRFE)
Prime1	ITIS Code for primary target species
Prime2	ITIS Code for secondary target species
SpeciesCount	Total number of species type by observation type
ITIS_Code	ITIS code for species
Common_Name	Common name of species
AmountCaught	Number of fish caught for that particular species and observation type
ObservationType	1:Counted, 2:Reported, 4:Bait, 5:Other,6:Thrown back alive, 7:Thrown back dead/Plan to throw away, 9:Eaten by predator

Harvest

Field Name	Description
status	Status of the estimate value, preliminary or final
Year	Sample Year
beg_date	Beginning date of the period for which the estimate is being generated
end_date	Ending date of the period for which the estimate is being generated
period	Work week of the year
wave	Two month period matching MRIP waves (6)
wave_f	Name of the two months contained in the wave
sub_reg	The MRIP sub region for which the estimate is being generated
sub_reg_f	Name of the MRIP sub region
st	Number code associated with state
st_f	Abbreviation of the state
sp_code	ITIS code of species for which the estimate is being generated
common	Name of the species matching the ITIS code
mode_fx	Number associated with MRIP mode for which the estimate is being generated
mode_fx_f	Name of the MRIP mode
area_x	Number associated with MRIP area for which the estimate is being generated
area_x_f	Name of the MRIP area
estclaim	The estimated number of fish that were harvested based on fish that were observed and counted by AMRD interviewers
estclvar	The variance associated with estclaim
reported	The number of harvested fish that were identified and counted by angler
reptvar	The variance associated with reported
AL_Landing	The total estimated number of fish harvested combining both estclaim and reported

	estimates
AL_LanVar	The variance associated with AL_Landing
alivedisc	Total estimated fish discarded alive.
alivediscvar	variance associated with live discards.
deaddisc	Total estimated fish discarded dead.
deaddiscvar	variance associated with dead discards.
predator	Total estimated fish discarded eaten by predator.
predatorvar	variance associated with discards eaten by predator.
bait	Total estimated fish discarded as bait
baitvar	variance associated with bait
other	Total estimated fish discarded as other
othervar	variance associated with other
AL_Discard	Total estimated number of fish discarded. Sum of alive discards, dead discards, predator, bait, and other.
AL_DisVar	Sum of variance for total discard.

Effort

Field Name	Description
status	Status of the estimate value, preliminary or final
Year	Sample Year
beg_date	Beginning date of the period for which the estimate is being generated
end_date	Ending date of the period for which the estimate is being generated
Period	The dates from “beg_date” to “end_date”
Wave	Two months, matching MRIP waves (6); Jan-Feb, Mar-Apr,…
Wave_f	Name of the two months contained in the wave
Mode	AL Creel fishing activity type
mode_fx	Number associated with MRIP mode for which the estimate is being generated
mode_fx_f	Name of the MRIP mode
area_x	Number associated with MRIP area for which the estimate is being generated
area_x_f	Name of the MRIP area
sub_reg	The MRIP sub region for which the estimate is being generated
sub_reg_f	Name of the MRIP sub region
st	Number code associated with state
st_f	Abbreviation of the state
Fish_Activity	Designates the AL Creel fishing activity of the estimate
area	area – Alabama defined area fished
Effort	Number of angler trips estimated to have been taken
Var_Effort	Variance associated with Effort

Expanded_Effort	Number of angler trips estimated to have been taken expanded by the observed non-compliance rates
Expanded_Effort_Var	Variance associated with Expanded_Effort

AL CREEL DATA DELIVERY SCHEDULE

AL Creel Data is delivered in waves approximately 1 month after then end of the wave.

Wave	Months	Delivered by
1	January-February	1-Apr
2	March-April	1-Jun
3	May-June	1-Aug
4	July-August	1-Oct
5	September-October	1-Dec
6	November-December	1-Feb

AL Creel
Sampler Manual

Version 4 – Updated 05/21/2025

January 2025

Table of Contents

Program Background 1
AL Creel Survey Method 2
Dockside Survey 2
  Public Access Sites 2
  Assignment Allocations 3
  Sampler Responsibilities 4
Regulations 5
  Alabama Fishing License 5
    Gulf Reef Fish Endorsement (GRFE) 5
  Federal Permits 6
    Atlantic Highly Migratory Species (HMS) Permit 6
    Gulf of Mexico Charter Headboat for Reef Fish (RCG) 6
Overview of the AL Creel Dockside Survey 6
  Data Recording and Assignment Preparation 6
  Interview Priorities 7
  Fishing Trip 7
  AL Creel Dockside Survey 7
    Interviewing Fishing Parties 7
    Fishing Activity 9
    AL Creel Assignment Summary Form 14
Effort Surveys 17
  Private Angler Effort Survey 17
  Charter Effort Survey 18
Quality Control (QC) 18
  Sampler QC 18

Program Background

The Alabama Department of Conservation and Natural Resources (ADCNR) / Marine Resources Division (AMRD) consists of two sections: Fisheries and Enforcement. These units collaborate to manage marine fishery resources through research, enforcement, and education, ensuring maximum benefit for both the resources and the citizens of Alabama, which aligns with our mission statement.

A fishery refers to areas where fish are caught by recreational and/or commercial fishermen. To ensure the sustainability and protection of these fisheries, specific management practices are put in place. Fisheries resource management includes data collection, analysis, decision-making, and the development of regulations to enforce conservation measures for fishing activities. Effective management techniques are vital for preserving the health and sustainability of fish populations and their ecosystems.

To understand the resource fully, it is crucial to gain insight into the users of the fishery. Fishery-dependent monitoring programs are established to collect data from both commercial and recreational fishermen, allowing for a better understanding of catch and fishing effort in both sectors. This information is then used to estimate the number and/or pounds of fish caught over a given timeframe.

Grasping the distinctions between key terms is crucial for analyzing catch per unit effort (CPUE), harvest per unit effort (HPUE), or landings of a particular resource. Below are definitions of these terms:

- **Fishing Effort:** The time spent fishing for a specific species.
- **Catch:** The number of fish caught per trip including observed harvest, angler reported harvest, or releases.
- **Harvest:** The total number of fish harvested, which includes observed harvest, reported harvest, or released dead.
    - **Observed Harvest:** Fish caught and brought back to the dock or shore for identification and quantification by samplers.
    - **Reported Harvest:** Fish that are considered removed from the fishery (e.g., released dead, used for bait, consumed by predators, or planned for consumption) as identified by the angler, not by the sampler.
- **Landings:** Estimates of harvested fish.
- **Party:** number of anglers on a vessel or a distinct group of anglers (usually they know of each other) within a large group of anglers.

Commercial landings in Alabama are documented through the Trip Ticket program, which requires seafood dealers to collect information from commercial fishermen to submit including the species landed, the areas where the fish were caught, and quantities and prices paid for seafood purchased from the fisherman.

Typically, recreational estimates of catch and harvest are determined through random dockside surveys at public access-points and estimates of fishing effort are developed through email/phone surveys. The AL Creel program aims to gather catch and effort information from Alabama saltwater anglers from which timely and accurate catch and harvest estimates are produced, facilitating informed management decisions for our fisheries.

AL Creel Survey Method

The AL Creel program utilizes separate surveys to gather catch and effort data. To generate effort estimates, randomly selected anglers from Alabama's saltwater license database are contacted weekly by email or telephone to gather fishing trip information for the prior week. The second survey is a dockside survey of saltwater anglers designed to capture catch per trip and biological information. Data from the completed interviews is used to calculate average catch and harvest per angler. The effort data is multiplied by the catch data to determine state-wide estimates of catch and harvest.

Dockside Survey

Public Access Sites

The AMRD maintains a list of publicly accessible fishing sites in Mobile and Baldwin Counties. Site information includes the following.

1. Site name
2. Physical address (if known)
3. GPS coordinates (in decimal degrees to five places, e.g., 29.33533, -90.84421)
4. Contact name, phone number, and email (if applicable)
5. Operating hours (if applicable)
6. Mode(s) of fishing present and estimated pressures of angler activity
7. Assigned unique Site Identification (ID) Number

Possible fishing modes recorded at each site include private vessel (Private), charter vessel (Charter), and shore (Shore) activities. Each mode is associated with a value of estimated fishing pressure by month and day type. Pressure represents the total number of eligible parties expected at a given site and are assigned for both weekdays (Monday–Thursday) and weekends (Friday–Sunday). Site pressure values are developed using data from prior surveys, site canvassing, and/or local knowledge.

Examples of Assigning Pressures:

Example 1:
From Monday to Thursday during a typical June week, if one charter trip is made during the four-day period from Site A, the charter pressure would be recorded as 1.

Example 2:
From Friday to Sunday in a typical March week, if six private boat trips and ten shore parties are usually observed at Site B each day, the pressure values would be six for private fishing and ten

for shore fishing. A pressure value of "0" should only be used when fishing activity is entirely absent for a given mode.

The site list is regularly maintained and updated by AMRD management staff. Updates can include new sites, revisions to existing sites, or changes in fishing pressures. Field staff should notify their supervisor of any new sites, site closures, or discrepancies to facilitate updates. Updates to the site list should be made prior to the 5th of the month, the date when assignments are drawn for the following month.

Occasionally, samplers may be issued assignments at sites that are closed. If a sampler has an assignment at a closed site, the sampler should notate the appropriate comment code on the assignment summary form, end the assignment, and notify an AL Creel supervisor. A site is considered closed if it has signage, barricades, or similar measures to restrict or prevent access by recreational anglers.

Assignment Allocations

Assignments for the AL Creel program are organized by sample weeks, which consist of a Monday to Sunday period. Depending on the calendar year there will be either 52 or 53 sample weeks in a year. Each assignment draw encompasses four or more sample weeks, with a structure that favors sampling on weekend days over weekdays. Typically, there are twice as many assignments on weekends (Friday to Sunday) compared to weekdays (Monday to Thursday), reflecting the higher recreational fishing activity during weekends (see Table 1).

Table 1. The number of assignments drawn per Sample Week.

Season	Day_Type Distribution		Fishing Activity Distribution		
	Weekdays	Weekends	PR	Shore	Charter
Off peak (Sep – April)	3	5	5	2	1
Peak (May– August)	4	6	6	2	2

Most holidays are excluded from the assignment draw process. Excluded holidays (9) include New Year's Day, Martin Luther King Day, Mardi Gras, Easter Sunday, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Catch is relatively stable across day types and may decrease during days on increased activity.

Site assignments are divided into two time shifts: the AM shift runs from 8:00 AM to 2:00 PM, and the PM shift is from 2:00 PM to official sunset. Official sunset time from NOAA is provided on the sampler assignment schedule. Samplers are expected to remain on-site for the entire duration of the assignment unless safety becomes an issue. If boats are still out at sunset and staff feel comfortable staying for approximately 30 minutes past sunset, they are encouraged to remain on site to interview potential returning anglers. However, this is not a requirement, especially if the site is inactive or unsafe after sunset.

Once assignments are drawn for the month, they are organized on a calendar that includes the date, site name, time shift, and control number, and then distributed to staff a week before the new month begins. It's crucial for samplers to remember that dockside surveys cannot be rescheduled; if a sampler misses an assignment, it will be marked as canceled by a supervisor. Let your supervisor know as soon as possible if you are unable to complete an assignment so that alternative samplers can be contacted for availability.

Samplers should regularly check their schedules to ensure they arrive at their assigned sites on time and stay aware of weather and traffic conditions on assignment days. In cases of severe weather events (such as hurricanes or major cold fronts), supervisors may cancel assignments in advance. If a thunderstorm occurs while a sampler is on site, they should seek shelter and complete their assignment within the scheduled time, provided it is safe to do so.

Sampler Responsibilities

Samplers must be at the correct site no later than the start of the assignment time shift and remain on site until the end of the assignment time shift, regardless of the level of fishing activity or until the site becomes unsafe. While samplers are encouraged to be on site a few minutes early, angler interviews should only occur during the assignment time shift. Any anglers encountered before or after the assignment time shift should not be recorded on the AL Creel Dockside Survey Form. If a fishing party arrives at the site a minute before the assignment's end time, the party should be recorded in the appropriate fishing party tally and the party can be approached for an interview. A fishing party that arrives before or after the assignment begins or ends, even one minute before/after the shift times, cannot not be surveyed or included in the tally. Statistical calculations are based on the number of parties observed within a time shift. Including parties encountered outside the time shift could negatively affect estimates.

Some sites may have multiple fishing modes. In such cases, attempt to interview anglers from each mode giving preference to no mode. However, samplers are instructed to focus on the assignment mode when anglers from different modes are present at the same time.

Samplers represent AMRD and are expected to dress and act professionally, reflecting well on the agency. Shirts should be AMRD issued and in good condition. Open-toe footwear, such as sandals or Crocs™, is not acceptable. Caps, if worn, should be AMRD issue, if available. Coats and jackets should be AMRD issue if available.

Someone will inevitably bring up a controversial topic to a staff member, whether fishing-related or not. As a representative of AMRD, we cannot allow ourselves to be caught up in such conversations. Anything we say will directly reflect on the Division and is subject to being quoted or misquoted. Therefore, it is best to listen only if possible. If the person is hostile or wants to speak to someone about their concerns, attempt to refer them to the County Supervisors.

Samplers should have a fish identification book, app, or device with access to the internet to help identify fish. Additionally, a calibrated scale for weighing and a fish measuring board for biological data must be available during each assignment.

Each sampler will be issued a four-digit identification number upon scoring at least 70% on a fish identification test. The test consists of a total of 20 marine finfish found in or near Alabama

waters. The twenty fish may be a mixture of inshore and offshore saltwater finfish species and conducted in a presentation format. Graded tests will be emailed to Gulf States Marine Fisheries Commission (GSFMC) for ID issuance. Obtaining ID numbers from GSMFC is necessary due to ongoing cooperation between AMRD and NOAA Fisheries on other sampling programs. In addition to the fish ID test, attendance of an in-person or virtual training session may be required.

Regulations

Information gathered through the AL Creel program is confidential and will not be used for anything other than fisheries purposes. (Code of Alabama ADCNR Title 9 Subsections 2-2 (5) and 2-4 (e)). Do not share information obtained during an interview with other anglers or people outside AMRD. Survey participants, including charter captains, who acknowledge fishing without a license or permit, possess illegal fish, etc., will not be reported to AMRD Enforcement.

Alabama Fishing License

Anglers 16 years or older who take, possess or attempt to possess fish in Alabama marine waters must have a saltwater fishing license. Anglers 15 years old and under and residents 65 and older, are exempt from possessing an Alabama saltwater fishing license. A Saltwater Angler Registry and/or a Gulf Reef Fish Endorsement is required for anglers 16 and over who are not required to purchase an annual license such as those 65 or older, lifetime saltwater license holders, or fish exclusively from a licensed pier.

Gulf Reef Fish Endorsement (GRFE)

Randomly selecting contacts solely from the saltwater fishing license database for the effort survey resulted in too few offshore anglers to characterize offshore activity adequately. By far, most saltwater fishing license holders focus their effort inshore. As a result, the Gulf Reef Fish Endorsement (GRFE) was created in 2020 to identify anglers who target or possess reef fish.

The endorsement is fee based and is required of all adult anglers possessing any species of amberjack, grouper, snapper, hind or Gray Triggerfish. The permit is not required for anglers under the age of 16 years. Charter anglers (i.e., clients) are covered under the vessel permit, which is required to have a charter GRFE if possessing any of the covered species. Charter clients are not covered under the captain's private GRFE if he has one. Only the charter GRFE covers charter clients.

Charter captains that take clients out on offshore trips should register for a charter vessel GRFE. Charter captains that take clients out on inshore trips should consider the purchase of a charter vessel GRFE as gray snapper are common in state waters and included in the list of species covered under the GRFE. Charter captains should register for a private angler GRFE for personal trips. GRFE's are valid for the license year.

Personal GRFE's are available online through and charter vessel GRFEs must be purchased in an AMRD office. Endorsements can be printed and carried by the angler or displayed on a

Smartphone via screenshot, downloading an image of the permit, etc. Either form is acceptable for Enforcement purposes.

Federal Permits

For-hire charter or head boat vessels that take people out fishing in federal waters in the Gulf of Mexico to catch and keep federally managed saltwater finfish species must have one or more of the following permits below:

Atlantic Highly Migratory Species (HMS) Permit

The Atlantic Highly Migratory Species (HMS) Permit is a federal permit required of all owners/operators of vessels fishing recreationally for Atlantic tunas, sharks, swordfish and billfish in the Gulf of Mexico, the Atlantic Ocean, or the Caribbean Sea. The federal HMS permit is required for private and charter fishing trips. There is a cost associated with the HMS permit. The permit can be purchased online at hmspermits.noaa.gov/.

Gulf of Mexico Charter Headboat for Reef Fish (RCG)

This permit allows charter/head boat vessels to take people out fishing in federal waters to catch and keep reef fish.

Overview of the AL Creel Dockside Survey

Data Recording and Assignment Preparation

There are two forms to be used by the sampler when conducting dockside assignments. The AL Creel Assignment Summary Form is used to collect summary information about the time spent at an assigned site and the level of fishing and non-fishing activity observed by the sampler during the assignment (Appendix A). The second form used by the sampler during assignments is the AL Creel Dockside Form (Appendix B). This form is used to record information related to fishing activity, saltwater finfish catch and harvest and fish lengths and weights from intercepted fishing parties. Samplers should carry with them several blank AL Creel Assignment Summary Forms and 50 blank AL Creel Dockside Forms on each assignment. Samplers must also take on each assignment a measuring board and hand scales. A digital scale should be taken to marinas where space is available to set one up and its location can serve as a convenient location for the sampler and angler to weigh fish. Samplers should periodically confirm the accuracy of their hand-held scales and inspect the expiration date of the certification of the digital scale, if used.

Data recorded on either of the forms should be legible and only blue/black non-gel pens should be used to record information. Samplers should record information within provided boxes since forms are scanned. Any portion of the alphanumeric character on the red outline of the boxes or outside the outline will not be recorded and will increase entry time and possibly reduce data accuracy. Prior to submission, all forms should be checked for completeness. All completed

forms must be submitted to the project point of contact in the office of the county where sampling occurred, after the assignment is completed.

Samplers must wear AMRD issue clothing which will assist anglers with identification and increase trust. All collected information associated with a vessel is confidential and cannot be shared with other individuals except fisheries section supervisors. If forms need to be duplicated or discarded, please be sure paperwork is shredded prior to discarding.

Interview Priorities

The priorities during an AL Creel assignment are (in order): Counted observations, number of parties (i.e., interviewing as many as possible), biological information (weights take higher priority over lengths).

In the context of AL Creel, "Biological sampling" refers to anything beyond identifying and counting fish (e.g., lengths, weights, ear bones, sex identification). Biological sampling of length and weight separate from AL Creel and is covered in a separate document.

Fishing Trip

A fishing trip is total amount of fishing within a “waking day” regardless of the type of fishing done or if the fishing activity is done at the same or different sites. A waking day is defined as the most recent time from which an angler awoken, initiated and ceased fishing. Fishing is the act of having fishing gear in the water. The cessation of fishing by a party is considered a completed fishing trip. Most trips are within the same day as an interview.

An angler’s waking day can be more than 24 hours, therefore only the fishing activity within the most recent waking day should be considered in this situation. Additionally, a trip beginning in the evening, but ending past midnight, is considered a waking day.

For example, if a PR fishing party is intercepted after ceasing their fishing for the day, they are eligible for an interview and counted under returning vessel activity in the ‘# of Interviewed Rec Fishing Vessels’ category. However, if the same party is later observed fishing from shore to catch shrimp for use as bait, they would be classified under 'Shore Party Activity' in the ‘# of Rec Non-Finfish Shore Parties’ category. Both activities are recorded in separate categories.

AL Creel Dockside Survey

Interviewing Fishing Parties

When time allows, samplers should approach each fishing party and introduce themselves, inform the party that his/her presence is to conduct a fishing survey and ask for their participation in the survey. For example, a suggested introduction would be, “My name is_____. I work for the Alabama Marine Resources Division, and we are conducting interviews with anglers to determine the recreational harvest of saltwater finfish. Would you like to participate?”.

Attempt to interview an adult from each party, however, a minor can be interviewed if an adult is unavailable. Young children (under 10 years of age) should be avoided for questioning. This is

a qualitative decision by the sampler, and if you are unsure avoid the angler in question. Samplers do not attempt to ask age information. Note that participation in the survey is voluntary. If the angler is receptive to further questioning the sampler must ask the following question.

"Were you recreationally fishing for saltwater finfish today?"

If an angler is approached and refuses the interview, it is considered an initial refusal. Record each party who refuses in the 'Trip Tally Notes' on the assignment summary form. These will be tallied and recorded at the completion of the assignment. Initial refusal trips should not be counted in the "Missed" box on the Assignment Cover Sheet. Initial refusals also include parties that drive off seemingly to avoid being interviewed.

If an angler initially agrees to participate in the interview but refuses to answer or cannot answer a question, the interview is considered a mid-interview refusal. Mid-interview refusals are not useable. Such interviews should be tallied as a "Refusal" on the assignment summary form.

Anglers must answer "Yes" to the screening question above to be eligible for the interview. The AL Creel interview, including catch information, is voluntary for all recreational anglers, private and charter. Anglers are under no obligation to participate in the survey. The angler(s) need not have caught or landed any finfish to be eligible for interviewing. There are no age limitations (use common sense when choosing a fishing party representative to interview). Charter captains or deckhands may be interviewed to report catches on behalf of the anglers of the trip.

To be eligible, anglers must be finished saltwater finfishing in that fishing activity for the day. Do not attempt to interview anglers who are preparing to saltwater finfish. Anglers who report they targeted freshwater finfish or shellfish or saltwater shellfish are not eligible for an interview even if they harvested saltwater finfish species during the trip. However, they must be tallied on the AL Creel Assignment Summary Form under '# of Rec Non-Finfish Vessels' if the party was on a vessel or '# of Rec Non-Fishing Shore Parties' if the party was fishing from shore. Anglers collecting shellfish to be used as bait to catch finfish later the same day are not eligible. An angler will be eligible only when they begin finfishing.

Anglers for which the primary reason for the trip was for commercial purposes (i.e., sale of harvest for profit) are not eligible but must be tallied in the AL Creel Assignment Summary Form under "# of commercial fishing vessels".

Tournament anglers are eligible, but only if they use the assigned site to launch and retrieve boats or are believed to be long-term users of a slip at the site. Only those anglers should be approached. Anglers who come to the site to weigh fish or observe tournament activity are not eligible.

Interview questions can be directed to one or more members of the fishing party. It is not necessary to speak to every angler of the party if one person (e.g., parent) can answer all interview questions for the party. For chartered fishing trips, questions should be directed to the charter captain as much as possible.

Fishing Activity

Harvest estimates can be generated for private and charter activities. To determine the catch rate for each activity, we must know to which group an angler belongs. A private trip is defined as a fishing party that did not hire a guide to show the party where to fish using either the party's vessel or a vessel provided by the guide. For private trips, it does not matter if the party used a boat belonging to one of the party members, borrowed a boat from someone other than a party member, or rented a boat. A charter trip is a fishing party that hired a guide to show them where to fish using either the party's vessel or a vessel provided by the guide. Keep in mind captains may fish without clients. They may take non-paying family or friends, search for new fishing spots, etc. If such a situation occurs, the trip should be marked as private (see additional information under "Charter Vessels" below). If a charter trip is donated to charity, mark the trip as charter.

Private anglers are further classified into shore and boat anglers. Shore anglers are those who fished outside of a boat and include anglers fishing from piers, beaches, banks, jetties, etc. If an angler uses a boat to access jetties, for example, and gets out of the boat to fish standing on the jetties, he is considered a shore angler. In that example, the boat was used as a means of transportation, much like a car.

AL Creel Dockside Form

1. Year Month Day*:* Date of the assignment.

2. Sampler ID: Unique four-digit number issued to each sampler. A sampler must have an ID number assigned to them before conducting an assignment.

3. Control #: A unique 4-digit number issued with each drawn assignment.

4. Site: Four-digit code associated with sampling locations.

5. Time: Enter the approximate time the interview began. Time is to be recorded in four-digit military format.

6. # of Anglers: The total number of individuals who fished on a vessel or fished as part of a shore party. Confirm the total number of anglers in the party. This number includes ALL anglers who fished, whether or not they actually caught fish or how long they fished during the trip. Note that current regulations allow for bag limits for federal charter captains and crew to be used for all species except Red Snapper, Greater Amberjack, and any species of grouper.

   The party includes all anglers fishing from the same vessel for a single boat-based trip. Multiple boats or kayaks fishing as a group, whether considered private or charter, can be handled in one of two ways. They may be treated as a single group by combining harvest data and totaling the number of anglers. If grouped, note how many boats/kayaks the trip

includes in the trip comments. Or they may be treated as single parties if the anglers in the party can separate harvested fish.
For shore anglers, a party can be defined as the number of anglers keeping fish on a common stringer, ice chest, etc. But, like vessel-based anglers, a large group of shore anglers fishing together (e.g., a family) can be considered a party.

7. Mode Fished: Indicates the mode of fishing. Private - a privately owned vessel that is not engaged in commercial or charter fishing activities during the fishing trip. Shore - a private recreational fishing trip with "feet on the ground" and not from a vessel. Charter - a fishing trip in which a guide is compensated for his/her guide services.
Sampler should ask the party representative, "Has most of your fishing today been from a private or charter vessel or from shore?".

For Private trips

# of Licensed SW Anglers: The total number of anglers who report holding a current recreational Alabama saltwater fishing license (includes lifetime license holders). Ask all members of the party if they possess a valid Alabama saltwater fishing license. Record the number of "Yeses." You do not need to see the license and anglers are not required to present them to you.

Anglers aged 65 and older are exempt from needing an Alabama saltwater fishing license but must still be enrolled annually in the Saltwater Angler Registry to be considered a licensed angler. During interviews when anglers appear to be 65 and older, and responded 'No' to the license question, the sampler must follow-up with the angler with a question "Are you currently enrolled in the Alabama Saltwater Angler Registry?". If the angler indicates they are not enrolled in the Saltwater Angler Registry, they will be classified as an unlicensed angler and not included in the '# of Licensed SW Anglers'.

When interviewing anglers at public fishing piers in Alabama, such as the Gulf State Park Pier or Fairhope Pier, it is important to note that anglers can fish with a saltwater pier fishing license. If an angler states they have a saltwater pier fishing license, they should be recorded as a licensed angler.

When conducting interviews at Cedar Point Pier, samplers should be aware that an Alabama saltwater fishing license is not required to fish from the pier. Therefore, anglers interviewed from Cedar Point Pier, if they are asked about their fishing license and respond with 'I don't need one for fishing the pier,' it means they are legally allowed to fish there without purchasing a separate Alabama saltwater fishing license for the pier. A follow-up question such as 'Do you have an Alabama saltwater license to fish other locations?' should be asked. If the angler(s) responds 'No', they are considered an unlicensed angler.

If the number of licensed anglers is less than the number of anglers, note in the trip comments the reason why. Common reasons are angler(s) are 'minors' or individuals

were ‘fishing without a license’. The number of licensed anglers should not exceed the number of anglers in the party.

License information is needed to establish a correction factor to account for those private anglers who will not be contacted in the effort survey due to not possessing nor needing a valid Alabama recreational saltwater fishing license or Angler Registry.

# of GRFE: The total number of anglers in the interview party that claim to have a valid GRFE. Every angler, regardless of area fished, harvest, etc., must be asked if they have a valid GRFE. As with saltwater licenses, record the number of “Yeses.” Also, with saltwater licenses, you do not need to see the GRFE and anglers are not required to present them to you.

Charter Trips

Eligible Charter Vessels for AL Creel Dockside Interviews

Charter vessels eligible for AL Creel Dockside interviews include all state and federally permitted charter vessels operating in Alabama, with the exception of headboats. Headboats are federally permitted vessels licensed to carry large groups of anglers and are sampled in the Southeast Headboat Survey. Therefore, they are not surveyed under the AL Creel Dockside program.

Vessel Registration: For all charter trips, record the vessel registration number starting in the first box. The information will be used to validate charter license status.

Keep in mind captains may fish without clients. They may take non-paying family or friends, search for new fishing spots, etc. If such a situation occurs, the trip should be marked as “Private”. DO NOT record the captain’s name or any other identifying information in this situation and treat the interview as you would any other private trip.

If a charter trip is donated, mark the trip as charter and record the vessel information as you would any other charter trip.

Licensed?: Once the interview or assignment is completed, refer to the provided Charter Vessel List and select Yes or No depending on whether or not the vessel is found on the list. DO NOT ask a captain to show his license in front of his clients. An updated list will be provided weekly.

GRFE?: After the interview or assignment is completed select Yes or No if the captain has a GRFE according to the vessel status in Charter Vessel List.

8. **Tournament:** Select Yes or No if the party was or is participating in a tournament that day. The question pertains to whether or not the party participated in a tournament, not if a tournament is being held at the assigned site. Tournament anglers using the assigned site to launch and retrieve boats or are believed to be long-term users of a slip at the site

are eligible for interview. That includes fishing rodeos and any other organized fishing event in which prizes or awards are given.

9. **Was The Majority of Your Fishing Effort Today….:** Read the choices and record where the majority of fishing effort was conducted during the fishing trip. The inshore area is defined as all bays, rivers, sounds, inlets, estuaries, and the Intracoastal Waterway (ICW) (Appendix C). If the reporting angler(s) split time equally among two or more distances from the Gulf shoreline, ask anglers to choose one of the distances. Please note that fishing effort in the Gulf should be recorded relative to the distance from the Gulf shoreline.

10. **Bottom Type?**: Structure or bottom type where most of the fishing occurred. Choose one.

11. **Target species**: Record the Primary and Secondary species, if applicable. Angler responses such as "Whatever was biting" or "No Target" are acceptable and must be recorded as 999999 in the Number 1 Target Species code boxes.

Unavailable catch

This includes all discarded and retained fish that are reported, identified, and counted **by the angler(s)**. Record species common name for fish reported by the angler and its respective species code (6-digit ITIS code), the number of fish reported caught by the party followed by the Type Code for those fish. Samplers should record fish at the species level if the angler can provide enough information to positively ID to that level.

A separate line must be filled for each unique species-type combination. Each "Unavailable Catch" record must contain a species name, a six-digit species code, the number of fish, and a type code. Never leave any of these items blank! It is also important that you write out the full species name (be sure to use the accepted common name). **Abbreviations are not acceptable.**

Available Harvest

This includes finfish that are identified and counted **by the sampler**. Record the species' common name for each observed fish species and its respective species code (6-digit ITIS code), the number of fish counted followed by the Type Code for those fish. Weights followed by lengths of these fish should be obtained if time allows.

When more than one fish of a species is available, you do not need to repeat the species name, the species code, or the total number of fish on subsequent lines. All weights and lengths from sampled fish should be recorded. As with unavailable catch, it is important that you write out the full species name (be sure to use the accepted common name). **Abbreviations are not acceptable.**

If no length or weight data are obtained from an observed fish, the boxes for unavailable data should be filled with "9" (Example 1). It is important to provide a comment explaining the reason for any missing data. Common reasons for not obtaining length or weight measurements include situations where the angler refused to allow the fish to be weighed or measured, the fish were gutted, or the weight of the fish exceeded the capacity of the scale.

If length and/or weight information are not obtained for some of the available harvest (i.e., angler in a hurry or the angler refused to have all harvested fish weighed and measured), you should record lengths and/or weights in rows for the measured fish (Example 2). There is no need to complete extra lines with "9" in lengths and weights column. You should then use the comment section to explain why some fish were not weighed and measured.

You should never skip a record line on a coding form. The next fish should be entered on the next line (Example 3).

Example 1:

Available Harvest	Species Code	# of Fish	Length (MM)	Weight (KG)	Type
Red Snapper	168853	005	9999	99.99	8
				.	
				.	
				.	
				.	

Comments: angler in a hurry, couldn't get lengths and weights.

Example 2:

Available Harvest	Species Code	# of Fish	Length (MM)	Weight (KG)	Type
Red Snapper	168853	005	450	1.20	8
			486	1.75	8
			625	3.00	8
				.	
				.	
				.	
				.	
				.	

Comments: other two fish were already filleted .

Example 3:

Available Harvest	Species Code	# of Fish	Length (MM)	Weight (KG)	Type
Red Snapper	168853	005	450	1.2	8
			486	1.75	8
			625	3.00	8
Gray Triggerfish	173138	003	425	2.5	8
				.	

Harvest estimates cannot be generated without knowing what species were harvested and how many of those species were harvested.

The majority of observations should be Available Harvest because the Division needs to have as much confidence in harvest estimates as possible. That confidence comes from samplers identifying and counting fish, which minimizes estimation error present in reported harvest.

There are no expectations of 100% observations by the samplers. Reported harvest will always be present and used in determining harvest estimates. Anglers will always be in a hurry, etc. We simply need to take advantage of opportunities to get sampler observations of harvest.

If the party allows and there are no other parties available for interview, count as many fish as possible, even if there are 50 or more fish. The point of the dock-side survey is to characterize harvest at a given site. That is why interviewing as many parties as possible is still necessary. Samplers will have to use their judgment on how best to count fish. If parties are exiting the site a few at a time, focus on counting fish at the risk of missing parties. If there is a rush of parties, count "some" fish from each party and focus on interviewing as many parties as possible. Remember that the objective is to characterize the activity at the site for that time shift.

If only part of the harvest is counted, record the uncounted fish as unavailable catch on a separate line. That is true whether the reason for not counting all fish was due to the angler wanting to leave, the angler not making all fish available, etc.

If all fish in possession of an interviewed party are not counted, note a reason in the comments, such as "angler in a hurry", "angler did not make all harvest available," "fish filleted," "moved to next trip." Analysis of comments can be used to determine site pressures and identify sites that may need two samplers during certain times of the year.

Keep in mind anglers may keep purchased live or dead baitfish in the same location as harvested fish. Therefore, be sure that only harvested fish are recorded. Climbing into vessels or vehicles is permissible if the angler allows it and the sampler deems it safe to do so.

AL Creel Assignment Summary Form

Assignment Completion
An assignment is complete if the sampler remains on-site for the entire time shift (i.e., 8am – 2pm, 2pm to sunset). Arriving late and leaving early can significantly affect the accuracy of harvest estimates. Therefore, samplers are expected to arrive to the site on time and leave no sooner than the shift end time unless the site becomes unsafe.

An assignment is not complete if the assignment was not worked at all, the sampler arrived late or left the site before the end of the time shift for any reason. The only exception is leaving a private access site after verifying no activity is present. In such cases, the assignment will be marked as complete.

Samplers may leave the site prior to the sample shift end time if the site environment becomes unsafe. Unsafe conditions can be a result of inclement weather, site visitors engaging in questionable acts, or any other legitimate reason determined by the sampler. The sampler should exercise common sense for any situation outside of the ones discussed here. Staff are also encouraged to contact their supervisor before leaving the site. It is the discretion of the supervisor and/or area manager as to whether or not contacting them prior to leaving a site early is a requirement. When staff leave sites early, a reason for leaving must be noted on the assignment comments line. A form should be submitted as usual, even if no interviews were obtained before leaving the site early.

Missed or Compromised Assignments
If an assignment is not worked, a cover sheet with a reason why the assignment was missed must be submitted as usual.

Interview data cannot be used if an assignment was worked "incorrectly" (e.g. worked wrong site, worked wrong time shift, worked an assignment on the wrong date). We can, however, use any biological data collected, if any. Incorrectly worked assignments are treated the same as missed assignments as far as documentation is concerned. A cover sheet with an explanation given on the assignment comments line should be submitted as usual. The same explanation should be entered.

Supervisors or managers can make decisions not to work assignments due to safety and road condition concerns without an office closure declaration. Still, they are required to provide a brief written justification on an AL Creel Assignment Summary Form. That is particularly true for weekend assignments.

The following are descriptions of each of the data needs or questions on the form.

Sampler ID: Four-digit sampler ID number issued to each sampler and sampler name.

Year Month Day: Date of interview.

Control #: A unique 4-digit number issued with each drawn assignment. The first digit indicates the County to which the assignment was given (2 – Mobile or 5 – Baldwin). Digits two and three are the Sample Week for which the assignment was drawn. The last digit is the sequential numbering of assignments drawn for that Sample Week within a county. Control numbers are issued by county. Example: 2502 is the second assignment drawn for County 2 in Sample Week 50.

A.M. or P.M.: Time period assignment is to be conducted (8am-2pm is considered A.M.).

Site: Four-digit code associated with sampling locations.

Assignment Status: complete or incomplete.

Comment: Two-digit code associated with the reason for leaving the sampling site before the end of the six-hour assignment time block, or the end of sampling time. Refer to legend within the Form to identify appropriate reason code designation.

Start Time: Military time when sampler arrives at assigned site. Leaving a site for any reason must be recorded.

End Time: Military time when sampler leaves assigned site. Leaving a site for any reason must be recorded.

Assignment Returning Vessel Activity Summary

# of Interviewed Rec Fishing Vessels: Total number of interviewed recreational finfishing vessels.

# of Missed Rec Fishing Vessels: The total number of vessels, believed to be eligible (recreationally finfishing), that left the site without being interviewed. Parties with a language barrier should also be included in this category. Make a comment of missed parties due to language barrier to help isolate those trips.

# of Rec Fishing Vessel Refusals: Total number of interviewed recreational finfishing vessels where the party refused to participate in the survey.

# of Rec Non-Finfish Vessels: Total number of interviewed fishing vessels where the party was not determined to be saltwater finfishing but instead finfishing for freshwater finfish or shellfish.

# of Commercial Fishing Vessels: Total number of interviewed fishing vessels that were used for commercial fishing purposes.

# of Non-Fishing Vessels: Total number of interviewed vessels that were not fishing.

Assignment Shore Party Activity Summary

# of Interviewed Rec Shore Parties: Total number of recreational shore finfishing parties interviewed.

# of Missed Rec Shore Parties: Total number of recreational shore fishing parties who are determined to have been saltwater fishing but were not interviewed.

# of Rec Shore Party Refusals: Total number of recreational shore fishing parties interviewed who refused to participate in the survey.

# of Rec Non-Finfish Shore Parties: Total number of shore fishing parties interviewed that were determined not to be saltwater finfishing but fishing for shellfish.

# of Commercial Shore Parties: Total number of shore fishing parties interviewed that were fishing for commercial purposes.

# of Non-Fishing Shore Parties: No longer collected. If the boxes are blank fill each box with a "9

Assignment Comments: Use this section to provide information about the assignment that was out of the ordinary. Comments may include bad weather during assignment, construction at site, high refusal responses, etc.

Trip Tally Notes

Use this section to tally parties who refused the interview, and missed recreational fishing, recreational non-saltwater finfishing, commercial, and non-fishing parties. If a party initially agrees to participate in the interview but refuses to answer or cannot answer a question, the interview is considered a mid-interview refusal. Mid-interview refusals are not useable. Such an interview should be tallied as a "Refusal" on the assignment summary form. Initial refusals should be tallied as a "Refusal" on the assignment summary form. Initial refusals include parties that drive off seemingly to avoid being interviewed, as determined by the staff working the assignment.

These will be tallied and recorded in the appropriate fields at the completion of the assignment.

Effort Surveys

Private Angler Effort Survey

To determine the overall recreational harvest estimate the amount of effort, defined by the number of saltwater fishing trips, is needed. Effort is derived from the Private Angler Effort Survey. This survey is not conducted by AMRD staff but is contracted to an outside entity. Each week a set number of individuals with an Alabama recreational saltwater fishing license are drawn randomly for participation in the effort survey. Licensed anglers are divided into four license types, referred to as regions, to align with relative fishing activity. The four regions are; 1) Coastal – Two counties bordering the Gulf of Mexico, 2) Non-Coastal – rest of the counties in the state of Alabama, 3) Out-of-State, or non-resident license holders, and 4) Gulf Reef Fish Endorsement

(GRFE) holders (separate from saltwater license holder). During Red Snapper season, the number of private GRFE anglers drawn for the effort survey increases.

Initial contact is made by email (when provided), informing the angler that he/she has been drawn for the survey. The email allows anglers to report their fishing activity, or lack thereof, for the sample week (the week the email is sent) by replying to the email by a set time and date (typically by the Tuesday of the week following the sample week). If no response is received by the deadline, a series of phone calls (up to a maximum determined by AMRD) will be made to the angler to obtain the needed information. Calls continue until the 50% of the weekly call list is contacted. If we do not have an email address for a drawn angler, calls to collect fishing effort information will start immediately. Ideally, all anglers would have equal chances of being interviewed, but only licensed anglers, by nature, are in the Licensing Frame and are available to be drawn. An effort correction factor accounts for private anglers who fish without a license due to being exempt or simply not purchasing a license. The effort correction factor is calculated as the number of the anglers in a party divided by the number of anglers in the party with a license.

Charter Effort Survey

The Charter effort survey is conducted weekly by email or phone. All persons possessing a current Alabama charter boat license are included in the charter telephone survey call list, a.k.a. "frame." The charter sample frame is stratified into 2 groups: those possessing a GRFE, and those that do not. Ten percent of vessels with a charter license-only and thirty percent of vessels with a charter license and a GRFE are drawn, which is approximately 20 and 15 calls, respectively. A sample weight for each group is calculated as the proportion of vessels within the group to all of the vessels selected for both groups in the week. Alabama charter licenses are issued to the vessel; therefore, an independent frame is used to contact captains. Vessels with a federal Charter/Headboat Reef Fish Permit are not included in the frame.

If we have an email address for a drawn captain, an automated email will be sent to the captain informing him/her that they have been drawn for the survey. The email provides captains the option of reporting their fishing activity, or lack of, for the sample week (the week the email is sent) by replying to the email by a set time and date (typically by the Tuesday of the week following the sample week). If no response is received by the deadline, calls will be made to the captain to obtain the needed information. If we do not have an email address for a drawn captain, calls to collect fishing effort information start immediately.

Charter call lists for weekly effort are generated at the beginning of each work week and provided to appropriate MRD staff responsible for making the calls throughout the week. Staff members contact the selected captain/representative to gather information about charter activities conducted during the previous week. The results from the completed call sheets are entered into a centralized database by close of business each Friday.

The purpose of the survey is to estimate recreational charter fishing effort. The number of saltwater charter trips made in a given sample week (Monday – Sunday), the number of paying clients per trip, the dates of those trips, the time of return for each trip, the area in which the

majority of the harvest took place, and whether the trip launched from a public or private access point are collected. If no fish were kept, the area where the majority of fishing effort took place. The charter effort survey and private recreational angler effort survey are multiplied by the catch rate on a species-specific level for the same sample week to calculate total landings estimates per species per sample week.

Quality Control (QC)

Sampler QC

Random unannounced site visits will be made during AL Creel assignments. The purposes of the visits include, but are not limited to, explaining current procedures, exchanging information (e.g., ideas and questions), and ensuring the sampling protocol is followed.

There is no minimum or maximum number of visits for a given field staff or site. Below is a partial list of metrics on which staff will be graded.

1. Working the assigned site
2. Working the assigned time shift
3. Wearing AMRD clothing
5. Properly screening anglers
6. Conducting survey as per AL Creel Sampler Manual

QC visits may be conducted by any staff member, but the visit must be coordinated through AL Creel administrative staff.

Meetings

An annual meeting will be held that is intended to be an open dialogue between administrative and field staff concerning changes, issues, etc. The meeting will also include a fish identification test, protocol refresher discussions, and presentations on various fisheries-related topics.

APPENDICES

APPENDIX A

4055407476

AL Creel Assignment Summary Form

Sampler ID

Name:

Year: 2025

Month

Day

Site

Start Time

End Time

Control #

( ) A.M. ( ) P.M.

A.M. = 0800-1400
P.M. = 1400-Sunset

Assignment Status

(1=Complete 2=Incomplete)

Comment

Assignment Returning Vessel Activity Summary:

# of Interviewed Rec Fishing Vessels	# of Missed Rec Fishing Vessels	# of Rec Fishing Vessel Refusals	# of Rec Non-Finfish Vessels	# of Commercial Fishing Vessels	# of Non-Fishing Vessels

Assignment Shore Party Activity Summary:

# of Interviewed Rec Shore Parties	# of Missed Rec Shore Parties	# of Rec Shore Party Refusals	# of Rec Non-Finfish Shore Parties	# of Commercial Shore Parties	# of Non-Fishing Shore Parties
					999

Trip Tally Notes:

Comment Codes:

06 - Couldn't Find Site
08 - Asked to Leave
12 - Site Closed After Hours (time in comments)
13 - Site Closed Other (specify in comments)
14 - Site Unsafe During Sampling Period
15 - No Activity, Darkness
16 - Departed Early (severe illness, injury, other)
17 - Inclement Weather

Comments:

APPENDIX B

5365322770

AL Creel Dockside Form

2025							
1. Year	Month	Day	2. Sampler ID	3. Control #	4. Site	5. Time	6. # of Anglers

7. Mode fished?
( ) Private
( ) Shore
( ) Charter

# of Licensed SW Anglers

# of GRFE

Vessel Registration

Licensed? ( ) Yes ( ) No

GRFE? ( ) Yes ( ) No

8. Tournament? ( ) Yes ( ) No

9. Was the majority of your fishing effort today.....
( ) Inshore - Bay, River, Sound, ICW
( ) 0 to 3 miles - Gulf
( ) 3 to 9 miles - Gulf
( ) more than 9 miles - Gulf

10. Bottom Type?
( ) Artificial Reef
( ) Oil/Natural Gas Platform
( ) Natural Hard Bottom
( ) Flat Bottom
( ) Don't Know

11. Target Species 1. _____ 2. _____

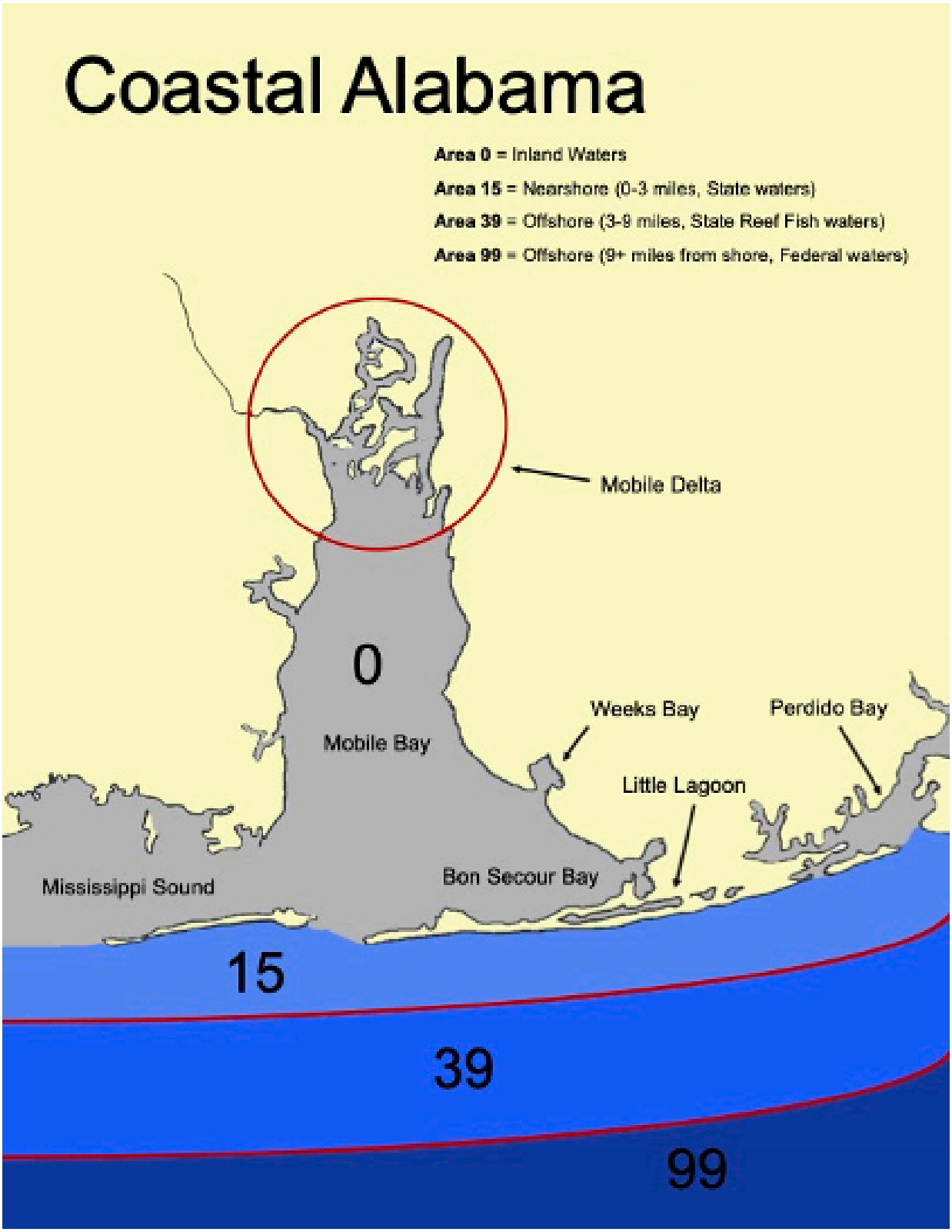
Type Codes : 4. Used for bait/plan to use for bait 5. Other 6. Thrown back alive 7. Thrown back dead/plan to throw away 8. Eaten/plan to eat 9. Eaten by predator

Unavailable Catch	Species Code	# of Fish	Type		Species Code	# of Fish	Type
1.				6.			
2.				7.			
3.				8.			
4.				9.			
5.				10.			

Available Harvest	Species Code	# of Fish	Length (MM)	Weight (KG)	Type
				.	

Comments:

APPENDIX C


Coastal Alabama
Area 0 = Inland Waters
Area 15 = Nearshore (0-3 miles, State waters)
Area 39 = Offshore (3-9 miles, State Reef Fish waters)
Area 99 = Offshore (9+ miles from shore, Federal waters)
Mobile Delta
0
Mobile Bay
Weeks Bay
Perdido Bay
Little Lagoon
Mississippi Sound
Bon Secour Bay
15
39
99

AL Creel Charter Call Manual

PURPOSE

The AL Creel charter survey is conducted to estimate weekly recreational saltwater finfish charter trips (effort). Charter effort combined with dockside catch information will generate harvest estimates of various finfish recorded in the survey. The estimates provide information to assist fisheries managers with the development of fishing regulations and seasons.

The survey is designed to collect chartered saltwater fishing trip activity; therefore, non chartered saltwater fishing trips or chartered fishing trips in freshwater should not be sampled. However, donated charter fishing trips in saltwater are eligible for sampling.

CHARTER EFFORT SURVEY SUMMARY

The charter effort survey is conducted each week (Monday – Sunday sampling week) by phone. Participation is voluntary. All active Alabama commercial party (charter) boat licenses in a given sample period are included in the charter call list, a.k.a. “frame”. Ten percent of the charter licenses holders and thirty percent of the charter license holders who also have a Gulf Reef Fish Endorsement (GRFE) are drawn at random. Charter licenses and charter GRFE’s are valid for a license year.

The effort survey collects the following pieces of information:

1. Number of saltwater charter trips completed on licensed charter vessels.
2. Dates of those trips.
3. Number of anglers per trip.
4. Area in which the majority of harvest or fishing effort took place.
5. Whether the trip launched from a public or private access point.

Weekly lists of selected charter vessels, along with the “Alabama – For-Hire Survey Form” used for recording survey responses are distributed to staff (Appendix A). A current frame of all licensed vessels, in Excel format, is also provided with the weekly list. Vessels that are selected in a given week are removed from being selected in the subsequent week to minimize survey fatigue. Those vessels are available to be drawn for the next sample week (second week after the original week of selection).

CONTACTING SELECTED VESSELS

At the beginning of each work week, Alabama Marine Resources Division (AMRD) staff assigned charter survey calls will receive a set of prepopulated Alabama For-Hire Survey Forms (Figure 1) with vessel and representative information. Their task is to contact the designated representative associated with the selected vessels to collect fishing activity data for the previous week. Staff must make at least five call attempts per vessel. No more than two attempts for each vessel should be made in a single day, one should occur in the morning and the other in the afternoon. All calls must be completed by Thursday unless there is a holiday during the week of calls. In weeks with multiple holidays, daily phone call attempts can be increased.

In all communications, remember to be courteous to the vessel representative. Participation in the survey is voluntary, so it is important to maintain good rapport with the vessel representative in order to sustain their cooperation in the survey. Always remember that

anything you say can be construed as speaking on behalf of the entire Division. A supervisor will occasionally listen in on conversations to ensure compliance with protocols.

COLLECTING THE DATA

The following call script must be used by samplers when contacting vessel representatives for trip information. It is necessary to follow the script to ensure contact individuals are asked the questions in a consistent manner. This will ensure information is accurately collected.

The sampler should make it clear to the representative that we are requesting data for trips that occurred on the selected vessel during the selected sample week. Make sure to pay attention to comments regarding the representative's preferred name/title and vessel make, model, and year and note information in the comment section as needed.

First call of the week ONLY:

If the call goes to voicemail, leave the following message:
"Hello, this is _____ from the Alabama Marine Resources Division. We'll be trying to reach you this week regarding a charter vessel selected in the State For-Hire Fishing Effort Survey. Please return this call at 251-968-9697. Thank You!"

An "Alabama – For-Hire Survey Form" will be pre-filled with the vessel name and known representatives or captains contact information for each drawn vessel. Record the representative's or captain's responses on the form.

Call Script

Hello, this is (sampler's name) from the Alabama Marine Resources Division. I'm contacting you today regarding the For-Hire Fishing Effort Survey.

Am I speaking to (representative's name)?

Just to verify, are you still the captain or designated representative for vessel number (vessel number)?

Question 1: Did you have any saltwater fin fishing trips with paying customers last week? MON thru SUN (Give Dates)

Record response(s) on the form.

If "No" charter trips were made during the sampling week, record "0" in the appropriate location on the form. End the survey and "thank" them for their participation.

If "Yes" to charter trips, continue to question 2.

Emphasize to the vessel representative or captain we are asking for saltwater charter trip activity conducted on the selected vessel. We are not interested in charter trips conducted on other vessels the representative may own unless more than one vessel for the same representative is selected within the same sample week.

Question 2: On which days were trips taken?

Record response(s) on the form.

Assuming the vessel representative answered “Yes” to Question 1, we need to know on which days each of the trips occurred. The “Alabama For-Hire Survey Form” only provides space for four trips conducted during a single day. If more than four trips are reported, then record the first four trips completed on that day and note in the comments section of the form the remaining trips reported for that day. *Verify that the vessel representative is reporting only on trips taken on the drawn vessel.*

If a vessel representative reports a multi-day trip, then record information for the day the trip finished. For example, if a trip occurred on a Tuesday and Wednesday, record information on Wednesday. Also, note in the comments section of the form that the trip is part of a multi-day trip.

Question 3: How many anglers were on the trip?

Record response(s) on the form.

Anglers are those individuals who fished any length of time during the trip.

Question 4: Were you fishing primarily inshore (Bay, River, Sound, Intracoastal Waterway (ICW)) or offshore?

(if offshore) Were you 0–3 miles, 3–9 miles, or more than 9 miles out?

Record response(s) on the form.

If no fish were kept, then in which area did the majority of fishing effort take place?

See figure 2 for area locations.

Question 5: Where did you launch from?

Record response(s) on the form.

A “public” access point (Code “1”) is a boat launch open to the public regardless of whether it is free to use or a fee is required. A “private” access point (Code “2”) is a boat launch, boat slip, etc. that is on private property and not open to the public for use. The question helps us approximate the amount of charter effort taking place at private sites that we cannot access for the purposes of the dockside survey.

The ramps and marinas where we sample are all considered Public.

An example of a private launch would be a resident only ramp or marina. If you are still unsure see Marie, Erin, Vernon, or Jeanette.

Continue these questions for each additional trip.

Thank them for their time and participation. End survey.

Interview Status

Upon completion of the interview or exhausted the number of attempts the sampler should indicate the interview status.

1. *Complete Interview*: The captain or vessel representative is contacted and responds to all survey questions.
2. *Refusal*: The captain or vessel representative refuses to participate in the survey or refuses to provide data for any of the questions.
   If the captain or vessel representative asks not to be contacted for the survey in the future, they are considered “Non-Cooperative.” Write “NC” on the form and note the essence of what the captain or vessel representative said on the form. Data Management will withhold the captain or vessel representative’s name from the effort draw for approximately six months. After that time, representative will be made available to be drawn.
3. Ineligible: No longer available for charter fishing (e.g. sold out of the Alabama charter fleet, destroyed, sunk, lost).
4. *Unable to Contact:* None of the at least five contact attempts resulted in a response from the captain or vessel representative.
5. *Inactive:* The captain or vessel representative informs staff that the vessel will not be available for operating any charter trips in Alabama for more than, approximately, two weeks. If the vessel representative or captain reports that the vessel is no longer available for chartering trips, make note of that on the form. The vessel will not be drawn for the remainder of the license year. However, if the vessel owner/operator renews the party boat license the following year, the vessel will be marked as active and would be subject to being drawn again.

DATA ENTRY

At the end of each call week, For-Hire survey forms are to be compiled and entered in the Microsoft Access © file in the Division’s Cloud by 5:00pm Friday. Data is quality assessed for miscoded or incomplete responses, misreported vessel trips and high number of vessel trips within a sample week. If a vessel representative contacts the Division after the weekly call period, they should be “thanked for supplying data”. However, data received after the call period ends will not be accepted.

Alabama - For-Hire Survey Form

Period: **Eligibility:** _____ (EL=Eligible, IN=Ineligible, IA=Inactive, NC=Noncooperative)

Boat Type: **Boat Name:**

Representative Name: **Primary #:** **Secondary #:**

Second Contact Name : **Primary #:** **Secondary #:**

Sampler ID:	Sampler ID:	Sampler ID:	Sampler ID:	Sampler ID:
Date:	Date:	Date:	Date:	Date:
Time:	Time:	Time:	Time:	Time:
Call Back	Call Back	Call Back	Call Back	Call Back
1 ☐ No Answer	1 ☐ No Answer	1 ☐ No Answer	1 ☐ No Answer	1 ☐ No Answer
2 ☐ Voicemail	2 ☐ Voicemail	2 ☐ Voicemail	2 ☐ Voicemail	2 ☐ Voicemail
3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.	3 ☐ Wrong Number - new number avail.
4 ☐ Not available	4 ☐ Not available	4 ☐ Not available	4 ☐ Not available	4 ☐ Not available
No Call Back	No Call Back	No Call Back	No Call Back	No Call Back
5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number	5 ☐ Not in service/ Wrong number
6 ☐ Communication problem	6 ☐ Communication problem	6 ☐ Communication problem	6 ☐ Communication problem	6 ☐ Communication problem

Date	Day of Week	Trip No.	# of anglers	Area	Access Site
1	MON	1			
1	MON	2			
1	MON	3			
1	MON	4			
1	TUE	1			
1	TUE	2			
1	TUE	3			
1	TUE	4			
1	WED	1			
1	WED	2			
1	WED	3			
1	WED	4			
1	THU	1			
1	THU	2			
1	THU	3			
1	THU	4			
1	FRI	1			
1	FRI	2			
1	FRI	3			
1	FRI	4			
1	SAT	1			
1	SAT	2			
1	SAT	3			
1	SAT	4			
1	SUN	1			
1	SUN	2			
1	SUN	3			
1	SUN	4			

Total Recreational Saltwater Fin Fishing Trips with Paying Passengers _____

Comments:

DO NOT CALL

Database Comments:

No. of Attempts: _____

Interview Conducted by

ID#: _____

Interview Status (to be completed when telephone contact is made):

1 ☐ Complete Interview
2 ☐ Refusal
3 ☐ Ineligible
4 ☐ Unable to Contact
5 ☐ Inactive

Area Codes
0 = Inshore
15 = Gulf, 0-3 miles
39= Gulf, 3-9 miles
99 = Gulf, more than 9 miles

Access Site Codes
1 = Public
2 = Private

Figure 1. For-Hire Charter effort form to be used by samplers.

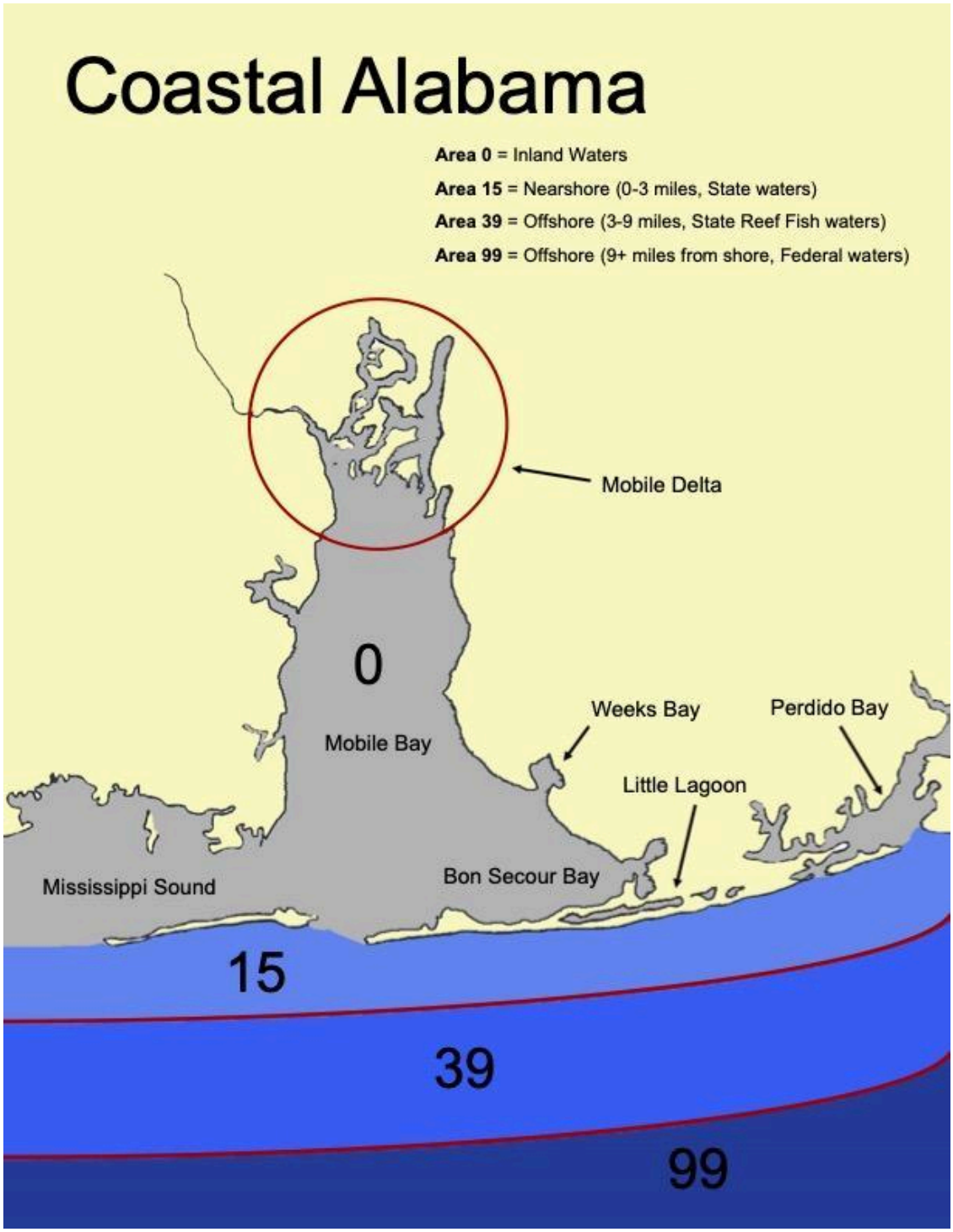


Figure 2. Effort areas.

AL Creel Private Angler Effort Survey Manual

PURPOSE 2
PRIVATE EFFORT SURVEY SUMMARY 2
CONTACTING SELECTED LCENSE HOLDERS 2
COLLECTING THE DATA 3
Call Script 3
Frequently Asked Questions 5
DATA ENTRY 5
Period Reports 6
Data 6
Voids 6
New Information 6
Kick Backs 6
Attempts 6
APPENDIX 8
Scripts 8
Email script 8
No script 9
Yes script 10
Yes script September 10
Period Reports Formatting 11
Data format 11
Void format 12
New Info format 12
Kickback format 12
Attempts format 12

PURPOSE

The AL Creel private angler effort survey is conducted to estimate weekly recreational saltwater finfish trips (effort). Private angler effort combined with dockside catch per fishing trip

information will generate harvest estimates of various finfish. The survey is designed to collect private boat and shore based saltwater fishing trip activity for each day within the prior week. Fishing effort estimates for charter boats are determined through the use of a separate survey. The estimates will provide important information to assist fisheries managers with the development of fishing regulations and seasons.

PRIVATE EFFORT SURVEY SUMMARY

The private angler effort survey is conducted each week (Monday – Saturday) by contacting randomly selected licensed anglers via email or phone. All persons possessing a valid Alabama saltwater fishing license or angler registry are included in the private angler effort survey sample frame. The frame includes the angler's name, Alabama recreational saltwater fishing license number, Gulf Reef Fish Endorsement (GRFE). Email addresses and phone numbers are included in the frame if the license holder opts to enter it at the time of license purchase or provides it during the effort survey.

The frame is being continually screened to remove unusable phone numbers and updated with new information as it becomes available. The number of individuals with a saltwater license continually changes throughout the year. The most notable sample frame change during the year is immediately after August 31st when annual recreational licenses expire. A significant decrease in the number of licensed anglers is observed which is followed by a consistent increase as anglers purchase new licenses.

The effort survey collects the following pieces of information:

1. Days fished in the prior week by day.
2. Whether fishing effort was from a boat or shore.
3. If the effort was on a boat, was it a PRIVATE vessel trip or PAID Charter vessel trip.
4. Area where most of the fishing effort within each trip occurred: Inshore waters, or the Gulf of America (0-3 miles, 3-9 miles or more than 9 miles out).
5. Time the fishing trip ended.
6. Whether the fishing access location was open to the general public.
7. Did the angler have a valid Alabama Saltwater Fishing License (asked only during the period immediately after the new license year begins).
8. Did the angler have a valid Gulf Reef Fish Endorsement.
9. Verify the email address on file.

CONTACTING SELECTED LICENSE HOLDERS

On Mondays, Alabama Marine Resources Division (AMRD) staff send a call list to the call center. The call center staff will randomize and attempt to contact 50% of the selected license or angler registry holders to collect fishing effort data for the previous week. A contact is when call center staff receive an affirmative or negative response to the fishing activity question or a refusal of the survey.

Call center will make an initial attempt per person and move to the next. Staff may make up to five call attempts per person. Staff will alternate one call occurring in the morning and the other call attempted in the afternoon of the following day. No more than two daily call attempts for each license holder as the end of the call week approaches. All calls for a given week must be completed by Saturday. Phone call attempts will not be conducted on the following holidays (9): New Year's Day, Martin Luther King Day, Mardi Gras, Easter Sunday, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. In weeks containing these holidays, daily phone call attempts on days that are not the holiday can be increased.

In all communications, remember to follow the script and be courteous to the license holder. Participation in the survey is voluntary, so it is important to maintain good rapport to sustain their participation in the survey. Always remember that anything you say can be construed as speaking on behalf of the University or the Alabama Marine Resources Division. A Project Manager will periodically monitor conversations to ensure compliance with protocols.

COLLECTING THE DATA

The following call script must be used by samplers when contacting licensed anglers for fishing effort information. It is necessary to follow the script to ensure contacted individuals are asked the questions in a consistent manner. This will ensure information is uniformly collected which would reduce any bias related to question order or terminology used. The sampler should make it clear to the angler that we are requesting data for trips that occurred during the prior selected sample week. If a license holder calls back after the weekly call period has ended (Saturdays at 7:30PM), they should be thanked for supplying information. However, information received after the call period ends will not be accepted. Data will be entered into Qualtrics© application following each reports format. Scheduled call times are between 8:30AM – 7:30PM central time, Monday – Saturday.
If the angler is a minor, the caller should ask to speak to the parent. The parent may provide all answer as long as the minor is present and questions are conveyed to the minor.

Call Script

Hi, may I speak with _____?
Hi, my name is _____ and I'm calling from the University of South Alabama on behalf of the Alabama Marine Resources Division. We are calling because you're the holder of an Alabama Saltwater Fishing license and you were selected to participate in a brief survey. This survey is very important for determining the amount of recreational fishing activity in the state.

If the call goes to a voice mail:
Hi, my name is _____ and I'm calling from the University of South Alabama on behalf of the Alabama Marine Resources Division. We'll be trying to reach you this week regarding saltwater recreational fishing. Please return this call at 251-499-0264.

Qualifying question: We would like to know if you went saltwater fishing last week (Monday – Sunday) in Alabama? ("Yes" is for fishing that occurs in saltwater areas of the state or other saltwater areas while on a boat and returning to Alabama.)

If “No” fishing trips were made during the sampling week, record “No” and skip to question 9.

If “Yes” to fishing trips, continue to question 1.

*Record Yes or No in the **FishingPeriod** field*

Question 1: What days did you fish last week?

Make note of days fished and proceed to question 2. The remaining questions must be repeated for each day when a fishing trip occurred.

Assuming the respondent answered “Yes” to the qualifying question, we need to know on which days each of the trips occurred.

Question 2: Did you fish from a boat (including a kayak) or shore (beach, bank, pier, jetty)?

*Record Yes or No in each of the applicable daily**Boat** fields. (Yes = by boat, No = shore based).*
Shore anglers are those who fished outside of a boat and include anglers fishing from piers, beaches, banks, jetties, etc. If an angler uses a boat to access jetties, for example, and gets out of the boat to fish standing on the jetties, he is considered a shore angler.

Question 3: Was it a PRIVATE or PAID Charter trip?

*Record Private or Charter in the daily**PrivateCharter** field.*

Question 4: Which area did you spend most of your fishing effort: Inshore waters, or the Gulf of America (0-3 miles out, 3-9 miles or more than 9 miles out)? (*See Figure 1)*
If no fish were kept, then in which area did the majority of fishing effort take place?

*Record in the daily**BOW** field **0**=Inshore, **15**= 0-3 miles out, **39** = 3-9 miles, **99** = more than 9 miles out. The inshore area is defined as all bays, rivers, sounds, inlets, estuaries, and the Intracoastal Waterway (ICW).*

Question 5: What time did your fishing trip end?

*Record in the daily**Time** field the time provided in 24-hour format.*

Question 6: Was your fishing access location open to the general public (This includes areas like boat ramps, piers, shorelines and Marinas)?

*Record in the daily**Public** field Yes or No. (Yes = Public, No = Private).*

Question 7*: The following question is to be asked in September only and includes any call week that contains a day in September.
The Alabama Recreational Saltwater Fishing License expires August 31st. Do you have a valid Alabama Saltwater Fishing License?

*Record in the **License** field Yes or No.*

Question 8*: The following question is to be asked in September only and includes any call week that contains a day in September.

Do you have a valid Gulf Reef Fish Endorsement?

*Record in the **GRFE** field Yes or No.*

Question 9: We would like to verify the email we have on file for you as _____.
OR
Would you like to provide a preferred email address for us to use if you are selected in the future?

Thank you so much for participating in the survey, and may you have a great day.

Frequently Asked Questions

Why are you conducting the survey or how will this information be used?
This survey is being conducted to determine an estimate of fishing effort. The effort will be combined with catch information provided by another survey to produce estimates of total recreationally caught fish.

How often are phone calls made or How was I selected for this survey?
Individuals contacted as part of this survey are randomly selected from the state's licensed saltwater angler database each week. There is a chance that an individual may be contacted more than once per license year.

What is a site open to the general public?

A publicly accessible site is a location where anyone can launch a boat (boat ramp, marina, etc.), for free or a fee, regardless of affiliation with any association, organization or club.

What is a charter trip?
A "charter trip" is a trip in which a licensed charter business was paid to go out on a vessel and attempt to catch fish.

What is a Gulf Reef Fish Endorsement or "GRFE"?

The Gulf Reef Fish Endorsement was established to help better manage our recreational fisheries. It is a needed if you intend to possess or land the following species**: Triggerfish, Jacks, Wrasses, Snappers, Tilefish or Groupers.**

DATA ENTRY

At the end of each call week, call data is submitted to Call Center Project Manager. Weekly (period) reports are to be submitted to AMRD no later than the second business day of the following week. Period reports will be in an Excel© format containing five worksheets named: Data, Void, NewInfo, Kickbacks, and Attempts.

Period Reports Worksheets

Data

The Data worksheet contains 51 variables. See the Appendix Period Reports for a more detailed explanation of the data format. The first nine variables are provided in the call list and are composed of: State, Year, Week, Name, Phone, Email, Customer_ID, Region and Minor. The next four variables are completed by call center staff: Date of the call, status of the contact attempts, surveyors name, and call status. The license holder's response to a fishing trip is recorded in the Fishing Period column. If the license holder responds "yes" to fishing, then the next five questions (Q1-5) should be asked for each day they report a trip. The next five variables are repeated for each trip taken: *daily*Boat, *daily*PrivateCharter, *daily*BOW, *daily*Time and *daily*Public. If the respondent reports two trips on the same day, a row should be inserted containing the respondents identifying information and responses as appropriate and the manager notified of the double entry. AMRD should also be notified of any double entries when the reports are submitted. License and GRFE data (Question 7 and 8) are only asked during calls about trips in September to ascertain renewal rate during the transition of license years.

Voids

Void entries identify license holders to be removed from future call lists. The following numerical codes are provided to explain why the license holder should be removed. See the Appendix Period Reports for a more detailed explanation of the Void worksheet fields. Removed numbers are reviewed and reinstated in the frame at the beginning of the license year. If the call center staff is 'hung up' on, then they should not attempt to call that number for the remainder of the week.

1 – Answered survey but would like to be removed from future surveys
4 – Refused/Not interested
7 – Hung up
10 – Deceased
11 – Incorrect or non-working phone number

New Information

Question 9 was included in the survey to improve the license frame and increase survey efficiency. If new information is provided by a respondent, the following fields should be completed: CUST_ID, Name,

New_Phone, New_Email. See the Appendix Period Reports for a more detailed explanation of the New Info worksheet fields.

Kick Backs

A kick back should be generated within the email delivery system when an entered email cannot be delivered or it 'bounces back'. When providing information related to the undelivered email the following fields should be completed: Email, Name, Week, CUST_ID, and Bounce_Reason. Bounce reasons are defined as 'Undeliverable, Non-existent, or Suspended'. Undeliverable indicates the email failed to send from the server. Non-existent indicates a hard bounce such as the recipient server not accepting emails, or the domain not being active. Suspended is a soft bounce when emails can't be delivered due to temporary reasons.

Attempts

The Attempts worksheet is a summary of the successive calls made to an individual phone number. Call center staff must make at least five call attempts per person unless Status is 'Survey Complete' or a given phone number is invalid. The status of call attempts 1 - 5 should be listed separately. The first call attempt number should be equal to the number of contacts on the call list, less any surveys completed in response to the email. Subsequent call attempts should decrease in number as surveys are completed. The total is sum of all the call attempts for the period. See the Appendix Period Reports for a more detailed explanation of the Attempts worksheet fields.

Table 1. Example of a call attempt summary.

	Emails	1st	2nd	3rd	4th	5th	Call Total
Attempts	162	1157	872	754	672	0	3455
Completed	96	750	402	306	201	0	1659

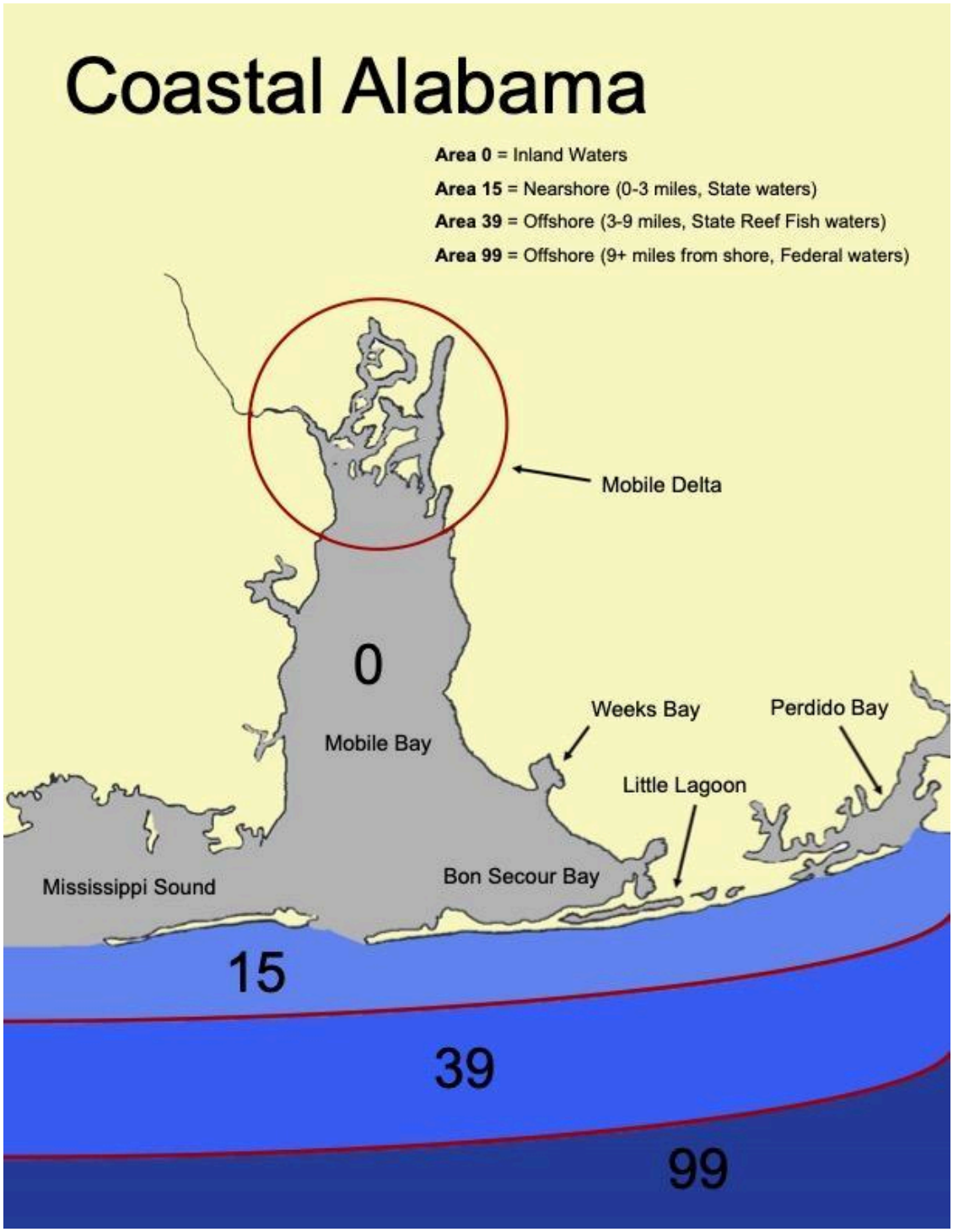


Figure 1. Effort areas.

APPENDIX

Survey Scripts

Email script

Dear Alabama Saltwater License Holder,

The University of South Alabama (USA), on behalf of the Alabama Department of Conservation and Natural Resources, Marine Resources Division, is conducting a survey regarding saltwater recreational fishing activity in Alabama. This survey is very important for determining the amount of recreational fishing activity in the state. Within the next few days, you may receive a phone call from USA, and a representative will ask you questions about your Alabama saltwater fishing activity. However, you have the option to avoid receiving the phone call by completing the survey below before 12PM on Tuesday. If you have any questions, please call USA at 251-499-0264.

The email survey will open at 9:00 AM Monday, month day, year, **and remain open through 12PM Tuesday**, month day, year.

WERE YOU RECREATIONALLY FISHING FOR SALTWATER FINFISH IN ALABAMA BETWEEN MONDAY, month day, year, THROUGH SUNDAY, month day, year?

Saltwater fishing is fishing that occurs in saltwater areas of the state or other saltwater areas while on a boat and returning to Alabama.

CLICK YES/NO BELOW TO ENTER THE SURVEY

YES (I recreationally fished last week)

NO (I did not recreationally fish last week)

The following questions will be asked if you went fishing.

1) WHAT DAYS DID YOU FISH LAST WEEK?

2) DID YOU FISH FROM A BOAT (INCLUDING A KAYAK) OR SHORE (BEACH, BANK, PIER, JETTY)?

3) WAS IT A PRIVATE OR PAID CHARTER TRIP?

4) WHICH AREA DID YOU SPEND MOST OF YOUR FISHING EFFORT?

5) WHAT TIME DID YOUR FISHING TRIP END?

6) WAS YOUR FISHING ACCESS LOCATION OPEN TO THE GENERAL PUBLIC?

Frequently Asked Questions:

Why are you conducting the survey or how will this information be used?

This survey is being conducted to determine an estimate of fishing effort. The effort will be combined with catch information provided by the dockside survey to produce estimates of total fish recreationally caught.

How often are phone calls made or how was I selected for this survey?

Individuals contacted as part of this survey are randomly selected from the state's licensed saltwater angler database each week. There is a chance that an individual may be contacted more than once per license year.

What is a site open to the general public?

A publicly accessible site is a location where anyone can launch a boat (boat ramp, marina, etc.), for free or a fee, regardless of affiliation with any association, organization or club.

What is a charter trip?

A "charter trip" is a trip in which a licensed charter business was paid to go out on a vessel and attempt to catch fish.

Thank you for your participation in our fishing effort survey.

Sincerely,

Alabama Marine Resources Division &

University of South Alabama

No script

Hi, may I speak with _____?

Hi, my name is _____ and I'm calling from the University of South Alabama on behalf of the Alabama Marine Resources Division. We are calling because you're the holder of an Alabama Saltwater Fishing license and you were selected to participate in a brief survey. This survey is very important for determining the amount of recreational fishing activity in the state.

1. We would like to know if you went saltwater fishing last week (Monday – Sunday) in Alabama? (Only answer "yes" for fishing that occurs in saltwater areas of the state or other saltwater areas while on a boat and returning to Alabama.)
   If NO;

2. We would like to verify the email we have on file as _____

   OR

   Would you like to provide an email address for us to use if you are selected in the future?

Thank you so much for participating in the survey, and may you have a great day.

Yes script

Hi, may I speak with _____?
Hi, my name is _____ and I'm calling from University of South Alabama on behalf of the Alabama Marine Resources Division. We are calling because you're a holder of an Alabama Saltwater Fishing license and you were selected to participate in a brief survey. This survey is very important for determining the amount of recreational fishing activity in the state.

*** We would like to know if you went saltwater fishing last week (Monday – Sunday) in Alabama? (Only answer "yes" for fishing that occurs in saltwater areas of the state or other saltwater areas while on a boat and returning to Alabama.)

IF YES,

1. What days did you fish last week?
2. Did you fish from a boat (including a kayak) or shore (beach, bank, pier, jetty)? (if by boat Q3 and Q4, if by shore skip to Q4,)
3. Was it a PRIVATE trip or PAID Charter trip?
4. Which area did you spend most of your fishing efforts: Inshore, or the Gulf of America (0-3 miles out, 3-9 miles or more than 9 miles out)
5. What time did your fishing trip end?
6. Was your fishing access location open to the general public (This includes areas like boat ramps, piers, shorelines and marinas)?
7. We would like to verify the email we have on file as _____.

OR
Would you like to provide an email address for us to use if you are selected in the future?
Thank you so much for participating in the survey, and you have a great day.

Yes script September

Hi, may I speak with _____?
Hi, my name is _____ and I'm calling from University of South Alabama on behalf of the Alabama Marine Resources Division. We are calling because you're the holder of an Alabama Saltwater Fishing license and you were selected to participate in a brief survey. This survey is very important for determining the amount of recreational fishing activity in the state.
**** We would like to know if you went saltwater fishing last week (Monday – Sunday) in Alabama? (Only answer "yes" for fishing that occurs in saltwater areas of the state or other saltwater areas while on a boat and returning to Alabama.)

IF YES,

1. What days did you fish last week?
2. Did you fish from a boat (including a kayak) or shore (beach, bank, pier, jetty)? (if by boat Q3 and Q4, if by shore skip to Q4,)
3. Was it a PRIVATE or PAID Charter trip?
4. Which area did you spend most of your fishing efforts: Inshore, or the Gulf of America (0-3 miles out, 3-9 miles or more than 9 miles out)
5. What time did your fishing trip end?

6. Was your fishing access location open to the general public (This includes areas like boat ramps, piers, shorelines and marinas)?
7. The Alabama Recreational Saltwater Fishing License expires August 31st. Do you have a valid Alabama Saltwater Fishing License?

If Yes: Ask Q #8, ONLY ask Q #8 if they are not in the GRFE strata found on the Data tab (Column H)
If No: Ask Q #9

8. Do you have a valid Gulf Reef Fish Endorsement?

If they DO NOT have a GRFE and ASK "What is a GRFE" explain: The Gulf Reef Fish Endorsement was established to help better manage our recreational fisheries. It is needed if you intend to possess or land Triggerfish, Jacks, Wrasses, Snappers, Tilefish or Groupers.

9. We would like to verify the email we have on file for you as _____.

   OR

   Would you like to provide an email address for us to use if you are selected in the future?
   Thank you so much for participating in the survey, and may you have a great day.

Period Reports Worksheets and Field Formats and Descriptions

Data worksheet

NAME	TYPE	FORMAT	FORMATL	VALID_RESPONSES	DESCRIPTION
STATE	2	$	1	1	State in which fish were landed
YEAR	2	$	4		Year in which calling occurred
WEEK	2	$	2	1 - 53	Week in which calling occurred
CUST_ID	2	$	6		In-house generated number specific to license holder
LASTNAME	1		40		License holders last name
FIRSTNAME	1		40		License holders first name
MIDDLENAME	1		40		License holders middle name
SUFFIX	1		40		License holders suffix
PHONE	2	$	10		License holder's phone number
EMAIL	1		50		License holder's email
REGION	1		19	"Reef Endorsement", "Resident", "Resident" Noncoastal, "Nonresident",	Criteria used to define license holders use of the fishery
MINOR	1		3	"Yes" or "No"	Is angler under 18 years
DATEOFCALL	1		22		Calendar date and time when a call or survey occurred
STATUS	1		24	"Survey Complete (Email)", "Survey Complete (Phone)", "Survey Incomplete", "Surveyed Refused"	Indicator of contact's completion of the survey
SURVEYOR	1		40		Person's name conducting call
CALLSTATUS	1		9	"Answered" or "Call Back" "Refused"	Indicator of attempt by phone or email

FISHINPERIOD	1		3	“Yes” or “No”	Did license holder fish during the week in question
LICENSE	1		3	“Yes” or “No”	Did license holder possess a valid license (Sept Only)
GRFE	1		3	“Yes” or “No”	Did license holder possess a GRFE (Sept Only)
DAILYS					Monday-Sunday
BOAT	1		3	“Yes” or “No”	Trip was by boat
PRIVATECHARTER	1			“Private” or “Charter”	Trip was Private or Chartered
BOW	2	$		“0”, “15”, “39” or “99”	Area in which most of the fishing effort occurred
TIME	2	$	8		Time when fishing trip ended
PUBLIC	1		3	“Yes” or “No”	Access to fishery was at a public site

Void worksheet

NAME	TYPE	FORMAT	FORMATL	VALID_RESPONSES	DESCRIPTION
LASTNAME	1		40		License holders last name
FIRSTNAME	1		40		License holders first name
MIDDLENAME	1		40		License holders middle name
SUFFIX	1		40		License holders suffix
CUST_ID	2	$	6		In-house generated number specific to license holder
VOID_REASON	1		2	“1”, “4”, “7”, “10” or “11”	Indicator of reason to be removed from future call list
YEAR	2	$	4		Year in which calling occurred
WEEK	2	$	2	1 - 53	Week in which calling occurred

New Info worksheet

NAME	TYPE	FORMAT	FORMATL	VALID_RESPONSES	DESCRIPTION
CUST_ID	2	$	6		In-house generated number specific to license holder
LASTNAME	1		40		License holders last name
FIRSTNAME	1		40		License holders first name
MIDDLENAME	1		40		License holders middle name
SUFFIX	1		40		License holders suffix
NEW_PHONE	2	$	10	2516879909	Updated license holders phone number
NEW_EMAIL	1		50		Updated license holders email
YEAR	2	$	4		Year in which calling occurred
WEEK	2	$	2	1 - 53	Week in which calling occurred

Kickback worksheet

NAME	TYPE	FORMAT	FORMATL	VALID_RESPONSES	DESCRIPTION

CUST_ID	NAME	TYPE	6		In-house generated number specific to license holder
LASTNAME	1		40		License holders last name
FIRSTNAME	1		40		License holders first name
MIDDLENAME	1		40		License holders middle name
SUFFIX	1		40		License holders suffix
EMAIL	1		50		License holder's email
BOUNCE_REASON	1		15	"Undeliverable", Non-existent", "Suspended"	Reason Email failed to be delivered
YEAR	2	$	4		Year in which calling occurred
WEEK	2	$	2	1 - 53	Week in which calling occurred

Attempts worksheet

NAME	TYPE	FORMAT	FORMATL	VALID_RESPONSES	DESCRIPTION
1st	2	$	4		# primary contacts attempted
2nd	2	$	4		# secondary contacts attempted
3rd	2	$	4		# tertiary contacts attempted
4th	2	$	4		# quaternary contacts attempted
5th	2	$	4		# quinary contacts attempted
Total	2	$	4		Sum of contacts attempted

January 25, 2026

Questions for Alabama

Alabama Recreational Creel Program Manual

1. Section AL Creel Dockside Survey for Landing Rate Estimation, Site Sample Frame – Page 2. This is in the text: "*Fishing pressure is calculated by the program manager based on the number of eligible fishing trips recorded on the AL Creel Dockside summary form*."
    a. When is the pressure information collected for use in a particular month across one week, or one randomly chosen day per weekday and weekend? Building pressure library. Still using some MRIP to fill in gaps of unsampled sites for AL Creel in 2025.
    b. Is this information compared with historic data as a measure of quality / consistency? No historic AL Creel pressure data by site, day-type and mode. Any comparison would include 2026 AL Creel pressure values to MRIP pressure values used for sampled sites in 2025.

2. Section AL Creel Dockside Survey for Landing Rate Estimation, Assignment Selection – Page 5.
    a. As summarized in the "Site Sample Frame" section, 12 pressure estimates are calculated for each public site "*for each fishing activity (Private, Charter, and Shore), Shifts (8AM – 2PM & 2PM – sunset), and for each day type (weekday/weekend)*." Two "average proportional probabilities" are calculated from the pressure estimates, one by day type. In the second stage of selection (Assignment Selection): "Dates and shift times are randomly selected with replacement for each sub-week. Equal weights are used for AM and PM shifts. Dockside schedules are distributed to staff monthly." Are the pressure estimates used for the second-stage selection or is this a simple random sample without replacement chosen within site? Using the pressure with replacement. Text in document was updated to match estimation code.
    b. If the latter, how different are the estimated pressures to justify this simplification? N/A
    c. Are any pressures effectively zero and excluded from selection? Included, but not drawn because of zero pressure.
    d. Given the with-replacement selection is correct, what is the protocol if the dates / time shifts are selected more than once? Has not occurred. If a second duplicate assignment were drawn the duplicate assignment would be removed.

3. Section AL Creel Dockside Survey for Landing Rate Estimation, Considerations – Page 5. This is in the text: "*Given that only one angler per fishing party provides data for the trip, the question list is short. Essentially anglers from the entire fishing party are interviewed and this allows for an increased number of trips interviewed during an assignment. The short interview time should also appeal to anglers and increase participation (reduce refusal rate).*"
    a. We assume the total catch for the party and the number of anglers is collected, so that catch/angler is computed to be then multiplied by the estimated number of angler trips. Can you confirm? Yes.
    b. Also, what information do the other anglers provide if the catch/angler is already collected from the primary respondent? All information is at the party level. Text removed from manual as highlighted above.

4. Section AL Creel Dockside Survey for Landing Rate Estimation, Considerations – Page 5. This is in the text: "… data lost to weather cancellations or poor fishing conditions (resulting in no interviews)."
    a. Are these days treated as "zero harvest" records and included in the estimates or excluded? No, those assignments are excluded. No information is collected which may be missed due to the cancellation of the assignment, partial assignments are included.

5. Under Effort Surveys, Sampling Design, Table 2, Pages 6 – 7. We would like a clarification on the four strata.
    a. Is the sampling frame a list of saltwater licensed anglers, a subset of which also have a GRFE? No.
    b. Are the 4 strata non-overlapping, in the sense that the first 3 are licensed but non-GRFE? Yes. We were not sure of the angler counts in the table for GRFE are also included in the Coastal, Non-coastal, and non-resident groups? They are not.
    c. Additionally, it is mentioned above the table that "*The frame is being continually screened to remove unusable phone numbers.*" Is the frame also refreshed as needed, say, monthly to capture newly licensed anglers? Refreshed weekly.
    d. Please confirm that the sample is selected from the frame each month or two-week period without regards to whether the angler was selected in a prior period. Two-week period, if in week 1, not in week 2. There is mention on page 8 that "Discussion above is addressing angler response burnout due to frequent calling" may refer to the number of contacts needed to get a complete vs. number of contacts to get a new interview per week / month. Both, discussion applies particularly in the month of

September when the license frame is small and ~12% of the frame is contacted each week.

6. Under Effort Surveys, Sampling Design, Table 2, Page 7. Thank you for the details on the multimode data collection protocol.
    a. Are there sizable numbers of online participants to enable an evaluation of estimates / data quality by mode? Online varies; ~5% of the total contact attempts.
    b. Is there a minimum number of contact attempts made for each case or could the "quota of 50% contact rate" cause some sample cases without an email address to have no contact attempts? The contact list is based on a phone number and an email is optional. Any license holder without a phone number is excluded. One email is sent if an address is available. If not responded in 24 hr, then up to 5 phone call attempts are made.
    c. Is there an evaluation of participant responses by presence / absence of a valid email address? No, but this will be included in the next summary/certification review documentation.
    d. Please confirm that the "Information collected during the private angler effort survey" is for the prior 7 days. Yes, see page 6.

7. Under Effort Surveys, Considerations, Page 8.
    a. Is quoting a 1994 paper on survey methods still relevant over 30 years later? It seems survey data collection has drastically changed since then. We suggest removing this "justification" for doing this by phone. It would be helpful to document a range of response rates. For now, we will leave the reference but will remove the reference and add response rate ranges after additional data is collected.
    b. Fourth paragraph: This paragraph is unnecessary. If you estimate the average catch/trip (which will include many zeros for species not targeted) and the total number of trips correctly overall, you are allowed to multiply them, no assumptions needed. You can create BETTER estimates if you can separate out trips by species (or by type of trip, etc.), in the sense of improved precision. Paragragh removed.
    c. Last paragraph. Further explanation of this paragraph is needed. See above comment. If the overall effort with the GRFE stratum is weighted corrected into the estimate, then this is not an issue. This is important for us to see: it is stated in a few places that for both effort and catch, weights are applied. However, it is never explicitly shown how these weights are constructed. This needs to be explained, either in formulas or in words, in

order to see how the weights account for the stratification and clustering. Addressed in the Program Manual document as part of the text.

8. Charter Effort Survey, Sample design, Page 9.
    a. Second paragraph. It seems there is not a 'simple random sample' of vessels since a higher percent comes from the GRFE. Is this weighted in the analysis for effort? It is necessary to explain how the GRFE and non-GRFE samples are weighted in order to assess if the estimators is correct. Two groups; GRFE and 'Other'. A sample weight for each group is calculated as the proportion of vessels within the group to all of the vessels selected for both groups in the week.
    b. We were curious on what the response rate is for vessels, given response rates for a household phone survey is less than 10%? For charter the mean weekly rate fro completed surveys (status=1) was 67.1%.

9. Charter Effort Survey, Considerations, Page 11.
    a. As a follow-up to the sample design questions, are the vessel rep samples designed somehow so that no person is contacted in consecutive weeks? The vessel will not be pulled in consecutive weeks, but a vessel representative may be contacted for multiple boats in consecutive weeks.

10. Calculations
    a. This comes back to our question above in (3). Why are the additional anglers in a party also interviewed since the 'token representative' provides the data for all anglers? They are not interviewed. We recognize that Equation 2 is estimating the catch/person-trip , given the x variable in the denominator. However, we would like to see the weight, especially since the selection of assignments in done with replacement and hence the weight is not the usual one. (Note that it is possible to do this without replacement (unequal-probability systematic sampling) to avoid the issue of potentially selecting the same assignment twice.)
    b. It states the rates are derived from Eq 1, but that is missing from the document. Is this the appropriate Eq 1:

$$Mean\ Angler\ Harvest\ Rate\ = \frac{\#\ of\ Fish\ Harvested\ by\ Party}{Total\ \#\ of\ Anglers\ in\ Party}$$

Should there be a subscript to indicate that this rate is specific to a species? Yes, indicated as the species landing rate.

c. Please confirm that eh is the estimated total effort and not the mean effort per angler, i.e., $e_h = \sum_{i=1}^{n_h} e_{hi}$. Is this a weighted estimate that accounts for nonresponse? eh is the estimated total effort. Yes, all vessels selected for each week are included in the SAS© proc surveymeans statement.

d. Please confirm the adjusted calculation for Total Landing, Eq 20

$$\hat{H} = \hat{E}^* \times \hat{HR}$$

$\hat{HR}$ is calculated from the APAIS-like survey and shown in [2], and

$\hat{E}^*$ is calculated from the telephone survey (Eq 8) and adjusted by the dock-side survey, $\hat{E}^* = e$. Yes.

e. The document mentions use of the Goodman formula for a product of two independent estimators. However, the two estimators are NOT independent, because a frame coverage adjustment based on the intercept survey is applied to the effort estimator. Hence, the variance estimator is incorrect because it misses a covariance term (this was mentioned in previous reviews). We are not going to address this comment at this time as it also is an issue in the LA Creel and MRIP surveys.

Sampler Manual

1. Holidays: it seems there would be quite a bit of fishing on these days. Why are they not included? From the text in the documentation: "*Most holidays are excluded from the assignment draw process. Excluded holidays include New Year's Day, Martin Luther King Day, Mardi Gras, Easter Sunday, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day."* Not sampling on these holidays is potentially a problem given the likely heavy fishing activity, but we can understand that it's difficult to staff. At the very least, it would be good to add an explanation that these days will be assumed to be similar to regular weekend days, and then make sure they are put in the weekend stratum for estimation purposes. Aligns with LA Creel. Heavy activity would be captured in the effort survey. Catch is relatively stable and may decrease during increased activity.

2. Sampler Responsibilities, Page 4. Please clarify the latter part of the sentence regarding no mode: "*Some sites may have multiple fishing modes. In such cases,*

attempt to interview anglers from each mode giving preference to no mode." We sample across all modes, however samplers are instructed to focus on the assignment mode when anglers from different modes are present at the same time.

3. AL Creel Dockside Survey, Interviewing Fishing Parties,
    a. Page 7. Noting, "Attempt to interview an adult from each party, however, a minor can be interviewed if an adult is unavailable. Young children (under 10 years of age) should be avoided for questioning,"
        i. How do field staff collect age of minors? We do not directly collect age information. It is a qualitative decision by the sampler.
        ii. In other surveys, interviewing children is prohibited without parental permission and regardless may result in poor response quality. Is there a lower bound on age of the respondent? It is a qualitative decision by the sampler.

    b. Page 8. Please clarify why "*Anglers who report they targeted freshwater finfish or shellfish or saltwater shellfish are not eligible for an interview even if they harvested saltwater finfish species during the trip*." Is this considered to an outlier situation so that removing these saltwater finfish counts is reasonable? The saltwater catch would be incidental and removed. No targeted freshwater species are included.

4. Page 18, Charter level survey.
    f. It appears the two strata used to obtain effort are disproportionally sampled. Is this accounted for in a weight? Please either present the weights or explain in words how they account for this. A sample weight for each group is calculated as the proportion of vessels within the group to all of the vessels selected for both groups in the week.
    a. We asked earlier what the response rate was for this – there seems to be quite a bit of info asked of the captain. mean weekly completed surveys (status=1); 2025 - 67.1%.

Private Angler Survey Manual

1. Contacting license holders:
    a. How is the random call selected. Is that a set number of times a number is contacted before moving on to the next number? Once.
    b. (Voids) Why are "hang ups" removed from further contact when the intended respondent may not have been contacted? Considered a

non-verbal refusal, just as a walk-away from the dockside survey is considered a refusal.

2. How are “unusable phone numbers” identified? ‘*Week of call selection’,* Coded as ‘11’-see page 6. How long before calling are the phone numbers screened for usability (e.g., phone number inactive until their bill has been settled)? This issue is being reviewed. An option under consideration would be if the first call attempt had a status of ‘11’ that would cause the angler to be added to a list of anglers with unusable numbers, but the unusable number would be retained with the angler in the master licensed angler file from which the weekly calls are selected from. If the angler is selected a second time, the angler and his/her unusable number(s) would be sent to the call center. If the number(s) are recorded as unusable after the second selection, then the unusable contact number(s) would be removed from the angler’s record, but the angler’s record would still be maintained in the master licensed angler file.

Charter Call Manual

1. This was asked above in the program manual. Explain the disproportional stratification of calls to charters and how this is handled in the weights. Addressed in the Program Manual.

2. Data Entry, Page 5 of 7. How are data entered manually into the MS Access system verified or assessed for quality? SAS code checking for miscoded or incomplete (missing) responses, misreported vessel trips and high number of vessel trips within a sampling week.

Peer Review of AL Creel Survey Design

Jill Dever, Ginny Lesser, Jean Opsomer

April 2, 2026

Terms of Reference:

1. Given that the AL Creel survey design is an adaptation of the certified LA Creel design, does the modified design continue to meet the criteria for certification, particularly with respect to the following subset of terms?
    a. Does the survey design follow a formal probability sampling protocol with known inclusion probabilities at all stages and/or phases of sampling?
    b. Do the estimation methods appropriately weight the sample data to account for the sampling design and produce design-unbiased point estimates and variance estimates?
    c. Is the accuracy of survey estimates dependent upon key assumptions? What are these assumptions? Are they clearly identified in survey documentation? Are they reasonable?
    d. Have non-sampling errors, including nonresponse/noncompliance, noncoverage (e.g., off-frame effort) and measurement errors been evaluated? Are appropriate methods in place to correct for potential biases resulting from non-sampling errors?
    e. Are appropriate methods in place to identify and evaluate the effects of implementation errors or deviations from design specifications on survey estimates (e.g., monitoring response rates, reviewing survey dispositions and/or response dispositions among interviewers, strata or reference periods)?

2. Does the AL Creel survey design offer equivalent or improved utility compared to the current survey program (i.e., MRIP APAIS-FES and/or MS Tails n' Scales) for stock assessments and fisheries management decisions?

Expert Evaluation:

1. *Given that the AL Creel survey design is an adaptation of the certified LA Creel design, does the modified design continue to meet the criteria for certification, particularly with respect to the following subset of terms?*

As further detailed below, we see no reason why the AL Creel should not be certified. Its overall structure continues to be based on complementary intercept and effort surveys, with designs that follow standard design-based sampling and estimation methodologies. A number of specific issues are described below, but none of them are sufficiently important to require addressing prior to certification.

   a. *Does the survey design follow a formal probability sampling protocol with known inclusion probabilities at all stages and/or phases of sampling?*

The nominal designs of both the catch and effort surveys are probability designs. The effort surveys have stratified element designs, and the intercept survey is a stratified two-stage design (regarding the latter, there is a minor error on p.2 of the Program Manual, where it is stated: "*The secondary sampling unit is the trip type*." The secondary sampling unit is the trip, not the trip type). These designs follow accepted survey methodology and are appropriate for these surveys. Because they are unequal-probability designs, they require the use of survey weights in the calculation of estimates and variance estimates.

There are two weighting issues that should be addressed, either in the weight description (if misunderstood) or in the calculations themselves. Both should be straightforward to address, so that certification can still proceed under the assumption that these issues will be taken care of.

The first issue concerns the second-stage (i.e. within-assignment) weight described on p.2 of the Program Manual (referred to as an adjustment to the first-stage weight in the text): *"[The first-stage weight] is then adjusted by multiplying it by the ratio of interviewed trips (or parties) to the total number of trips observed (interviewed plus missed). Refused interviews are excluded from the calculation.*" However, this leads to a weight that is too small for an assignment in which some interviews were refused. Trips with refused interviews should be treated in the same way as missed trips for the purpose of computing the second-stage weight. In other words, augmenting the definition of "total number of trips observed" to include interviewed, missed, and refusals would be appropriate.

The second issue concerns the weight description for the effort surveys described on p.7 of the Program Manual: "*Weekly private effort that is reported by anglers is spread across the four regions. Weights are generated by taking the region sum divided the state sum of angler trips. Weekly charter effort that is reported for each vessel trip is spread across two groups; GRFE and non-GRFE trips. Weights are generated by taking the strata trips sum divided the state sum of charter trips."* This does not seem to be correct as written. The samples of households/vessels are selected with equal probability within each stratum, and the weights for the effort surveys are equal to the inverse of the fractions interviewed in each stratum. The formulas for the effort estimates on p.15 appear to be correct, so this is not a major concern.

The validity of the actual designs is dependent on how well they are implemented, e.g. does each sampling unit only appear in a single stratum (i.e. are GRFE anglers not also listed in the regular license strata), do all angling sites have a chance to be selected, etc. Based on the information provided, this appears to be the case for AL Creel, with most deviations from perfect implementation either considered negligible (e.g. sites with extremely low activity are not sampled) or corrected for in estimation (e.g. catch at private sites is explicitly assumed to be similar to that at public sites). These assumptions should be periodically checked to assume that they remain valid over time.

b. *Do the estimation methods appropriately weight the sample data to account for the sampling design and produce design-unbiased point estimates and variance estimates?*

The estimation methods rely on standard design-based weighting approaches, so that both the point and variance estimates will be statistically valid for their respective targets when correct weights are used. The two issues identified above should therefore be addressed. We have two additional comments on the estimation methods.

The first one concerns the treatment of the state holidays, which are excluded from the sampling frame for the catch survey (i.e. both in sampling and in estimation). The nominal target population is angling occurring during all days of the year, so there is a (minor) discrepancy between the frame and the population of the intercept survey. We recommend that this be acknowledged in the program description, similarly to the explanation of what happens with angling at private access sites and night-time fishing. In other words, the result of the statement on pg. 6, "*… when a holiday falls on a specific day type (e.g., weekday or weekend), the available site/day/time combinations for that day type are reduced, and selection probability is redistributed among the remaining eligible days within that month*", suggests that holiday and non-holiday angling are similar.

The second concerns the variance estimation for total landings. The variance formula used assumes that the estimator of total landings is the product of two *independent* estimators: adjusted effort x catch. But this assumption is incorrect due to the presence of the estimated license compliance rate in the estimator for adjusted effort. Because both the catch and the license compliance rate are estimated using the intercept survey, adjusted effort and catch are *not* independent. A correct variance formula should therefore include a covariance term. That term could lead to a larger or smaller variance estimate, but the current estimator that ignores the covariance term is not unbiased.

While this second concern points to a conceptual error in how the variance of total landings is estimated, we understand that the same error is present in the MRIP and LA Creel variance estimates. Hence, the fact that it appears in LA Creel should not be something ADCNR needs to correct on its own. This should be managed by MRIP so that all states use any similar corrections to this estimator.

c. *Is the accuracy of survey estimates dependent upon key assumptions? What are these assumptions? Are they clearly identified in survey documentation? Are they reasonable?*

The validity of the estimates assumes that catch at sites and times that are excluded from sampling (very low-activity sites, private access sites, night-time / holiday angling) is similar to that at eligible sites and times. These assumptions are also present in MRIP to some extent, so this is not an immediate concern for AL Creel. While the private access sites' equivalence would be difficult to assess, the effect of night-time returns could be assessed with a targeted study, so it might be worth undertaking such an investigation in the future.

Another implicit assumption is that nonresponse in the intercept and effort surveys is assumed to be non-informative (i.e. respondents and nonrespondents have similar angling behavior within strata and within sites). This assumption is also present in MRIP, so this is not an issue for ADCNR to address, unless MRIP provides guidance to all states to address this in future.

d. *Have non-sampling errors, including nonresponse/noncompliance, noncoverage (e.g., off-frame effort) and measurement errors been evaluated? Are appropriate methods in place to correct for potential biases resulting from non-sampling errors?*

See 1(c) above for a discussion of accounting for non-sampling errors. The assumptions and estimation adjustments follow the MRIP approach closely. Since this is a new program, we recommend performing evaluations of the sampling and estimation

methods in the future, including site frame and pressures, quality of license frame information, etc.

e. *Are appropriate methods in place to identify and evaluate the effects of implementation errors or deviations from design specifications on survey estimates (e.g., monitoring response rates, reviewing survey dispositions and/or response dispositions among interviewers, strata or reference periods)?*

Details on the quality control/quality assurance for the charter effort are presented in the AL Creel Charter Call Manual. However, no details are provided in this report, such as the percentage of calls monitored by the supervisor and the steps/analyses of the data prior to acceptance of the final form. During our discussion with AL staff, it was explained that a paper form is reviewed and QA/QC is done on phone calls. However, this should be documented for the program. This will be informative to detect changes over time.

The AL Creel Private Angler Effort Survey Manual provides details on contacting anglers and the scripts used to collect the data. However, no details are provided on the QA/QC followed. For example, it would be helpful for AL to document and track questions such as: What percent of calls are monitored by a supervisor? Is tracking done to summarize response rates over time? What data quality checks are done to check for data entry errors? How frequently are changes made to the data to correct the originally collected information?

The AL Creel Program Manual does provide more detail on the QA/QC steps for the onsite visits done to collect catch data. We expect that the percentage of supervisor visits for interviewers is tracked to detect any concerns with data quality for a specific interviewer, and retraining initiated as needed.

As noted above, nonresponse is expected in nearly all surveys currently, and this study is no exception. We suggest that any additional opportunities to assess nonresponse bias be explored in order to verify the assumptions on responses made by AL.

2. *Does the AL Creel survey design offer equivalent or improved utility compared to the current survey program (i.e., MRIP APAIS-FES and/or MS Tails n' Scales) for stock assessments and fisheries management decisions?*

The overall structure of AL Creel continues to be based on complementary intercept and effort surveys, with designs that follow standard design-based sampling and estimation methodologies. Hence, the estimates are expected to be compatible with those of existing state surveys for the purpose of stock assessment and fisheries management. In fact, by making the designs more similar to those of LA and MS, implementation of AL Creel should facilitate direct comparisons between state fisheries that are targeting similar stocks and can lead to synergies in developing future methodological improvements.

Whether there are utility improvements will depend primarily on the sample sizes of the intercept and effort surveys compared to those in prior surveys. In addition, since most assumptions for AL Creel are similar to MRIP, we assume that the survey designs are equivalent. We were not provided with detailed sample size comparisons between the two, so are not able to comment on the variance impact specifically.

Mississippi Recreational Creel Survey and Data Manual

MS Creel Table of Contents

SALTWATER FINFISH LANDING STATISTICS..... 2

Access Point Survey..... 2

Purpose..... 2

Site Sample Frame..... 2

Sample Draw Design..... 3

Survey Design..... 4

Survey Question Considerations..... 5

Data Collection Considerations..... 6

Effort Survey..... 7

Private Angler Effort Survey..... 7

Angler Sample Frame..... 7

Sample Design..... 7

Call List Selection..... 8

Federal Red Snapper Season..... 8

Considerations..... 8

Charter Effort Survey..... 9

Charter Frame..... 9

Sample Design..... 9

Call List Selection..... 10

Considerations..... 10

Calculations..... 10

Landing Rate Estimation..... 10

Methods..... 10

Considerations..... 13

Total Landings Estimation..... 13

Methods..... 13

Quality Control/Quality Assurance..... 14

Literature Cited..... 15

MS Creel

SALTWATER FINFISH LANDING STATISTICS

Purpose
To provide recreational fishery information to aid in the management of Mississippi's valuable fishery resources. The saltwater component of the recreational fishery encompasses state waters including marsh habitat, bays, beaches and nearshore areas as well as the offshore federally managed waters of the EEZ. These are open systems where the only boundary to the species is its habitat requirements.

Methodology
The MS Creel survey is based on the LA Creel survey design, where an on-site dockside survey is combined with off-site telephone surveys to calculate total landings estimates for fish species across different recreational fishing activities. The dockside survey is primarily used to estimate landing rates (landing per angler trip or landing per charter trip) and the telephone survey is primarily used to estimate total effort (total number of anglers or charter trips). Total landing estimates for each recreational sector for a certain period are simply the product of the landing rate and total effort values.

Access Point Survey

Purpose
The dockside survey collects trip information and informs catch rates for species landed by Mississippi's saltwater recreational anglers.

Site Sample Frame
The dockside survey only surveys public access sites (i.e., boat launches, marinas, piers, bulkheads) utilized by saltwater anglers. Each site is evaluated annually on the intensity of fishing pressure (estimated average number of trips per day within 8AM – 8PM). Continuous pressure values are developed for each sample period (week) of the year, accounting for seasonal shifts in angler site usage and behavior. The development of these values is sourced from a combination of on-site observations of trailer activity, local knowledge, and historical trip data. Current data shows that implementation of four fishing seasons are able to account for the major shifts in angler activity. This will continue to be evaluated on an annual basis to determine if more refined adjustments are needed. Pressure values per "season" are produced for each fishing mode (Private, Charter, and Shore) by day type (weekday/weekend) for each sample site in the frame, resulting in 6 pressure values that can be drawn from in any given sample period. Weekdays are Monday – Thursday and weekend days are Friday – Sunday.

For each site in the frame, sample weights are developed as proportional probabilities derived from the individual pressure value for each site and divided by the sum of pressure values for all sites with non-zero pressure values of the same. This process is executed for each mode (shore, charter, private vessel) and each day type (weekday, weekend) combination in a given sample week. The result is six site-specific sample weights. These weighting factors sum to 1 within the same mode and day type to be used during assignment selection (described below).

Sample Draw Design

Prior to development of draws, a calendar is developed following the federal work week resulting in 52-53 sample weeks per year. As with the federal work week, the sample weeks are structured Monday to Sunday. Major holidays are dropped from the draw frame to account for issues in holiday staffing requirements. The draw process for each sample week references the applicable sample weights and is then progressed through independently from one week to the next. Draws are conducted with replacement to ensure the full weight of the sample sight is realized in the draws.

The number of surveys needed to be drawn for a given week is based on the following:

> Non-summer: One Charter, One Shore, Seven Private Recreational to reach nine dockside surveys per sample period. Three of the dockside surveys are to occur on weekdays and the remaining six are to occur on weekends.
>
> Summer: Two Charter, One Shore, Eleven Private Recreational to reach fourteen dockside surveys per sample period. Five of the dockside surveys are to occur on weekdays and the remaining nine are to occur on weekends.

The possible shift for each assignment is 8am – 2pm or 2pm – sunset. Equal weights are used for AM and PM shifts. The sample week is then checked to ensure requirements are met including a check for duplicate surveys with the same site, date, and shift. If duplicates are identified, the sample week is re-drawn.

Site Sample Frame Considerations

The number of assignments by mode per week was determined based on the number of sites that experience fishing pressure by mode. Since greater fishing activity occurs on the weekends, assignments are divided so that weekends are drawn more often than weekdays (Table 1).

Private recreational vessels (PRV) represent the largest contribution to landings in Mississippi and result in the majority of associated management needs. Most of the PRV sites also feature shore mode access and can provide data for both. The portion of the charter vessel fleet that trailers to sites without a fixed slip can also be opportunistically sampled. Only one shore mode site is selected per week as this mode features consistent near-zero catch rates for managed species, and many sites produce little to no activity during a 6-hour period. When landings are observed, shore mode has the greatest uncertainty with estimates produced. The site register of shore mode-specific sites has been constrained to those with high use relative to the majority of other shore mode sites. This is done to maximize the efficiency of the least efficient survey mode. Opportunistic shore mode sampling at PRV drawn sites will also contribute to the efficiency of data collected. It should also be noted that increasing the number of shore mode sites drawn per week is also unlikely to result in substantive improvement to the uncertainty of the estimates produced due to the low number of managed species observations. Only one charter specific site is drawn per week. Mississippi currently has only three charter mode-only harbors with consistent charter activity. While the survey obtains information from the charter customers, charter captains also provide information and can feel inconvenienced by frequent dockside surveys. To avoid survey fatigue among charter captains, only one of the three charter mode only sites will be drawn per week. Other PRV site surveys with mixed mode activity will be able to opportunistically sample and contribute as well. Creel dockside intercept staff availability and scheduling is conducted monthly, but this does not effect the structure of any sample weeks within the program.

Table 1. Distribution of weekly assignments (N = 9) by day type and fishing activity.

Season	Weekly Assignment Distribution		Weekly Assignment Mode Distribution		
	Weekdays	**Weekends**	**Private Recreational Vessel**	**Shore**	**Charter**
Low-Season	3	6	7	1	1
High-Season	5	9	11	1	2

Survey Design

The primary sampling unit is a specific site, day type, and shift when an interviewer will be present to survey anglers. The secondary sampling unit is the fishing mode for each dockside intercept within a primary sampling unit, which may differ from that of the mode drawn for mixed-mode sites. From here on, primary sampling units are referred to as "assignments". Interview procedures can be found in the "MS Creel Field Manual".

Information collected for assignment summary:

1. Sampler name and ID number
2. Assignment Date
3. Site Name
4. Control number (CN) – Control #: A unique 6-digit number issued with each drawn assignment. The first two digits represent the assignment number, generated sequentially for each assignment drawn within a Sample Week (01 – 14). The third and fourth digit represent the Sample Week for which the assignment was drawn (01-53). The last two digits indicate the year (YY) in which the assignment occurred in.
5. Assignment status – Complete or Incomplete. If incomplete, explanation is required.
6. Start and end times
7. Vessel activity: number of interviewed and not done fishing groups
8. Shore activity: number of interviewed and not done fishing parties
9. Charter activity: number of interviewed charter for-hire parties
10. General activity: number of refusals, missed, freshwater fishing, commercial, and non-fishing groups
11. Trailer counts: number of single, double, and triple axle trailers at the start and end of survey

Information collected during each individual dockside survey:

1. Time: when interview began in military format
2. Fishing mode (Private, Charter, Shore)
3. Total number of anglers in party by residency (MS Coastal County, MS Non-coastal County, Out-of-State)
4. Number of anglers reporting a valid Mississippi saltwater fishing license. Or, if Charter, Charter Name (validation purposes)
5. Number of anglers reporting a valid calendar year ROLP
6. Whether or not trip was participating in a tournament
7. Area where majority of fish were harvested. If no harvest, area of majority of fishing effort (Figure 1)
    a. Inshore, North of the Intracoastal Waterway [0]
    b. Mississippi Barrier Islands [15]
    c. Louisiana State Territorial Waters [77]
    d. Alabama State Territorial Waters [33]
    e. Federal Waters (> 3 nm South of MS Barrier Islands) [99]
8. Optional secondary area. Used when anglers harvest one targeted species in one area and a second

targeted species in another area (Figure 1).

9. Target species (primary and secondary)
10. Total number of fish in possession (harvest) for each species (trip total for entire party)
    a. Observed harvest (1) – Harvested fish identified and counted by the interviewer. Length and weight for individual fish may be included (optional).
    b. Reported harvest (2) – Harvested fish identified and counted by angler
11. Total number of unavailable fish (catch & release)
    a. Undersize discard (3) – fish caught and released that were smaller than the species-specific size limit.
    b. Legal discard (4) – fish caught and released that were of legal size to keep
    c. Used for Bait (5) – fish caught and used as bait during the trip
    d. Other (6) – any fish discarded during the trip or given away before the survey for any reason not covered by codes

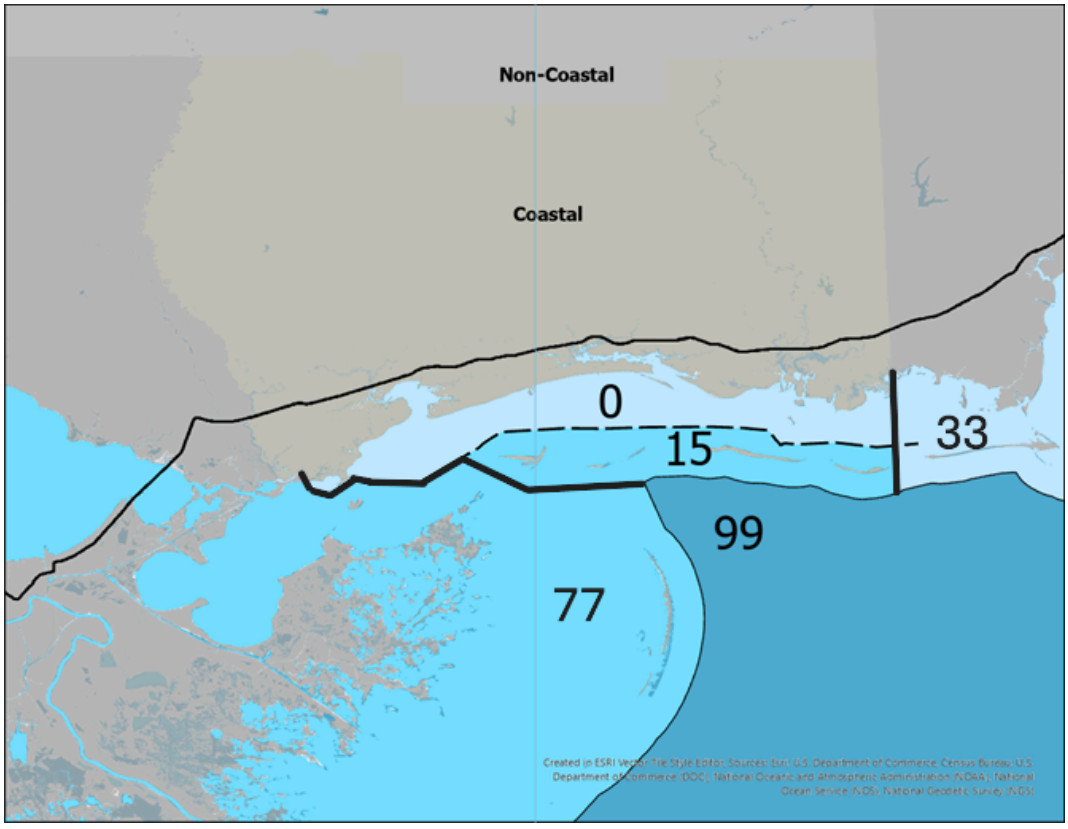


Figure 1. Mississippi coastal counties, fishing effort areas, and associated codes.

Survey Question Considerations

The license question is asked to ascertain the number of anglers not captured within the license frame. Angler's age of 16 and under, 100% disabled, and illegally unlicensed anglers are assessed by the question. However, the majority of unlicensed anglers are expected to be legally unlicensed constituents (under the age of 16 or 100% disabled). Information is used in the calculation of the private angler license compliance rate.

The ROLP question is asked to ascertain the ratio of ROLP angler trips captured dockside compared to the rest of

the license frame. While it is not used in estimation, it is valuable for monitoring whether dockside intercepts are representative of trip estimates generated from the effort call out survey.

Missed trips are those fishing parties believed to be eligible for the survey but were not approached due to the interviewer surveying other angler/party at the time.

Biological data is recorded dockside as time permits. Specifically, fish lengths and weights shall be obtained. This measure is to support the data gathered through a dedicated biological sampling program external to the MS Creel program.

Data Collection Considerations

Interviewing anglers in-person immediately after they finish their trip is preferred because trained field staff can observe and confirm catch. This removes numerous response issues common in off-site survey designs (recall bias) and assumptions associated with incomplete trip (roving) surveys. Typical access point surveys can have a high cost given the relatively low number of interviews obtained, but the data obtained are high quality (Pollack et al., 1994). Compared to other access point surveys, this survey increases the possible number of trips interviewed and reduces potential angler skill level bias for several reasons: only one angler per fishing party provides data for the trip, the question list is short, and anglers from all fishing activities during the assignment are included. The short interview time should also appeal to anglers and increase participation (reduce refusal rate).

Site selection is optimized through the inclusion of site pressures that are evaluated seasonally by fishing activity and day type, where assignment dates are distributed evenly throughout the month and/or seasons. This helps to minimize manpower requirements on a given day and data lost to weather cancellations or poor fishing conditions (resulting in no interviews). By weighting the random selection process, the likelihood that observed landing rates are representative of Mississippi anglers over time is greatly increased.

The access point survey portion of MS Creel does not currently sample nighttime anglers or anglers with private fishing access and as such, landing rates will not be available for these angler groups. It is not known if landing rates of nighttime anglers and private access anglers substantially differ from daytime landing rates at public access sites.

If total landing estimates from private access sites are calculated, landing rates from public sites will be used in combination with private effort to determine total private landings. The telephone surveys will account for public vs. private and daytime vs. nighttime differences in effort.

Because catch and release data collected from surveys are not verifiable, they are subject to prestige bias (exaggeration) and could also be intentionally falsified if it is perceived by anglers that their response can influence management decisions. Additionally, discard mortality rates are variable. Using Spotted Seatrout as an example, discard mortality rates depend largely on bait and hoot type, hooking location, angler skill level, fish size, and water quality (LDWF 1995, Murphy et al. 1995, Stunz and McKee 2006, James et al. 2007).

This survey will ask for primary and secondary target species. However, when producing estimates, this survey does not utilize the question of which species are being targeted by anglers. Omitting the target species question will remove a source of prestige bias (anglers stating that only fish harvested were targeted), but since this is a multispecies survey, the issue is raised of when to apply zeroes if a species is not harvested. This survey assumes that all anglers interviewed had the potential to catch all species observed during the time shift of interest,

essentially assigning zeroes to trips that did not land a species that was landed by other trips.

Effort Survey

There are two separate effort surveys being conducted, one for private recreational saltwater anglers (Private Angler Effort Survey) and one for the Charter Boat Captains (Charter Effort Survey). Effort surveys are conducted weekly based off license frames. Exceptions to this are tropical weather events and the timing of the event in relation to the sample period of Monday through Sunday. During weeks of impending weather, calls will continue to be made to assess effort of prior week. In rare exceptional circumstances, (major hurricane or government shutdown) then mean effort estimates from representative weeks will be applied to current week. The week following hurricane landfall, calls may be cancelled due to call center logistics or limited dockside surveys being completed within prior week as the tropical weather event approached. This may be considered a 'dead week', and in these rare instances, no weekly estimate will be provided. Generally, staff safety is the primary justification for any such cancellations.

Private Angler Effort Survey

Angler Sample Frame

All persons possessing a Mississippi saltwater fishing license with valid phone numbers on file are included in the private angler effort survey sample frame. The frame includes the angler's name, Mississippi recreational saltwater fishing license number, and phone number. Email addresses are included in the frame if the license holder opts to enter it at the time of license purchase. A valid email and phone number are required of ROLP registered anglers and bolsters the accessibility of that license frame.

Anglers are encouraged to keep their contact information up-to-date through the Mississippi Department of Wildlife, Fisheries and Parks (MDWFP) website. The frame is being continually screened to remove unusable phone numbers. The number of saltwater license holders constantly changes throughout the year.

Sample Design

The angler effort survey sample frame is stratified into 4 regions based on geographic area, and/or license type (Table 2).

Table 2. 2026 average private angler license frame by region.

Region	Saltwater Licensed Angler Population*
Coastal Resident	67,500
Non-coastal Resident	60,000
Non-Resident	15,000
Recreational Offshore landing Permit Holder	8,000

*Numbers are approximations. Actual counts are constantly varying but remain at the same magnitude.

**ROLP registered anglers are removed from the appropriate geographic region to avoid double subscription

The Recreational Offshore Landing Permit (ROLP) is a free permit required to possess certain offshore species. The purpose of this stratification is to appropriately consider angler avidity and fishing habits to generate effort estimates. The offshore angling universe represents approximately 5% of the license frame. The ROLP ensures that fishing effort directed offshore, often for federally managed species, is appropriately sampled and results in more

accurate and precise trip estimates.

Each week, 800 license holders are contacted for interviews, distributed uniformly across the four regions (200 contacts for the ROLP group and 200 contacts per remaining region). For sampling to be considered complete for the week, a total of 400 license holders must complete a survey. Calling efforts continue until the quota of 400 is met. It is possible as the program continues to develop and improves efficiency, that the total sample size can be expanded. This expansion would remain uniform across the Regions and maintain a 50% contact rate goal.

Information collected during the private angler effort survey:

1. If the angler went saltwater fishing out of MS
2. Date(s) saltwater fishing occurred
3. For each day the angler went saltwater fishing:
    a. The fishing mode for the trip (PRV, Shore, Charter)
    b. The area fished in which most of the harvest was taken.
    c. If no fish were landed, the area that most of the fishing effort took place.
    d. Whether or not activity was from shore.
    e. Whether the trip ended at a publicly accessible site or from a private site.
    f. Time the trip ended.
4. Whether the angler possesses a ROLP (non-ROLP strata only for database correction).
5. If the angler would like to provide an email for digital delivery of the next survey

Call List Selection

The weekly call list of 800 anglers is randomly selected from the sample frame without replacement. Anglers do not appear on the call list two weeks in a row. The list is purposely randomized using random number sorting before calling begins. Calls are made by going through the list until the 400 completed survey quota is met. This randomization ensures there is no sorting bias that would otherwise occur with this method. By uniformly allocating the weekly call list, the necessary weighting needed to account for disproportional license distribution can be achieved.

Federal Red Snapper Season

Given the drastic increase in offshore angling activity during the federal Red Snapper season, the number of anglers contacted weekly in the ROLP strata is increased from 200 to 300 to improve the precision of private angler ROLP effort estimates. Should the overall sample size increase, the appropriate proportional increase would be applied to the ROLP strata seasonal increase as well.

Considerations

In 2019, the Mississippi Department of Marine Resources conducted an annual effort survey across MS resident fishing license holders. The survey was distributed using three delivery methods (Phone Call, Email, Mail) (See MS Saltwater Angler Participation Survey – GSMFC Report). Findings from this survey showed that phone calls resulted in the highest proportion of zero days fished to fished in year responses. Email delivery resulted in a reduced proportion of zero days fished. Standard mail with a postage paid return form resulted in the lowest proportion of zero days fished. Response rates also differed by method with the highest response rates coming from phone calls (27%), followed by email (14%), and standard mail (10%). This 2019 study showed that phone calls and emails were capable of capturing both high and low avidity angler responses.

By conducting this survey weekly, recall bias is substantially reduced when compared to other telephone surveys.

The question list is short, which minimizes costs and appeals to anglers, and can provide effort data by region and public/private access status. Stratifying the call list sample frame ensures that regional and ROLP differences in avidity are accounted for.

A common problem with call list sample frames is inaccurate contact information resulting in calls with no successful interviews. While the frame is screened to remove obviously unusable phone numbers, it is not possible to identify all bad numbers *a priori*. The call list sample frame is adjusted weekly; removing any unusable number encountered and updating phone numbers as given by contacted anglers.

Unlicensed anglers are not contacted during the telephone survey, meaning observed total angler trips only includes licensed anglers and is an underestimate of effort. This is accounted for by expanding observed effort estimates by MS recreational saltwater license requirement and compliance levels determined from the access point survey.

The absence of a fish species targeting question in this telephone survey will require the same total effort data from a period to be applied to each species caught in that period. An assumption with coupled multispecies creel survey designs is that the two populations surveyed are landing the same distribution of fish species. The absence of a fish species targeting question in the telephone survey will require the same total effort data from a period to be applied to each species caught in that period. For example, within a single period, the access point survey resulted in two species being caught, and the phone survey resulted in a single effort multiplier. If the landing rate for one species was low, then the total landings estimate will be low for that species; if the landing rate for another species was high, then the total landings estimate will be high for that species.

The effort responses from ROLP holders will be expanded across the ROLP frame. Estimates for the ROLP frame fishing effort will be made for all fishing areas, not just offshore. In the same respect, offshore effort will be estimated from all other region frames among anglers that presumably fished offshore without a valid calendar year Recreational Offshore Landing Permit. This will result in one weekly offshore effort estimate for all private anglers. Catch rates calculated from dockside data does not distinguish between ROLP and non-ROLP anglers and is applied to the entire weekly offshore effort.

Charter Effort Survey

Charter Frame

All persons possessing a Mississippi commercial charter boat license are included in the charter sample frame.

Sample Design

Detailed interview procedures will be provided in a Mississippi Recreational Statistics Program: Sampling Protocol document.

Information collected during the charter effort survey:

1) Date(s) charter fishing trip took place
2) Number of anglers on each trip
3) The area in which the majority of fishing occurred.
    a) If no harvest, then the area in which the majority of fishing effort took place
4) Whether trip ended at a privately or publicly accessible site

Call List Selection

The weekly charter call list is randomly selected from the sample frame without replacement. Approximately 10% of the entire call list is sampled each week. Captains do not appear on the call list two weeks in a row. The charter list is continually being cleaned to remove any captains that do not actively use their charter license.

Considerations

Most of the considerations for the angler effort survey apply to the charter effort survey. Contact information in the charter sample frame is more accurate than in the angler frame. The size of the weekly call list was chosen due to the small size of the charter call list sample frame. The charter frame is a list of charter vessel licenses and not a list of charter captains. The legal requirement is for the license to be purchased in the name of the vessel owner. It is possible for multiple captains to run trips on a single vessel, however this is not common practice. In cases where the vessel owner is not running the trips, we add contact information to the draw frame for the individual that is able to accurately provide trip information.

Calculations

The calculations described below determine weekly estimates for landing rate, effort, and total landings for any given species in any particular fishing activity. These estimates can be expanded for any period of interest (month, wave, season, or year). All of the calculations for LA Creel were developed in SAS Enterprise Guide 7.1. The same procedures have been converted for MS Creel operation in R/RStudio and outputs between SAS and R have been compared over time to ensure programmatic consistency. The only deviations from the original LA Creel documentation are to account for the regional breakdowns and lack of "Basins" in Mississippi, opting to identify areas fished for more precise estimates of activity and catch.

Within the period of interest, total landings for a species can be estimated for each individual fishing activity (private, charter, shore) within the designated fishing areas or combined to form statewide total landings estimates.

Landing Rate Estimation

Landing rate estimation is conducted using adapted methods and design from the original LA Creel procedures, including the SAS code and subsequent outputs, modified only to represent the appropriate inputs of Mississippi-based surveys. The equations and estimates for effort were obtained from the Proc Survey Means section of SAS Institute Inc. (2014).

Methods

For a stratified cluster sample design with sampling weights, the sample can be represented as:
n x (P + 1) matrix that looks like the following:

$$(w,\ Y) = \left(w_{hij},\ y_{hij}\right) = \left(w_{hij},\ y_{hij}(1), y_{hij}(2),\ \ldots,\ y_{hij}(P)\right)$$

Definitions and Notation for Landing Rate

$h\ =\ 1,\ 2,\ \ldots,\ H$ is the stratum index (day-type)

$i\ =\ 1,\ 2,\ \ldots,\ I$ is the cluster index (site-day-shift) within stratum *h*

$j\ =\ 1,\ 2,\ \ldots,\ mhi$ is the unit index (interview) within cluster *i* of stratum *h*

$n = \sum_{h=1}^{H} \sum_{i=1}^{n_h} m_{hi}$ is the total number of observations (interviews) in the sample

n_h is the number of clusters (site-day-shifts) per strata

$y_{hij} = \left(y_{hij}(1), y_{hij}(2), \ldots, y_{hij}(P)\right)$ are the observed values of analysis variables (number of fish and anglers) for unit *j* in cluster *i* of stratum *h*

w_{hij} are the assignment weights within cluster *i* of stratum *h*

x_{hij} are the values for the variable of interest (i.e., total number of anglers)

f_h is the sampling rate for stratum *h*, which is the fraction of clusters (site-day-shifts) selected for the sample

Species landings rates are derived from Equation 1:

$$Mean\ Angler\ Harvest\ Rate = \frac{Total\ \#\ of\ Fish\ Harvested\ by\ Party}{Total\ \#\ of\ Anglers\ in\ Party}$$

Let y_{hij} represent the value of the variable for total number of fish landed by the *j*th party in cluster *i* in the *h*th stratum. Let x_{hij} represent the value of the variable for total number of anglers in the *j*th party in cluster *i* in the *h*th stratum. Let w_{hij} be the sampling weight for cluster *i* of stratum *h*. Then Equation 2 calculates the landing rate (*HR*) for a single species in a period (week):

$$\hat{HR} = \frac{\sum_{h=1}^{H} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} w_{hij} y_{hij}}{\sum_{h=1}^{H} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} w_{hij} x_{hij}}$$

Variance of this ratio estimate are calculated using a Taylor series expansion method. This method obtains a linear approximation for the estimator and then uses the variance estimate for this approximation to estimate the variance of the estimate itself. The variance calculation of this landing rate ratio is as follows in Equation 3:

$$\hat{V}\left(\hat{HR}\right) = \sum_{h=1}^{H} \hat{V}_h\left(\hat{HR}\right)$$

for $n_h > 1$: (Equation 4)

$$\hat{V}_h\left(\hat{HR}\right) = \frac{n_h(1-f_h)}{n_h - 1} \sum_{i=1}^{n_h} \left(g_{hi} - \overline{g}_h\right)^2$$

where: (Equation 5)

$$g_{hi} = \frac{\sum_{j=1}^{m_{hi}} w_{hij}\left(y_{hij} - x_{hij}\hat{HR}\right)}{\sum_{h=1}^{H} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} w_{hij} x_{hij}}$$

and: (Equation 6)

$$\overline{g}_h = \frac{\sum_{i=1}^{n_h} g_{hi}}{n_h}$$

Definitions and Notation for Effort:

N is the total population of licensed anglers statewide

N_h is the population total of licensed anglers found within each stratum (Region)

n_h is the total number of anglers interviewed within each stratum (Region)

$\hat{E}$ is the estimated effort (number of angler trips) statewide

$\hat{E}_h$ is the estimated mean effort (number of angler trips) per angler

e_h is the estimated mean effort (number of angler trips) per angler

e_{hi} is the estimated effort (number of angler trips) for a specific angler

The effort survey is a stratified random sampling design within each period (analysis). Thus, the following calculations are used to calculate the observed number of angler trips for each stratum (i.e. Region), and the total observed number of angler trips for the total population.

Equation 7:

$$\hat{E}_h = N_h * \frac{e_h}{n_h}$$

Equation 8:

$$\hat{E} = N * \sum_{h=1}^{H} \frac{N_h}{N} * \frac{e_h}{n_h}$$

To calculate variance for the total number of angler trips, you first calculate the estimated variance of each stratum, and then sum the variances for each stratum to get the estimated total variance for the population:

Equation 9:

$$\hat{V}_h\left(\hat{E}_h\right) = N_h^2 \left(1 - \frac{n_h}{N_h}\right)\frac{s_h^2}{n_h}$$

Equation 10:

$$\hat{V}\left(\hat{E}\right) = \sum_{h=1}^{H} N_h^2 \left(1 - \frac{n_h}{N_h}\right)\frac{s_h^2}{n_h}$$

where Equation 11:

$$s_h^2 = \frac{\sum_{i=1}^{n_h} \left(e_{hi} - \bar{e}_h\right)^2}{n_h - 1}$$

To account for unlicensed angler effort, the license compliance rate is calculated using data collected during the access point survey.

Private Angler, Equation 12:

$$Private\ Angler\ License\ Compliance\ Rate = \frac{Total\ \#\ Licensed\ Anglers\ in\ Party}{Total\ \#\ Anglers\ in\ Party}$$

Charter Guide, Equation 13:

$$Charter\ Guide\ License\ Compliance\ Rate = \frac{Total\ \#\ Interviewed\ Licensed\ Captains}{Total\ \#\ Interviewed\ Captains}$$

ROLP License, Equation 14:

$$ROLP\ License\ Compliance\ Rate = \frac{Total\ \#\ Interviewed\ Captains\ or\ Anglers\ with\ ROLP}{Total\ \#\ Interviewed\ Captains\ or\ Anglers}$$

The variance calculations of this ratio are the same as written above in the Landing Rate estimation. Variance of this ratio estimate are calculated using a Taylor series expansion method. The exception is that x_{hij} now represents the value for total number of anglers in the party with a license (or number of captains) for the j^{th} member in cluster *i* in the h^{th} stratum.

Using license compliance rates, the observed total number of angler trips is expanded into a new total number of angler trips:
Equation 15:

$$Expanded\ Total\ \#\ Angler\ Trips\ =\ \frac{Observed\ Total\ \#\ Angler\ Trips}{License\ Compliance\ Rates}$$

The calculation of this ratio and its variance is made using a first-order Taylor series approximation of random variables X (total number of angler or charter trips) and Y (license compliance rate). Suppose one wants to estimate Equation 16:

$$g(\mu_x, \mu_y) = \frac{\mu_x}{\mu_y}$$

where:

$$E(\overline{X}) = \mu_x$$

and:

$$E(\overline{Y}) = \mu_y$$

Then the first-order Taylor approximation gives:
Equation 17:

$$\hat{g} = \frac{\overline{X}}{\overline{Y}}$$

Equation 18:

$$E(\hat{g}) \approx \frac{\mu_x}{\mu_y}$$

Equation 19:

$$V(\hat{g}) = \left(\frac{\mu_x}{\mu_y}\right)^2 \left[\frac{V(\overline{X})}{\mu_x^2} + \frac{V(\overline{Y})}{\mu_y^2} - 2\frac{Cov(\overline{X},\overline{Y})}{\mu_x \mu_y}\right]$$

Since X and Y are independent random variables, the covariance $Cov(X, Y)$ is equal to zero. Thus Equation 19 simplifies to:
Equation 20:

$$V(\hat{g}) = \left(\frac{\mu_x}{\mu_y}\right)^2 \left[\frac{V(\overline{X})}{\mu_x^2} + \frac{V(\overline{Y})}{\mu_y^2}\right]$$

Since the license compliance rate is calculated from the on-site access survey, they can be analyzed separately by species of interest, fishing activity (primary, charter, shore) and fishing area (inshore, offshore). With the expanded total number of angler trips being a function of the license compliance rate, this also means that the expanded total number of angler trips can be calculated separate for each species, fishing activity, and fishing area.

Considerations

When calculating basin specific effort estimates, the issue is raised as how to determine the total population (N) of anglers for each basin, and for the mean number of trips per angler (e_h), which basin is to apply the respondents who did not fish. For this survey, it is assumed that Louisiana anglers have the potential to fish in any basin; therefore: 1) N is equal for both statewide and basin specific effort calculations, and 2) for basin effort estimates, e_h includes all respondents who id not fish in addition to those who did fish in that basin.

Total Landings Estimation

The equations and calculations for estimating total landings were obtained from Pollock et al. 1994.
The estimate of total landings is the product of the estimated effort and the estimated landing rate.

Methods

Equation 20 can be used to calculate observed or expanded total landings estimates, using observed or expanded effort estimates, respectively:

$$Total\ Landings = Effort * Harvest\ Rate$$

or, Equation 21:

$$\hat{H} = \hat{E} * \hat{HR}$$

The estimated variance of the estimated total landing is calculated using a modified version of Goodman's Exact Variance of Products (Goodman 1960, Walter and Ortiz 2012). Equation 22:

$$\hat{V}\left(\hat{H}\right) = \hat{E}^2 \hat{V}\left(\hat{HR}\right) + \hat{HR}^2 \hat{V}\left(\hat{E}\right) - \hat{V}\left(\hat{E}\right)\hat{V}\left(\hat{HR}\right)$$

Quality Control/Quality Assurance

All interviewers will be biologists trained in fish identification, who have passed a training course in MS Creel field procedures. Unannounced visits are made by a trained observer to view the interviewer performing their assignment. Visits represent 5-15% of total scheduled assignments and ensure presence on site, compliance with operating procedures, and/or to document their knowledge of different situations that may arise. Interviewers are expected to meet the following minimum criteria, as outlined in more detail in the MS Creel Sampling Protocol:

1) Be at the assigned site at the assigned starting time
2) Wear attire that is easily identifiable with the MDMR logo.
3) Accurately identify and enumerate fish in the field.
4) Carry appropriate fish identification book(s) as reference, if needed.
5) Conduct must be professional and courteous.

Two options for electronic data entry will be available; a web-based data entry management system (via Microsoft Teams), and a tablet application for remote field entry. Currently, only the post-assignment, web-based data entry option is available.

Once field forms and web-based entry are received by data management, quality control checks are performed by comparing intercept responses on the field form with the intercept data that was entered electronically. Remote entry data will be reviewed for logical inconsistencies and other automated, metric based acceptable ranges. Responses to each question are compared to ensure that each intercept's interview data was entered consistently. Data management attempts to correct any transposition errors and/or inconsistencies prior to running estimate calculations. If discrepancies in data arise, the interviewer is contacted for further explanation, the validity of the data discussed, and if necessary, the interview is corrected.

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Mississippi Creel Field Manual

Version 2.1 – Updated February 2026

Table of Contents

Program Background 1
MS Creel Survey Method 2
Access-Point Angler Survey 2
  Access Point Coverage 2
  Assignment Draws 3
MS Creel Access Point Survey 4
  Interviewer Responsibilities 4
  Data Recording 5
  Assignment Protocol 5
  MS Creel Assignment Cover Sheet Data 6
  MS Creel Intercept Protocol 9
    Introducing the Survey 9
    Eligibility 9
    MS Creel Assignment Intercept Form Data 10
    Biological Sampling Form Data 13
    Angler Interactions 15
  Interviewer Quality Control 16
Notable Recreational Regulations 16
  Mississippi Fishing License 16
  Recreational Offshore Landing Permit (ROLP) 16
  Atlantic Highly Migratory Species (HMS) Permit 17
Information on Effort Surveys 18
  Private Angler Effort Survey 18
  Charter Effort Survey 18
Appendices 20
  Appendix A: MS Creel Assignment Cover Sheet 20
  Appendix B: MS Creel Assignment Intercept Form 21
  Appendix C: Biological Sampling Form 22
Figure 1: Map of Applicable Areas 23

Program Background

The Mississippi Department of Marine Resources (MDMR) is a government agency, created in 1994 by the Mississippi Legislature, with the mission to enhance, protect and conserve the state's marine interests. MDMR manages all marine life, public trust wetlands, adjacent uplands and waterfront areas to provide optimal commercial, recreational, educational and economical uses of these resources that are consistent with environmental concerns and social changes.

The Mississippi Gulf Coast is home to some of the nation's most productive shellfish and finfish waters. The livelihood of many generations depends on the coastal waters and its rich, natural resources. Mississippi's coastal resources have sustained a growing economy and contribute greatly to the culture and heritage that define Mississippi Gulf Coast natives as a people.

A **fishery** collectively describes fish caught by recreational and/or commercial anglers. The Mississippi Department of Marine Resources is responsible for managing these resources through monitoring programs, regulations, and research to result in sustainability, while maximizing the opportunity for stakeholders to access the resources. Effective management of the resources requires monitoring of resource removals. **Fishery-dependent monitoring programs** are thus established to collect data on catch and effort from both commercial and recreational sectors. These data are then used to estimate and monitor harvest over time, supporting informed and effective management.

Grasping the distinctions between key terms is crucial for understanding the data outputs of the MS Creel program. Below are definitions of key terms:

- **Fishing Effort:** Number of individual angler trips which may be further broken down into directed trips targeting specific species and area fished.
- **Discards:** The number of fish caught and subsequently released in any condition.
- **Harvest:** The total number of fish harvested, including observed harvest and reported harvest.
    - **Observed Harvest:** Fish caught and harvested which were then observed, identified, and quantified by trained dockside samplers.
    - **Reported Harvest:** Fish caught and harvested which the dockside sampler was unable to observe but was indicated by the angler to have been harvested.
- **Landings:** Estimates of harvest by species.
- **Group:** Anglers on a single private or chartered vessel or shore fishing together with shared storage of harvested catch.

Commercial landings in Mississippi are documented through the Trip Ticket program, which requires seafood dealers to collect information from commercial fishermen to submit including the species landed, the areas where the fish were caught, and quantities and prices paid for seafood purchased from the fisherman.

Typically, recreational estimates of catch and harvest are determined through dockside surveys at public access-points and estimates of fishing effort are developed through mail/email/phone surveys.

In the late 1990s, National Oceanic and Atmospheric Administration (NOAA) developed the Marine Recreational Fisheries Statistics Survey (MRFSS). But in 2013, NOAA made fundamental changes to MRFSS, and the resulting revision was named the Marine Recreational Information Program (MRIP). For these programs, NOAA conducted the effort survey portion remotely, and the state agencies conducted the dockside catch survey portion. Beginning in 2025, MDMR initiated the MS Creel program to run side by side with MRIP for the entire calendar year. Mississippi is responsible for all aspects of this program, including effort surveys, dockside catch surveys, and landings estimates.

MS Creel Survey Method

The MS Creel program aims to gather catch and effort information from Mississippi saltwater anglers from which timely and accurate catch and harvest estimates are produced, facilitating informed management decisions. The MS Creel Program develops weekly statewide recreational saltwater fishing effort estimates. The program will subsequently produce weekly landings estimates for ACL managed species and will produce monthly landings estimates for all other species observed dockside.

The MS Creel program requires three components to develop landings estimates, all of which collect distinct data. The **access-point angler survey** is the component from which all harvest data (composition and rates) are obtained. The two other components, a **charter captain survey** and a **recreational saltwater fishing license holder survey**, provide fishing effort data (i.e., number of saltwater fishing trips taken each week). Landings estimates are simply a product of the effort data multiplied by the harvest rate data to determine state-wide estimates harvest.

Access-Point Angler Survey

Access Point Coverage

MDMR maintains a register of publicly accessible sites used for saltwater fishing activity. Possible fishing modes recorded at each site include private vessel (Private), charter vessel (Charter), and shore (Shore) activities.

For survey assignment (scheduling and site selection), each location is assigned a pressure-based weight that informs the randomized assignment draw. Pressure refers to the maximum expected number of eligible fishing trips for each mode under optimal conditions for a given site. For every possible site, the following are maintained in the register:

1. Site name
2. Physical address
3. GPS coordinates
4. Contact name, phone number, and email (if applicable)
5. Operating hours (if applicable)
6. Mode(s) of fishing present and estimated pressures of angler activity by mode
7. Assigned unique Site Identification (ID) Number

Possible fishing modes recorded at each site include private vessel (Private), charter vessel (Charter), and shore (Shore) activities. Currently each fishing mode is given a value for estimated fishing pressure over four periods grouped by similarities in types of fishing occurring and fishing activity level (Division occurs by week number, Winter: 1-13; Spring: 14-21; Summer: 22-33; Fall: 34-53) and day type (weekday: Monday-Thursday; weekend: Friday-Sunday).

Site pressure values are developed using data from prior surveys, site canvassing, and/or local knowledge. Pressure evaluations and adjustments will be made over time to ensure that the site-specific weighting in the assignment drawing is representative of its actual (observed) activity. Closures and other aspects affecting site usage will also be accounted for in pressure adjustments. Management will be notified of new sites and observed activity adjacent to but not included in the coverage of existing sites. Sites too large or busy for effective single interviewer coverage may be split into multiple sites by site layout or mode type.

Assignment Draws

Assignments are drawn in sample weeks, which consist of a Monday to Sunday period. Depending on the federal calendar year, there will be either 52 or 53 sample weeks in a year. Summer is treated differently from the other three seasons, with 14 assignments per week and no more than 4 assignments per weekend day. Winter, Spring, and Fall have 9 assignments per week with no more than 3 assignments per weekend day. All seasons have a limit of 2 assignments per weekday. The weekly assignment draw distribution is as follows:

Summer

- Fishing mode: the assignment draw will select **11 Private, 2 Charter, and 1 Shore** sites, based upon the primary fishing activity of each site.
- Day type: each week will consist of **5 weekday and 9 weekend** assignments, to reflect the higher fishing activity observed over the weekends.
- Time block: **AM and PM** shifts will be randomly assigned and an equal distribution.

Non-Summer

- Fishing mode: the assignment draw will select **7 Private, 1 Charter, and 1 Shore** sites, based upon the primary fishing activity of each site.
- Day type: each week will consist of **3 weekday and 6 weekend** assignments, to reflect the higher fishing activity observed over the weekends.
- Time block: **AM and PM** shifts will be randomly assigned and an equal distribution.

Time blocks indicate the duration for which the interviewer is to be on site. The AM block is from 0800 to 1400, and the PM block is from 1400 to sunset. Sunset is defined as the official time at which the sun sets for a given date and location. The interviewer must be on-site for the duration of the assignment unless the environment becomes unsafe. The actual time of departure must be noted on the survey cover sheet.

Most state holidays are excluded from the assignment draw process. Excluded holidays include New Year's Day, Dr. Martin Luther King Jr.'s and Robert E. Lee's birthdays, Mardi Gras, President's Day, Easter Sunday, Confederate Memorial Day, National Memorial Day and Jefferson Davis' Birthday, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and day after and Christmas Eve and Day. These holidays will still be captured in the effort estimates and corresponding landings estimates.

Each assignment will have a unique 6-digit Control Number. The first two digits are the sequential numbering of assignments drawn for that Sample Week (01-14). Digits three and four are the Sample Week for which the assignment was drawn (01-53). The fifth and sixth digits are the Year for which the assignment was drawn (e.g., 25).

The output of the assignment draw is a comprehensive sampling calendar for the selected year, indexed by week and date. Each record identifies a unique dockside survey event at a site assigned to a specific mode, season, day type, and time of day. Each month, this assignment draw is an input into a staff assignment procedure to randomly assign a staff member to each survey.

MS Creel Access Point Survey

Interviewer Responsibilities

The responsibilities of the MS Creel interviewer are as follows:

- Interviewers must wear MDMR issued attire to be identified by anglers.
- Interviewers must be capable of identifying fish to the species level for commonly observed species. Interviewers should have a fish identification book, or other means to identify unknown fish if required.
- Interviewers must be at the correct site no later than the start of the assignment time shift and remain on site until the end of the assignment time shift, regardless of the level of fishing activity. Exceptions to this rule are if the site becomes unsafe or if the interviewer gets approval from their supervisor given appropriate justification. While samplers are encouraged to be on site a few minutes early, angler interviews and activity counts should only occur during the assignment time shift.
- Interviewers must be prepared with enough dockside forms to interview all possible anglers.
- Interviewers must have a working scale and fish measuring board in their vehicle.

Data Recording

There are three forms to be used by the interviewer when conducting dockside assignments. The MS Creel Assignment Cover Sheet contains assignment-level summary data (Appendix A). The MS Creel Assignment Intercepts Sheet contains intercept-specific data (Appendix B). The

Biological Sampling Sheet contains fish length and weight data for individual angler intercepts (Appendix C). It should be noted that the Biological Sampling program is conducted independently of the MS Creel Program and should be conducted opportunistically so as not to interfere with the efficiency of MS Creel dockside interviews. All collected information associated with an intercept is confidential and should not be shared with other individuals. Information may be summarized if requested by an angler for general themes of what has been noted by the surveyor but should not provide specifics that may be connected back to a single interview.

After the assignment and prior to submission, all forms should be checked for completeness. All completed forms must be scanned, entered into the web-based management system (Microsoft Teams based entry), and submitted for processing and subsequent storage in the database.

Real-time digital entry through a web portal is currently under development and when available, will be able to condense those three steps into instant recordings that are pulled into the database and can be reviewed/edited after the survey has ended.

Assignment Protocol

The priorities during a MS Creel assignment are as follows:

1. Count and record the number of trailers (single, double, triple axle) present at the site **upon arrival and prior to departure** from the site, if applicable. If the drawn assignment is charter or shore mode only, trailer counts are not required.
2. Count and record **all groups** that return to the dock by activity type (i.e., fishing, non-fishing, commercial), including those that landed and departed the site while interviewing another group.
3. Completely survey **as many angler groups as possible**, with priority given to the specified fishing mode assigned (i.e., private vs. shore vs. charter), but without bias to vessel type (i.e., inshore vs. offshore), or number of anglers. Interviewer sampling activities should be representative of the activity occurring at the site, that day.
4. Collect biological catch data when possible, without negatively impacting the surveyor's ability to interview other groups. A busy survey may result in very few biological data points. A second staff member may be assigned to assist the primary interviewer with capture of biological information; however, the second interviewer should not also interview fishing groups.
5. Some sites contain multiple fishing modes. If so, interview anglers from both and give priority to the mode the survey is assigned to.

MS Creel Assignment Cover Sheet Data

Interviewers should fill out the MS Creel Assignment Cover Sheet as they progress through the assignment (Appendix A). Descriptions of each field are as follows:

Control #: The unique 5-digit number corresponding to the scheduled assignment.

Assignment Date: MM/DD/YY of the scheduled assignment.

Site Name: Name of the scheduled assignment site.

Assignment Status: Circle "*Complete*" if the interviewer remains on-site for the entire time block (8 AM to 2 PM; 2 PM to sunset). Assignments in which no anglers were interviewed due to a lack of activity are considered complete. Interviewers should include a comment explaining the reason for no surveys in the *Assignment Comments* field (e.g., *wind, severe weather, rainy, cold, local event/parade*).

The survey will be marked incomplete if the interviewer arrives late, leaves early, or is absent. It will also be incomplete if the survey site is closed upon arrival or is closed during the survey period. Appropriate arrival and departure times should be noted. **Survey data cannot be used if an assignment is worked incorrectly** (e.g., wrong site, wrong time block, wrong date). Data from surveys with early departures and late arrivals may be used by adjusting the time parameters for catch rate use. Biological data can be used in most circumstances. A cover sheet with specifics regarding an incomplete survey should be submitted and entered.

Supervisors can make decisions not to work assignments or to end assignments early due to employee safety concerns independent of an office closure declaration A cover sheet with specifics regarding an incomplete survey should be submitted and entered.

If an emergency state office closure is declared, all assignments are considered cancelled for the duration of the closure. If a closure becomes effective during an assignment, the assignment is considered terminated when the interviewer becomes aware of the closure through their supervisor. Affected assignments are considered incomplete and should be marked as such, with the termination time (if applicable) and an incomplete justification (e.g., *hurricane, snow, office closure – flooding*) included on the cover sheet. A cover sheet should still be completed and submitted as per usual.

# of Assignment Intercepts Sheets Attached: Number of corresponding MS Creel Assignment Intercept forms that were completed during the assignment. This is to ensure that intercept forms do not get lost and remain with the cover sheet.

Incomplete Reason: If the survey is marked incomplete, the interviewer should describe the reason here. Common reasons include site closures, an interviewer missing the assignment, or an interviewer leaving the assignment early for office closures.

Assignment Start: Assignment start time in military time (0000-2400). **The interviewer should mark the actual time the interviewer arrives at the site** (no earlier than the scheduled start time).

Assignment End: Assignment end time in military time (0000-2400). **The interviewer should mark the actual time the interviewer departs the site** (no later than the scheduled end time). The interviewer should leave at the officially reported time of sunset if it occurs before the scheduled assignment end time. Interviewers may leave the site prior to the sample block end time if the site environment becomes unsafe. Unsafe conditions include inclement weather, aggressive or dangerous behavior, or any other legitimate reason. Interviewers should exercise common sense for dangerous situations; if the interviewer feels threatened or unsafe, they should *leave immediately*.

Note: Statistical calculations are based on time blocks. Parties/anglers/vessels should be surveyed (or at least counted) if arriving at the site between the start and end time of the assignment. Including anglers outside the assignment time block could affect catch rate calculations and subsequent harvest estimations.

Interviewer Name: First and last name of the person working the assignment.

Interviewer ID: Each interviewer is issued a unique 4-digit code.

Secondary Interviewer Name: First and last name of second interviewer, if present.

Secondary Interviewer ID: Unique 4-digit code assigned to secondary interviewer, if present.

The following fields are categories for an active tally of site activity during the assignment timeframe. Tallies should represent angler groups/parties. Tallies can represent an individual (if fishing alone) or parties (if multiple individuals are fishing together), but not individuals within parties. Each vessel represents a single party. Shore anglers can be a party if multiple anglers combine catch into a single cooler/vehicle.

Interviewers need to observe and record all vessel activity at boat launches to determine total vessel traffic, and what proportion of the total traffic is directed towards recreational fishing. Amongst other uses, monitored vessel activity is used to adjust site pressures to ensure assignments are distributed proportionally.

Note: The interviewer should **tally** all activity *as it is encountered* and write the **total** *at the end of the assignment.*

Complete Private Vessel Interviews: Encountered private vessel parties that have an associated *MS Creel Assignment Intercept* entry, completed in full.

Complete Shore Group Interviews: Encountered shore parties that have an associated *MS Creel Assignment Intercept* entry, completed in full.

Complete Charter For-Hire Interviews: Encountered charter for-hire parties that have an associated *MS Creel Assignment Intercept* entry, completed in full.

Private Vessel Not Done Fishing Groups: Encountered private vessel parties that returned to the dock but intend to conduct additional fishing activity that day. Intercepts should only occur when the trip is ended as aligned with legal language of final destination that the catch is no longer transported by vessel.

Shore Mode Not Done Fishing Groups: Encountered shore parties that are departing the site but intend to conduct additional fishing activity that day. Intercepts should only occur when the anglers do not intend to continue to fish that day. Anglers may leave the site for food or bait and return to the site within one survey timeframe and should only be interviewed when done fishing for the day.

Refusals/Unable to Complete Survey: Fishing parties that were approached by the interviewer but either initially refused the survey or were unable to complete the survey entirely. These anglers were at least made aware of the survey.

Missed Groups/Drive Offs: Fishing parties that were not approached by the interviewer and departed from the site before being made aware of the survey. Typically occurs when an interviewer is engaged in another interviewer, or at sites with large coverage areas.

Freshwater Groups: Vessels that were specifically fishing for freshwater species and did not harvest *any* saltwater species. This is common at more northern boat launches.

Commercial Groups: Vessels that engaged in commercial activities and *not* recreational fishing. Commercial groups include commercial crabbing, commercial finfishing, oyster farming, marine construction, commercial surveying, university or private research, or any other activity that is conducted for a private entity.

Non-Fishing Groups: Vessels that were not recreationally fishing and not conducting any of the aforementioned activities. This includes jet skis, kayaks, pleasure boats, sailboats, etc. **Each individual kayak and jet ski should be considered its own group.**

Single Axle Trailers at Start: Number of *parked* one-axle trailers counted by interviewer upon start of the assignment.

Double Axle Trailers at Start: Number of *parked* two-axle trailers counted by interviewer upon start of the assignment.

Triple Axle Trailers at Start: Number of *parked* three-axle trailers counted by interviewer upon start of the assignment.

Single Axle Trailers at End: Number of *parked* one-axle trailers counted by interviewer upon completion of the assignment.

Double Axle Trailers at End: Number of *parked* two-axle trailers counted by interviewer upon completion of the assignment.

Triple Axle Trailers at End: Number of *parked* three-axle trailers counted by interviewer upon completion of the assignment.

Assignment Comments: Space to describe any instance which may affect the results of the survey, including weather conditions, water conditions, site conditions, or local activity (e.g., marine patrol presence, parade). If the interviewer is not on site for any portion of the scheduled period, the interviewer should provide reasoning here.

QA/QC Staff: Initials of the staff member(s) that successfully completed QA/QC on the entered data.

Data Entry Staff: Initials of the staff member(s) that successfully entered the data.

MS Creel Intercept Protocol

Introducing the Survey

Interviewers should introduce themselves to the party and explain to the party what they are doing. For example:

"I work for the Mississippi Department of Marine Resources, and I am conducting recreational saltwater angler creel surveys. Would you like to participate?"

Interview questions can be directed to one or more members of the fishing party. It is not necessary to speak to every angler of the party if one person (e.g., captain, deckhand, parent) can answer all interview questions for the party. Attempt to interview an adult from the party. Individuals under 18 years of age should have a parent/guardian present during intercept. If no adult is present, count the intercept as a refusal/unable to complete.

Only one intercept form is filled out per vessel/party. A shore angler party may also be interviewed on a single angler intercept form if the anglers have combined catch or are leaving the site as a group. Charter captains or deckhands may be interviewed for details regarding the trip but should **not** be counted towards the number of anglers for the trip.

Note that participation in the survey is voluntary. If an angler is approached and immediately refuses the interview, it is considered an initial refusal. If an angler initially agrees to participate in the interview but refuses to answer or is unable to complete the survey, the interview is considered a refusal. Record each party that refuses on the MS Creel Assignment Cover Sheet. These will be tallied and recorded at the completion of the assignment.

Eligibility

If the party is receptive to further questioning, the interviewer should ask a screening question:

"Were you recreationally fishing for saltwater finfish today?"

Anglers must answer "Yes" to the screening question above to be eligible for the interview. To be eligible, anglers must be done saltwater fishing for the day. The angler(s) need not have caught or landed any finfish to be eligible for interviewing.

Tournament anglers are eligible, but only if they land their catch at the assigned site (fish will no longer travel by vessel). Anglers who come to the site to weigh fish and land them elsewhere are not eligible. Tournament groups should be noted on the MS Creel Assignment Intercept form.

Multi-day private recreational trips are eligible regardless of when fishing occurred. Typically, these angler camp at an island and make multiple fishing trips before landing at a mainland harbor. Private recreational trips are only allowed to possess a single day bag limit, regardless of the number of days fished. When these trips are intercepted, a note should be made.

MS Creel Assignment Intercept Form Data

If the party is eligible for further questioning, the interviewer should progress through the Assignment Intercept form, ensuring all applicable fields are answered.

Refer to Appendix B for the MS Creel Assignment Intercept form layout. The following fields must be filled out for the survey to be complete:

Control #: Matches the *Control #* on the MS Creel Assignment Cover Sheet.

Survey Trip #: The sequential interview number during an assignment.

Time of Survey: Time at which the interview is initiated, in military time (0000-2400).

Trip Activity: Categorizes the trip by fishing mode.

PRV, private recreational vessel; SH, shore; CH, charter for-hire.

Fished in a Tournament: Should only be marked if any of the fish harvested are to be submitted for a fishing tournament.

Incomplete: Should only be marked if the interview is started but for any reason did not capture all necessary intercept data, or if the angler is ineligible. When marked, survey will be thrown out.

Res: Refers to the **number of anglers** in the party from each location of residence (Figure 1). Individuals within the group that *were not* fishing should not be included in the count. Charter captains and deckhands should not be included in the count.

MS Coastal: Hancock, Harrison, Jackson, Pearl River, Stone, and George Counties (lower six counties).

MS Non-Coastal: all other counties in Mississippi.

Out-of-State.

Anglers: Total number of **eligible individuals** on the vessel that *would have been able to return with a daily catch limit*, regardless of if they actually fished or not.

All *licensed individuals* are considered eligible, whether or not they actually fished, and are included in the angler count. *Individuals exempt from carrying a fishing license* (e.g., children under the age of 16, 100% disabled) are considered eligible, whether or not they actually fished, and are included in the angler count. All *unlicensed individuals that participated in fishing* are considered eligible and are included in the angler count. All *charter trip passengers* are considered eligible, whether or not they actually fished, and are included in the angler count.

Charter captain and crew are not counted. Scientific observers are not counted. An unlicensed individual that did not participate in fishing is not counted.

#Licenses: Number of **self-reported** anglers within a party that hold a Mississippi recreational saltwater fishing license. **Interviewers do not need to confirm.** Interviewers should ask:

"This is just for us to know how many anglers are not eligible for our effort survey calls, but is there anyone in the group that participated in fishing but does not have a saltwater fishing license for any reason?"

Common reasons include being under the age of 16, 100% disability, or negligence. If anglers do not possess a license for a valid reason, state the reason in the Comments section (i.e., "*2 anglers under 16*").

ROLPs: Number of **self-reported** anglers with a valid Recreational Offshore Landing Permit (ROLP). The ROLP is only valid for the calendar year in which it was obtained. All Mississippi licensed anglers, including lifetime license holders, are required to register for a ROLP each year if they intend to harvest the species covered by the permit (Cobia and Reef Fish).

CFH: This field is **only required for Charter For-Hire trips**. Refers to Charter Captain's name or Vessel/Company name.

1° Area Fished: Refers to the area where the party spent the majority of time fishing. When necessary to accurately describe the trip, utilize the 2° Area field. Circle the most appropriate area:

1- MS Inshore (North of the Intracoastal Waterway)
2- MS Barrier Islands
3- Louisiana State Waters
4- Alabama State Waters
5- Federal Waters (More than 3 Nautical Miles South of Barrier Islands)

For example, if a vessel went offshore for snapper in the morning and fished at the islands on the way back, the interviewer should mark federal waters as the primary area fished and barrier islands as the secondary area fished.

2° Area (Optional): Refers to the area that the party spent a significant time fishing. This field should only be utilized if necessary to accurately describe the trip.

1° Target Species: Refers to the main fish species that the party was targeting. Both Target Species fields should be filled as the party states. If a party targeted more than two species, write the **first two** that the party states. If a party only targeted one species, leave the secondary target species field blank. If a party did not target a particular species ("anything that bit"), leave both target species fields blank.

If a party only targeted freshwater fish, the interview should end and be marked as incomplete. The interviewer should tally this trip in the freshwater section on the MS Creel Assignment Cover Sheet. If a party targeted both freshwater **and** saltwater fish, the party is considered eligible and should be interviewed.

2° Target Species: Refers to the second main fish species that the angler was targeting, if required.

The **Catch Table** records any interactions the interviewed party had with finfish. These include harvest, discards, use as bait, or any other form of removal. **Protocol is to record removal data on all finfish species, but to record discard data on key finfish species only.**

Any harvested finfish, either observed or reported, should be recorded. Any finfish that was used (or is going to be used) as bait should be recorded. Any finfish that was caught and given away, eaten, or in any other way removed from the fishery should be recorded. Any key finfish species, defined as uncommon, managed, or important to the recreational fishery, should be recorded if they were discarded either as an undersized or legal discard.

Key finfish species include (but are not limited to):

- Atlantic Tripletail (AT)
- Black Drum (BD)
- Cobia (C)
- Gray Snapper (*"mangrove snapper"*, GS)
- Gray Triggerfish (GT)
- Greater Amberjack (GAJ)
- King Mackerel (KM)
- Red Drum (RD)
- Red Snapper (RS)
- Sand Seatrout (*"white trout"*, WT)
- Sheepshead (SHP)
- Southern Kingfish (*"ground mullet"*, GM)
- Southern Flounder (SF)
- Spanish Mackerel (SPM)
- Spotted Seatrout (SST)
- Striped Mullet (STM)

Any reef fish, offshore/deepwater species should be recorded (i.e., Vermillion Snapper, Mahi, Atlantic Spadefish). Sharks should also be recorded.

Unmanaged bycatch/discarded species that **do not need to be recorded** include (but are not limited to): Atlantic Croaker, Blue Runners (*"hardtails"*), Gafftopsail Catfish, Hardhead Catfish, Pinfish, Silver Perch, Spot, and Stingray species). If the interviewer is unsure about the notability of a fish, they should mark it just in case.

Species Name: Species can be recorded in any manner that is decipherable to data entry staff responsible for checking entries. For example, Red Drum can be recorded as *"RD"*, Southern Kingfish can be recorded as *"Ground Mullet"*.

Note that anglers may have local names for various fish species. Sand Seatrout are commonly referred to as *"white trout"*. Cobia are commonly referred to as *"ling"*. Southern Kingfish are commonly referred to as *"ground mullet" and* **should not** be mistaken as Striped Mullet. If the interviewer is unsure what species the angler is referring to, the interviewer is responsible for seeking clarification with the angler or inquiring to their supervisor.

#: Number of fish reported by species and by code.

Code: Reported or observed interaction of fish:

1- Observed Harvest: Fish that the interviewer physically *observed*.
2- Reported Harvest: Fish that the interviewer *did not* physically observe.
3- Undersize Discard: Fish that were caught but were *not big enough* to keep.
4- Legal Discard: *Legal sized fish* that were caught and *released*. Also applies to species without size limits.
5- Bait: Fish kept (or already used) for *bait*.
6- Other: Fish kept for an *unlisted reason*. State the angler's intentions in the comments section.

Biological Sampling Form Data

If an angler/party completed the MS Creel Intercept and observed harvest (Code #1) was recorded, and no other candidate anglers/parties are available to interview (no one is coming in), then request to measure the harvested fish:

"Would it be okay if I weighed and measured your fish?"

If the interviewer is allowed to measure the fish, complete the following Biological Sampling form (Appendix C):

Survey #: Same as *Survey Trip #* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Control #: **Optional (if needed).** Same as *Control #* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Time: **Optional (if needed).** Same as *Time of Survey* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Date: **Optional (if needed).** MM/DD/YY of assignment.

Interviewer ID: **Optional (if needed).** Four-digit ID number assigned to the interviewer.

County Code: **Optional (if needed).** Identifies the county where the assignment occurs. HAN, Hancock; HAR, Harrison; J, Jackson County.

Site: **Optional (if needed).** Assignment site name.

Target Species 1: **Optional (if needed).** Same as *1° Target Species* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Target Species 2: **Optional (if needed).** Same as 2° *Target Species* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Mode: **Optional (if needed).** Same as *Trip Activity* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Survey Type: **Always circle *MS Creel.***

Area Fished: **Optional (if needed).** Same as *1° Area Fished* on the MS Creel Assignment Intercept form. Make sure this field matches the corresponding intercept field.

Gear Type: Circle the most relevant choice for angler activity. Most likely *H&L, h*ook and line.

Species: Common name or abbreviation of fish species being measured.

Total Length (mm): The straight-line distance from the tip of the snout (mouth closed) to the tip of the longest caudal fin lobe, **in millimeters.**

Fork Length (mm): *If the fish has a forked tail (e.g., Spanish Mackerel).* The straight-line distance from the tip of the snout (mouth closed) to the middle of the fork in the tail, **in millimeters.** *This field can be left blank for the fish that do not have a forked tail (e.g., Spotted Seatrout, Red Drum).*

Weight: Weight of the fish, **in grams.**

Sex: **Optional (not required for MS Creel).**

1 – Male; 2 – Female; 3 – Unknown.

Stage: **Optional (not required for MS Creel).**

1 – Regenerating; 2 – Developing; 3 – Spawning Capable; 3A – Actively Spawning;

4 – Regressing; 5 – Immature.

Env #: **Optional (not required for MS Creel).** If otoliths are taken, this field corresponds to the number assigned to the envelope that holds the otoliths.

Lab ID: **Optional (not required for MS Creel).** If otoliths are taken, this field corresponds to the ID number assigned for associated laboratory analyses.

The Biological Sampling forms were designed to be ubiquitous with any other biological sampling projects (i.e., otolith collection) conducted at MDMR and therefore contain fields that do not directly apply to the MS Creel program. Leave any unnecessary fields blank. As long as enough information is filled in to correspond the Biological Sampling form to the correct intercept on the MS Creel Assignment Intercepts form, then the interviewer does not need to complete the entire form. The only fields that must be completed are Survey #, Control #, Species, Length, and Weight.

If the angler/party harvested 15 or less individual fish of one species, then the interviewer should measure every fish. If the angler/party harvested more than 15 individual fish of one species, then the interviewer should subsample to the best of their abilities. *For example, if a party returns with 45 spotted seatrout, the interviewer should measure every third fish (15 total)*. Do not let the angler pick which fish to measure. The interviewer should be responsible for measuring a subsample that accurately represents the total pool of harvested fish by the party/angler (i.e., the interviewer should not measure only the biggest, or only the smallest fish). It is more important to measure every fish of one species (or the entire subsample) than some fish of every species caught.

Angler Interactions

Information gathered through the MS Creel program is confidential and will not be used for anything other than fisheries purposes. Do not share specific information obtained during an interview with other anglers or people outside MDMR. Survey participants, including charter captains, who acknowledge fishing without a license or permit, possess illegal fish, etc., will not be reported to Marine Patrol. If illegal activity is observed by an interviewer, it should be reported to their supervisor.

The MS Creel Survey, including harvest information, is voluntary for all recreational anglers, private or charter. **Anglers are under no obligation to participate in the survey.**

Someone will inevitably mention a controversial topic to a staff member while on assignment. As a representative of MDMR, staff cannot participate in such conversations. Anything said might be interpreted to directly reflect the position of MDMR. Therefore, it is best to listen only, if possible. If the person is hostile or wants to speak to someone about their concerns, attempt to refer them to the Recreational Fishing Survey Hotline (228-325-1585), which will give the angler an opportunity to speak with a program manager or leave a message with callback information.

Staff members are permitted to share MS Creel-gathered fishing information with other anglers as long as angler group-specific details are not provided (e.g., names). Ideally, the party from which the information was collected should be gone from the site so that recipients cannot deduce which party the information came from. Staff should attempt to provide information in aggregate, if possible.

Information that anglers typically ask about includes what people have been catching, where people have been fishing, and the bait used for specific species. Examples of acceptable phrasing of dependent sampling information are as follows:

- Telling an angler that only one party was observed to limit out on Spotted Seatrout.
- Charter trips typically limit out more than private trips.
- More than one party reported catching Red Drum on soft plastics.
- Most anglers catching Spotted Seatrout went to Cat Island
- *"Several people have reported catching flounder at night around Pascagoula."*
- *"Your Spotted Seatrout catch is consistent with the other surveys I completed today."*
- *"Your Red Snapper are bigger/smaller/about the same size as the others I have seen today."*

Interviewer Quality Control

Announced and unannounced site visits may be made during MS Creel assignments by a supervisor. Site visits are to ensure that staff are working the assignment during the scheduled timeframe and at the scheduled location. Additionally, site visits may include shadowing interviews to ensure that staff are conducting interviews sufficiently.

Quality control visits are coordinated through MS Creel administrative staff only.

Notable Recreational Regulations

Mississippi Fishing License

Anglers 16 years or older who take, possess or attempt to possess fish in Mississippi marine waters must have a saltwater fishing license. Anglers under 16 years old and those 100% disabled with documentation are exempt from recreational saltwater licenses.

Recreational Offshore Landing Permit (ROLP)

Randomly selecting contacts solely from the saltwater fishing license database for the effort survey resulted in too few offshore anglers to characterize offshore activity adequately. By far, most saltwater fishing license holders focus their effort inshore. As a result, the Recreational Offshore Landing Permit (ROLP) was created.

The permit is free and is required of all adult anglers possessing Reef Fish (Snapper, Amberjack, Grouper, Hind, Triggerfish) and Cobia in Mississippi waters. Gray (Mangrove) Snapper may be harvested North of the Intracoastal Waterway (inshore) without this permit. Charter anglers (i.e., clients) are covered under the charter captain's permit, who is required to have a **ROLP** if landing any of the covered species. Anglers exempt from fishing license requirements (under 16 or 100% disabled) are also exempt from ROLP requirements. Senior lifetime license holders are **not** exempt from ROLP requirements.

ROLPs expire on December 31st of the calendar year of issuance. Anglers must register for a ROLP every year they intend to land Reef Fish or Cobia.

ROLPs are available online (https://dmr.ms.gov/rolp/). Permits can be printed and carried by the angler or displayed on a Smartphone via screenshot, image download, etc. Either form is acceptable for law enforcement purposes. As of the date of publication, no working ROLP app is available. Physical ROLP cards may be provided to anglers, although this courtesy may not be continued indefinitely.

ROLPs are not available at any fishing license vendor. However, certain MDMR staff can assist the public in obtaining or renewing a ROLP. Limiting points of sale for ROLPs prevents non-offshore anglers from unnecessarily obtaining a permit. If too many non-offshore anglers possess a ROLP, the efficacy of the permit in effort estimations is lost. **Anglers should register for a ROLP only if they participate in private offshore fishing trips.**

Title 22 Part 9 Chapter 8 Rule 8.4 Recreational Offshore Landing Permit. Any person, except those persons currently exempt from purchasing a fishing license (those under 16 or disabled as described in MS. Code 49-15-69), possessing any one of the following fish species or species groups on board a vessel taken from within or outside of Mississippi territorial waters shall be required to have obtained and have in their immediate possession a recreational offshore landing endorsement. Any person on a trip aboard a charter vessel, who pays a fee for that trip, is not required to have this permit, but the permit is required for the owner of the licensed charter vessel. Permits may be obtained at no cost from the Department, or authorized method, by persons who hold any valid license authorizing the taking and possessing of saltwater species of fish. Permits shall be valid for the duration of the calendar year in which they were purchased, regardless of the duration of the valid recreational fishing license. The recreational offshore landing permit shall be available for inspection by a duly authorized agent of the department: A. Reef fish species: a. any species of snapper, excluding Mangrove Snapper harvested within a line formed by the Intercoastal Waterway; b. any species of amberjack; c. any species of grouper or hind; d. Gray Triggerfish; B. Pelagics: a. Cobia; MISS. CODE ANN. §§49-15-1 et seq., NAO 216-100, 5 U.S.C. 552, 50 CFR 229.10, 16 U.S.C. 1361 et seq., 16 U.S.C. 1801 et seq.

Atlantic Highly Migratory Species (HMS) Permit

The Atlantic Highly Migratory Species (HMS) Permit is a federal permit required of all owners/operators of vessels fishing recreationally for Atlantic tunas, sharks, swordfish and billfish in the Gulf of America, the Atlantic Ocean, or the Caribbean Sea. The federal HMS permit is required for private and charter fishing trips and is in addition to the ROLP. A cost is associated with the HMS permit. The permit can be purchased online at https://hmspermits.noaa.gov/.

Some anglers have confused the ROLP and HMS permits, thinking they are the same. However, there are two critical differences between the two permits. First, the HMS is vessel-based (i.e., it

covers everyone on a permitted vessel) and the ROLP is individual-based (i.e., it covers only the person to which it is issued), except for Charter ROLPs. Second, the ROLP is free, and the HMS is not. The ROLP and HMS permits also do not cover the same species and are not exchangeable for law enforcement purposes.

Information on Effort Surveys

Private Angler Effort Survey

To determine the overall recreational harvest, estimate the amount of effort, defined by the number of saltwater fishing trips, is needed. Effort is derived from the Private Angler Effort Survey. This survey is not conducted by MDMR staff but is contracted to an outside entity. Each week a set number of individuals with a Mississippi recreational saltwater fishing license are drawn randomly for participation in the effort survey. Licensed anglers are divided into four license types, referred to as regions, to align with relative fishing activity. The four regions are: 1) MS Coastal, 2) MS Non-Coastal, 3) Out-of-State, or non-resident license holders, and 4) Recreational Offshore Landing Permit (ROLP) holders (separate from saltwater license holder). Each week, 200 individuals from each region are drawn for contact. During Red Snapper season, the number of private ROLP anglers drawn for the effort survey increases to 300. The total draw represents approximately 0.5% of the total license frame. With increased efficiency gains, sample size may be increased and reach 1% of the total license frame.

Initial contact is made by email and SMS text messaging (when possible), informing the angler that they have been drawn for the survey. The digital delivery methods allow anglers to click on a link which takes them to a web form to report their fishing activity, or lack thereof, for the sample week. If a digital submission is received, the other contact methods are invalidated which prevents duplicate submissions. Calls will be made to the angler to attempt to gather survey information from Tuesday through Friday between the hours of 9am and 5pm. Calls continue until 50% of the weekly call list has completed survey response of yes fished in period or no fished in period.

An effort correction factor sourced from dockside survey information accounts for private anglers who fish without a license due to being exempt (under the age of 16 or 100% disabled) or fishing illegally having not purchased a license. The effort correction factor is calculated as the number of anglers observed during the survey divided by the number of anglers reporting having fished without a license.

Charter Effort Survey

The Charter effort survey is conducted weekly by call or text. All persons possessing a current Mississippi charter boat license are included in the charter telephone survey sample frame. Mississippi charter licenses are issued to the vessel; therefore, an independent frame is used to contact captains.

Charter call lists for weekly effort are generated at the beginning of each work week and provided to MDMR staff responsible for making the calls throughout the week. Staff members contact the selected captain/representative to gather information about charter activities conducted during the previous week. The results from the completed call sheets are entered into a centralized database by close of business each Friday. Approximately 10% of captains are drawn weekly and no captain is drawn in back-to-back weeks.

The purpose of the survey is to estimate recreational charter fishing effort and operates very similarly to the recreational effort survey with exception of the allowance for recording multiple trips in a single day. The number of saltwater charter trips made in each sample week (Monday – Sunday), the dates of those trips, the time of return for each trip, the area in which the majority of the harvest took place, and whether the trip launched from a public or private access point are collected. If no fish were kept, the area where the majority of fishing effort took place. The charter effort survey and private recreational angler effort survey are multiplied by the catch rate on a species-specific level for the same sample month to calculate total landings estimates per species per sample month. Currently only Red Snapper is conducted on a weekly basis for in-season management.

Appendices

Appendix A: MS Creel Assignment Cover Sheet

MS Creel Assignment Cover Sheet

Control #:	Assignment Date:	Site Name:

Assignment Status: Complete / Incomplete	# of Assignment Intercept Sheets attached:

Incomplete Reason:

Assignment Start (0000-2400):	to	Assignment End (0000-2400):

Interviewer Name:	Interviewer ID:

Secondary Interviewer Name:	Secondary Interviewer ID:

	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:	

Assignment Comments:

QA/QC Staff:	Data Entry Staff:

Appendix B: MS Creel Assignment Intercept Form

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

Survey Trip #:		Time of Survey (0000-2400):		Trip Activity: PRV / SH / CFH
Fished in a Tournament: ☐		Refusal/Incomplete: ☐		Not Done Fishing: ☐
# Anglers:	# Licenses:	# ROLPs:	CFH:	
1° Area Fished (Required): MS Inshore (N. of ICW) / MS Barrier Islands / LA / AL / Federal (>3nm S. of BI)				
2° Area Fished (Optional): MS Inshore (N. of ICW) / MS Barrier Islands / LA / AL / Federal (>3nm S. of BI)				
1° Target Species:			2° Target Species:	

Species Name	#	Code	Species Name	#	Code

Comments:

Survey Trip #:		Time of Survey (0000-2400):		Trip Activity: PRV / SH / CFH
Fished in a Tournament: ☐		Refusal/Incomplete: ☐		Not Done Fishing: ☐
# Anglers:	# Licenses:	# ROLPs:	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:			2° Target Species:	

Species Name	#	Code	Species Name	#	Code

Comments:

Codes: 1 - Observed Harvest, 2 - Reported Harvest, 3 - Under Size Discard, 4 - Legal Discard, 5 - Bait, 6- Other
Discards: BD, RD, SH, SFL, SST, Cobia, Snappers, Groupers, Triggerfish, Amberjacks, Mackerels, Tripletail, HMS

Appendix C: Biological Sampling Form

Biological Sampling - Recreational - 2025

Survey # | **Control #** | **Time** | **Date**

Interviewer ID | **County Code** | **Site**

Target Species 1 | **Target Species 2**

MODE: **Private Rec** | **For-Hire** _____

Survey Type **BIO** | **MS Creel** | **MRIP** | **TnS** | **Observer** | **Other** _____

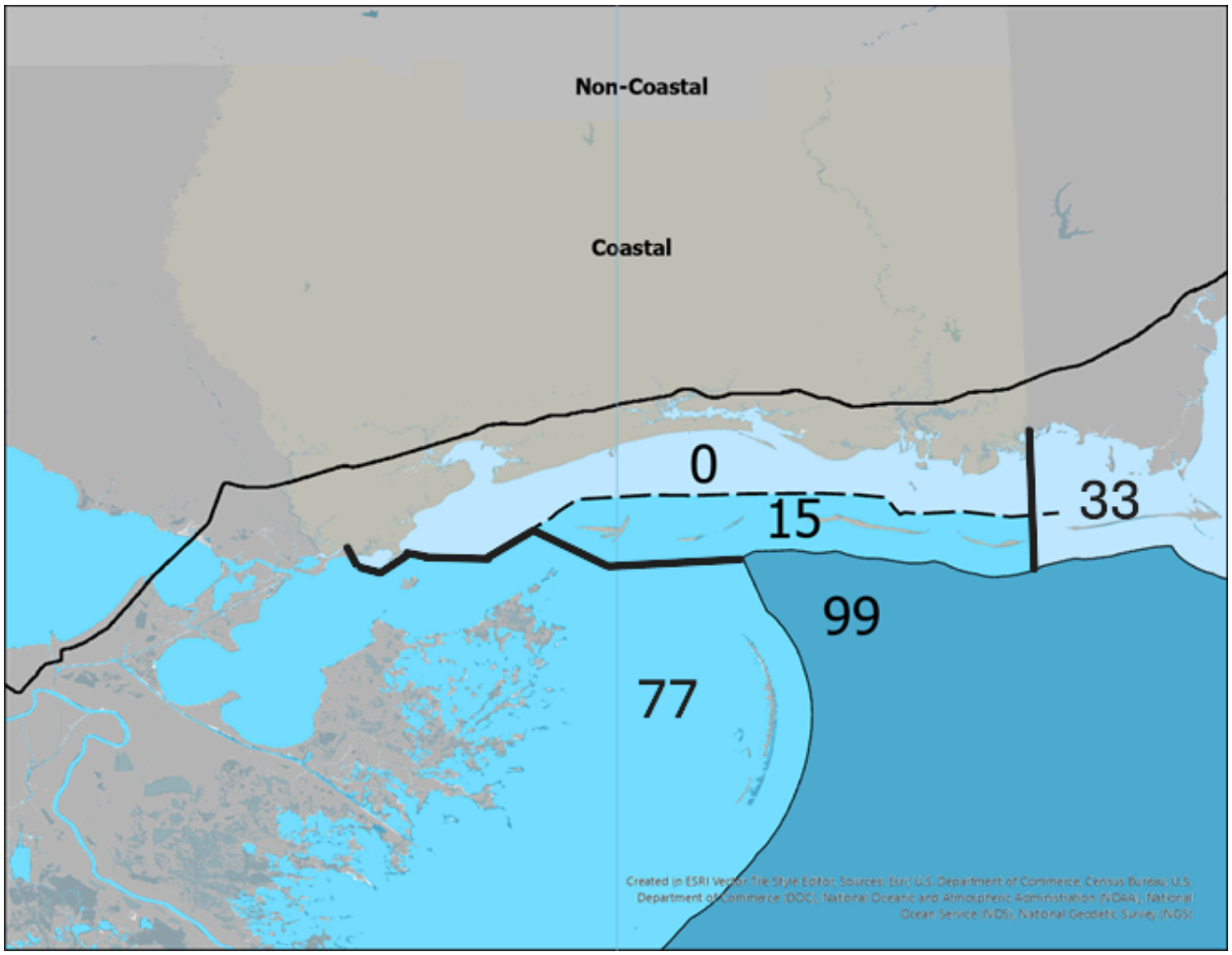
Area Fished: **1**- MS Inshore (N. of ICW) **2**- MS Barrier Islands **3**- LA **4**- AL **5**- Federal (>3nm S. of BI)

Gear Type H&L | Gig | Cast Net | Spear

	Species	Length (mm)		Weight	Sex &		Env	Lab ID
	Common Name	Total	Fork	(Kg)	Stage		#	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Surveys Attempted _____ Surveys Completed _____ Surveys Refused _____

Figure 1: Map of Applicable Areas



MS Creel Charter Manual

PURPOSE

The MS Creel charter survey is conducted to estimate weekly recreational saltwater finfish charter trips (effort). Charter effort combined with dockside catch information will generate harvest estimates of various finfish recorded in the survey. The estimates provide information to assist fisheries managers with the development of fishing regulations and seasons.

The survey is designed to collect chartered saltwater fishing trip activity; therefore, non-chartered saltwater fishing trips or chartered fishing trips in freshwater should not be sampled. However, donated charter fishing trips in saltwater are eligible for sampling.

CHARTER EFFORT SURVEY SUMMARY

The charter effort survey is conducted each week (Monday – Sunday sampling week) by phone. Participation is voluntary. Approximately ten to fifteen percent of the active charter license holders that conduct applicable activities are eligible to be drawn at random.

The effort survey collects the same information gathered through the recreational effort survey, as it applies to the chartered activities of the drawn vessel license:

1. Number of saltwater charter trips completed on licensed charter vessels during the sample week
2. Specific date of each trip
3. If multiple trips occurred on the day
3. Area in which the majority of harvest or fishing effort took place
4. Whether the trip launched from a public or private access point

Weekly lists of selected charter vessels are distributed to staff (Appendix A). A current frame of all licensed vessels, in Excel format, is also provided for the purpose of improving contact information. Vessels that are selected in a given week are removed from being selected in the subsequent week to minimize survey fatigue. Those vessels are available to be drawn for the next sample week (second week after the original week of selection).

CONTACTING SELECTED VESSELS

On Monday following the sample week, drawn captains will receive an emailed and texted link to the effort survey for digital entry of the sample week's charter activities. On Tuesday following the sample week, staff will receive a draw list with vessel and representative information. Their task is to contact the designated representative associated with the selected vessels to collect fishing activity data for the previous week. Captains that complete the survey digitally are marked as completed and will not be called after completing the survey. Staff must make at least five call attempts per vessel. No more than two attempts for each vessel should be made in a single day, one should occur in the morning and the other in the afternoon.

In all communications, remember to be courteous to the vessel representative. Participation in the survey is voluntary, so it is important to maintain good rapport with the vessel representative in order to sustain their cooperation in the survey. Always remember that anything you say can be construed as speaking on behalf of the state. A supervisor will occasionally listen in on conversations to ensure compliance with protocols.

COLLECTING THE DATA

The following call script must be used by samplers when contacting vessel representatives for trip information. It is necessary to follow the script to ensure contact individuals are asked the questions in a consistent manner. This will ensure information is accurately collected. The script will be guided by the call out system entry form.

The sampler should make it clear to the representative that we are requesting data for chartered trips that occurred on the selected vessel during the selected sample week. Make sure to pay attention to comments regarding the representative's preferred name/title and vessel make, model, and year and note information in the comment section as needed.

First call of the week ONLY:

If the call goes to voicemail, leave the following message:

“Hello, this is _____ from the Mississippi Department of Marine Resources. We’ll be trying to reach you this week regarding a charter vessel selected in the State For-Hire Fishing Effort Survey. Please return this call at ___-___-____. Thank You!”

Call Script

Hello, this is (sampler’s name) from the Mississippi Department of Marine Resources. I’m contacting you today regarding the For-Hire Fishing Effort Survey.

Am I speaking to (representative’s name)?

Just to verify, are you still the captain or designated representative for vessel number (vessel number)?

Question 1: *Did you have any saltwater fin fishing trips with paying customers last week? MON thru SUN (Give Dates)*

Record response(s) on the form.

If “No” charter trips were made during the sampling week, record “0” in the appropriate location on the form. *End the survey and “thank” them for their participation.*

If “Yes” to charter trips, continue to question 2.

Emphasize to the vessel representative or captain we are asking for saltwater charter trip activity conducted on the selected vessel. We are not interested in charter trips conducted on other vessels the representative may own unless more than one vessel for the same representative is selected within the same sample week.

Question 2: *On which days were trips taken?*

Record response(s) on the form.

Assuming the vessel representative answered “Yes” to Question 1, we need to know on which days each of the trips occurred.

If a vessel representative reports a multi-day trip, then record information for the day the trip finished. For example, if a trip occurred on a Tuesday and Wednesday, record information on Wednesday. Also, note in the comments section of the form that the trip is part of a multi-day trip.

Question 3: Were you fishing primarily inshore (North of the Intracoastal Waterway), at Mississippi Barrier Islands, in Louisiana state waters, in Alabama state waters, or more than 3 miles South of the Barrier Islands?

Record response(s) on the form.

If no fish were kept, then in which area did the majority of fishing effort take place?

See figure for area locations.

Question 4 : *Where did you launch from?*

Record response(s) on the form.

A “public” access point is a boat launch or marina open to the public and our dockside surveys regardless of whether it is free to use or a fee is required. A “private” access point is a boat launch, boat slip, etc. that is on private property and not open to the public for use or for our staff to access for survey purposes. The question helps us approximate the amount of charter effort taking place at private sites that we cannot access for the purposes of the dockside survey.

The ramps and marinas where we sample are all considered Public.

An example of a private launch would be a resident only ramp or marina or the dock on a private landowner’s property.

Repeat these questions for each additional trip initially stated to have taken place.

Thank them for their time and participation. End survey.

Interview Status

Upon completion of the interview or exhausted the number of attempts the sampler should indicate the interview status.

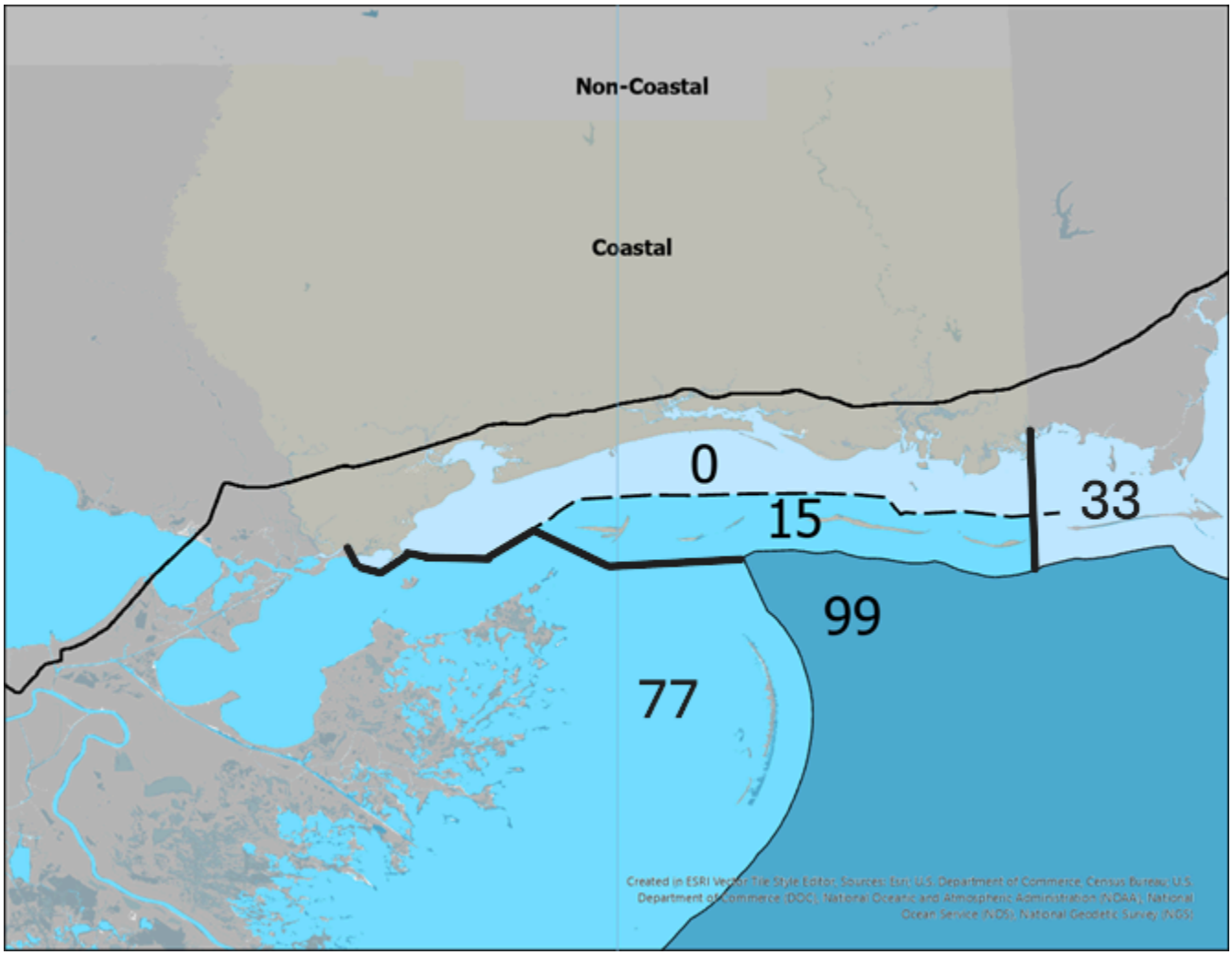
1. Complete Interview: The captain or vessel representative is contacted and responds to all survey questions. If charter did not have activity but was available for chartering the interview is complete.
2. Refusal: The captain or vessel representative refuses to participate in the survey or refuses to provide data for any of the questions.

   If the captain or vessel representative asks not to be contacted for the survey in the future, they are considered “Non-Cooperative.” Write “NC” on the form and note the essence of what the captain or vessel representative said on the form. The finfish bureau director or their appointee will reach out to the captain to discuss and determine future participation in the program.

3. Inactive: Not available for charter fishing (e.g. sold vessel, destroyed, sunk, lost, vessel does not charter fish but holds license for other activities [ecotourism]).
4. Unable to Contact: None of the contact attempts resulted in a response from the captain or vessel representative.

DATA ENTRY

Data is entered in real-time by callout staff. If a captain provides trip information for the week in question after the surveying period has ended, the information may be entered for the appropriate week and data management staff should be notified of the change. Estimation may be re-run if estimates have not been marked FINAL.



Mississippi Department of Marine Resources

Mississippi Saltwater Recreational Private Angler Phone Survey Progression

Hi, I am trying to get in contact with _____

[Correct Contact] – {Begin Survey}

[Incorrect Contact] – “Are they available or is this the incorrect contact to reach them”

{Record as needed}

[Incorrect Contact] “Thank you, we appreciate your time, have a good day”

{Begin Survey}

I work at the Mississippi Department of Marine Resources to collect fishing effort information from license holders, did you go saltwater fishing last week from Monday, Month day to Sunday, Month day

[Yes]

{Continue with questions}

[No]

“Thank you, we appreciate your time, have a good day”

{End Survey}

1. What days of the week did you fish

   {Select appropriate check boxes}

2. On [indicated day fished] did you fish from a boat?

   {Record}

3. Which area did you primarily fish?
   {Record}
4. About what time did your fishing trip end?
   {Record}
5. Did you come back to a site that is open to the general public?
   {Record}

{RETURN TO 2 for each indicated day}

6. Do you have a 2026 Mississippi Recreational Offshore Landing Permit?

[Yes]: Great, my last question is, would you like to provide an email for us to send this survey to and avoid calls in future weeks?

{Record}

[No]: No problem, we just want to inform anglers that the permit is required if you intend to possess or land Cobia or Reef Fish species which includes Snappers, Groupers, Triggerfish, and Amberjack. The permit is free and can be obtained on the MDMR website.

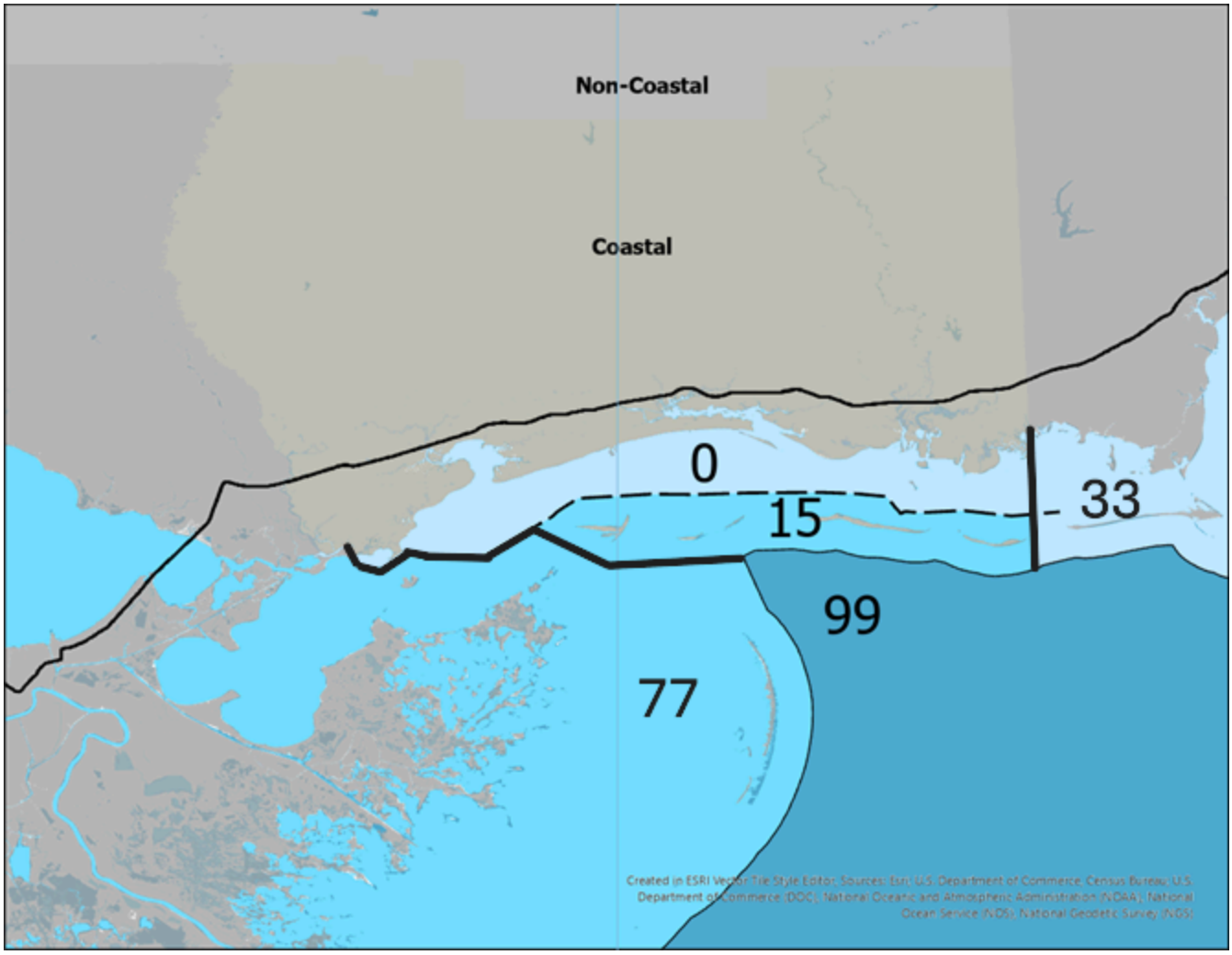
My last question is, would you like to provide an email for us to send this survey to and avoid calls in future weeks?

{Record}

“Thank you, we appreciate your time, have a good day”

Table 1: Area Fished Codes

Area Name	Description	Area ID
MS Inshore Waters	Bays, Bayous, Rivers, and MS Sound North of Intracoastal Waterway	0
Barrier Islands	State waters, South Intercoastal Waterway but North of line formed 3 miles South of Mississippi Barrier Islands	15
Alabama Waters	East of MS state-line, Grand Bay or near Dauphin Island	33
Louisiana Waters	West and South of MS state-line, Biloxi Marsh, Chandeleur Islands, Freemason, Breton Sound, Lake Borgne	77
Offshore	More than 3nm South of Barrier Islands	99


Non-Coastal
Coastal
0
15
33
99
77
Created in ESRI Vector Tile Style Editor. Sources: Esri, U.S. Department of Commerce, Census Bureau, U.S. Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Geodetic Survey (NOS)

Mississippi Saltwater Angler Participation Survey
Final Report

C. Project Title: Mississippi Saltwater Angler Participation Survey

D. Mississippi Department of Marine Resources

E. Award Period: From 9/1/2019 To 12/31/2019

F. Period Covered by this Report: From 9/1/2019 To 12/31/2019

G. Summary of Progress and Expenditures

1. Work Accomplishments:

    a. Describe tasks scheduled for this period (from proposal and amendments, if appropriate).
        a. Develop an up-to-date, secure data frame of Mississippi license holders for inclusion in survey selection.
        b. Select random subsamples of anglers spatially (coastal, mid-state, upper-state) to represent different subsets of anglers across the state of Mississippi.
        c. Within the spatially distinct subsamples, develop and deploy identical surveys using three primary communication methods (phone-based, mail-out, email-based).
        d. Compare and contrast response rates, reported values, and preferred communication methods between all selected subsamples.
        e. Develop and write a project report outlining findings and potential recommendations for a Mississippi-specific angler outreach program.
        f. Anticipated period of performance would be from October 1, 2019 until December 31, 2019.
        g. At the completion of the project, a summary report will be completed and sent to GSMFC for review.

    b. Describe tasks accomplished this period.
        a. Developed an up-to-date, secure data frame of Mississippi license holders for inclusion in survey selection. Data frame included complete listings for home addresses and partial listings for phone numbers and email addresses.
        b. Selected random subsamples of anglers spatially (coastal, mid-state, upper-state) to represent different subsets of anglers across the state of Mississippi. Total participants in each subset were proportional to the distribution of license holders in each area in the state.
        c. Developed and deployed identical surveys using three primary communication methods (phone-based, mail-out, email-based).
        d. Compared and contrasted preliminary response rates and reported values between all selected subsamples.
        e. Project report outlining findings and potential recommendations for a Mississippi-specific angler outreach program pending, replies to survey without associated costs were received well into the 2020 calendar year.
        f. General pending results gathered:

i. Effectiveness of each contact method
ii. Data differences between contact methods
iii. Data differences between regions
iv. Angler participation details and habits
v. Preferred contact methods for future surveys and outreach

c. Explain special problems, differences between scheduled and accomplished work, etc.
   a. Data frame was available from Mississippi Department of Wildlife and Fisheries license sales records. Not all license records contained valid contact information as some purchase methods utilize manual entry of contact information. Some license records did not contain an email and/or phone number as they are not required for purchase. Mailing addresses were the most complete and accurate of the contact information as it is pulled directly from a state issued license.
   b. No issues occurred with classification of the data frame into three regions due to the complete mailing addresses. The random selection of participants within the regions was fully functional.
   c. Surveys were developed to gather information regarding angler habits during the 2019 calendar year but were not able to collect data that would have occurred in the month of December during survey deployment. Preferences for future contact was also collected for participants. Some contacts were determined to be not valid such as disconnected or invalid phone numbers and invalid emails.
   d. No issues occurred with comparing and contrasting response rates and reported values between all selected subsamples.
   e. Project report outlining findings and potential recommendations for a Mississippi-specific angler outreach program pending.

2. Expenditures:

   a. Describe expenditures scheduled for this period.

   b. Describe actual expenditures this period.

   c. Explain special problems, differences between scheduled and actual expenditures, etc.
      a. Budget was followed with exception of the anticipated line item Dell laptop not being purchased in order to cover an initially unexpected cost within the postal mail out and subsequent return process. The change was necessary for the project's completion, but the project was not substantially affected by this change.

H. Describe any anticipated issues that could arise:

   a. Project has been completed with no anticipated issues.

I. Results

   a. Survey Dispersal

TOTAL SENT				
Area	**Mail**	**Email**	**Phone**	**Total**
All	3000	3000	3000	9000
South	2487	2540	2510	7537
Central	401	353	386	1140
North	112	107	104	323

Table 1: Distribution of surveys by method by region

b. Survey Responses

RESPONSE RATE				
Area	**Mail**	**Email**	**Phone**	**Total**
All	11.0%	13.6%	26.7%	17.1%
South	11.5%	13.6%	27.1%	17.4%
Central	8.5%	13.9%	25.1%	15.8%
North	8.9%	12.1%	23.1%	14.6%

Table 2: Response to surveys by method by region

MS	Survey	Surveyed	Fishing Mode		Access		Access County			Area Fished				Future Contact Method		
Area	Method	Dispersal	Boat	Land	Private	Public	Jackson	Harrison	Hancock	Inshore	Offshore	LA	AL	Text	Email	No
All %	All	100.0%	77.0%	23.0%	13.9%	86.1%	37.7%	41.8%	20.5%	82.8%	12.9%	3.8%	0.4%	35.0%	41.1%	23.9%
South	All	85%	78%	22%	12%	89%	39%	40%	21%	83%	13%	4%	0%	36%	41%	23%
Central	All	12%	72%	28%	27%	73%	29%	51%	20%	81%	14%	4%	1%	32%	39%	29%
North	All	3%	59%	41%	16%	84%	41%	53%	6%	84%	13%	0%	3%	20%	56%	24%
South	Phone	85%	70%	30%	13%	87%	32%	44%	24%	86%	11%	3%	0%	43%	28%	29%
Central	Phone	12%	63%	37%	25%	75%	30%	60%	11%	88%	9%	4%	0%	34%	26%	40%
North	Phone	3%	80%	20%	27%	73%	40%	53%	7%	80%	20%	0%	0%	27%	41%	32%
South	Mailer	87%	82%	18%	8%	97%	47%	40%	13%	86%	13%	2%	0%	33%	44%	23%
Central	Mailer	10%	73%	27%	38%	65%	30%	43%	26%	83%	17%	0%	0%	23%	48%	29%
North	Mailer	3%	20%	80%	0%	100%	20%	80%	0%	100%	0%	0%	0%	0%	80%	20%
South	SurveyMonkey	85%	90%	10%	15%	85%	44%	35%	21%	76%	16%	8%	1%	25%	62%	12%
Central	SurveyMonkey	12%	82%	18%	24%	76%	27%	44%	29%	71%	20%	7%	2%	33%	57%	10%
North	SurveyMonkey	3%	50%	50%	8%	92%	50%	42%	8%	83%	8%	0%	8%	23%	62%	15%

Table 3: Response rates to each question by region by method

MS	Survey	Trips											
Area	Method	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Annual (no dec.)
All %	All	4.5%	4.8%	7.1%	9.2%	12.3%	14.2%	13.9%	11.5%	9.2%	7.4%	5.9%	100.0%
All	All	0.82	0.87	1.31	1.69	2.26	2.61	2.55	2.11	1.68	1.36	1.09	18.36
South	All	0.99	1.04	1.60	2.10	2.74	3.15	3.08	2.55	2.08	1.67	1.35	22.35
Central	All	0.19	0.18	0.33	0.52	0.96	1.34	1.17	1.03	0.69	0.53	0.27	7.21
North	All	0.04	0.08	0.87	0.85	0.58	0.94	1.11	0.80	0.65	0.18	0.13	6.22
South	Phone	0.77	0.86	1.09	1.31	1.89	2.09	2.05	1.71	1.27	1.08	0.86	14.99
Central	Phone	0.00	0.03	0.09	0.20	0.35	0.64	0.51	0.33	0.28	0.22	0.16	2.80
North	Phone	0.04	0.00	0.50	0.46	0.79	0.96	0.83	0.71	0.38	0.21	0.13	5.00
South	Mailer	0.78	0.87	1.67	2.19	2.92	3.29	3.20	2.76	2.14	1.56	1.02	22.42
Central	Mailer	0.24	0.15	0.38	0.55	0.81	1.10	0.81	0.71	0.66	0.38	0.25	6.02
North	Mailer	0.00	0.00	1.10	1.10	0.50	1.10	1.10	1.30	1.10	0.10	0.10	7.50
South	SurveyMonkey	1.43	1.39	2.05	2.79	3.39	4.07	3.99	3.18	2.82	2.38	2.16	29.65
Central	SurveyMonkey	0.33	0.37	0.51	0.82	1.71	2.29	2.20	2.04	1.14	1.00	0.41	12.82
North	SurveyMonkey	0.08	0.23	1.00	1.00	0.46	0.77	1.38	0.38	0.46	0.23	0.15	6.15

Table 4: Responses to trips each month question by region by method

Species	Primary	Secondary	Tertiary	Total Count
Spotted Seatrout	475	217	79	771
No Particular Species/Anything	220	231	259	710
Red Drum	271	299	85	655
Flounder	56	60	148	264
Red Snapper	136	58	49	243
Sand Seatrout	45	50	54	149
Cobia	20	27	26	73
Tripletail	4	25	30	59
Southern Kingfish	11	15	20	46
Sheepshead	4	17	24	45
Black Drum	11	21	12	44
Mullet	9	13	2	24
Greater Amberjack	2	13	8	23
Grouper	0	10	8	18
Gray Snapper	5	5	5	15
Atlantic Croaker	7	5	2	14
Other (Not Listed, Specify Below)	1	5	4	10
No 2019 Trips	243	243	243	729
No Third Species	0	0	456	456
No Second Species	0	200	0	200

Table 5: Response volume for primary, secondary, and tertiary species targeted question

J. Analysis

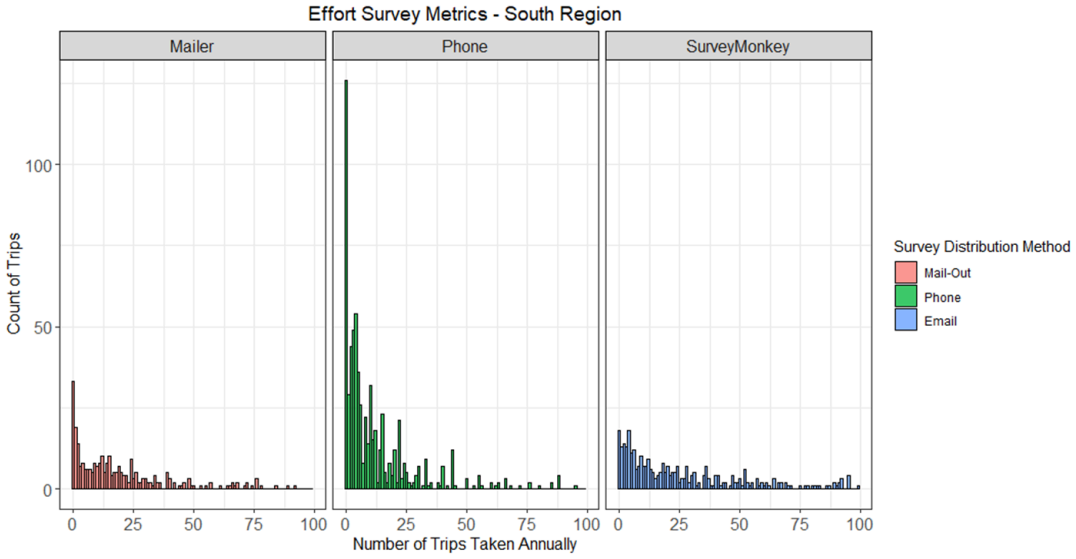
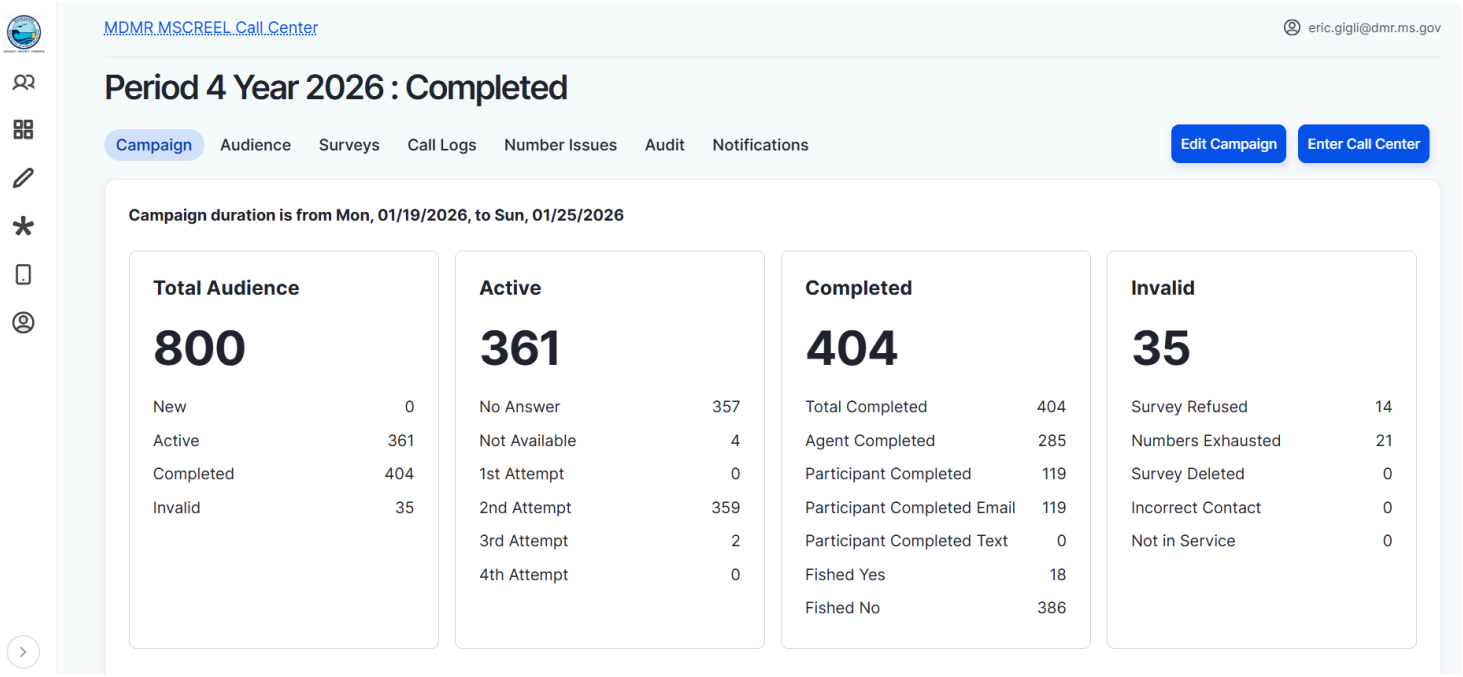


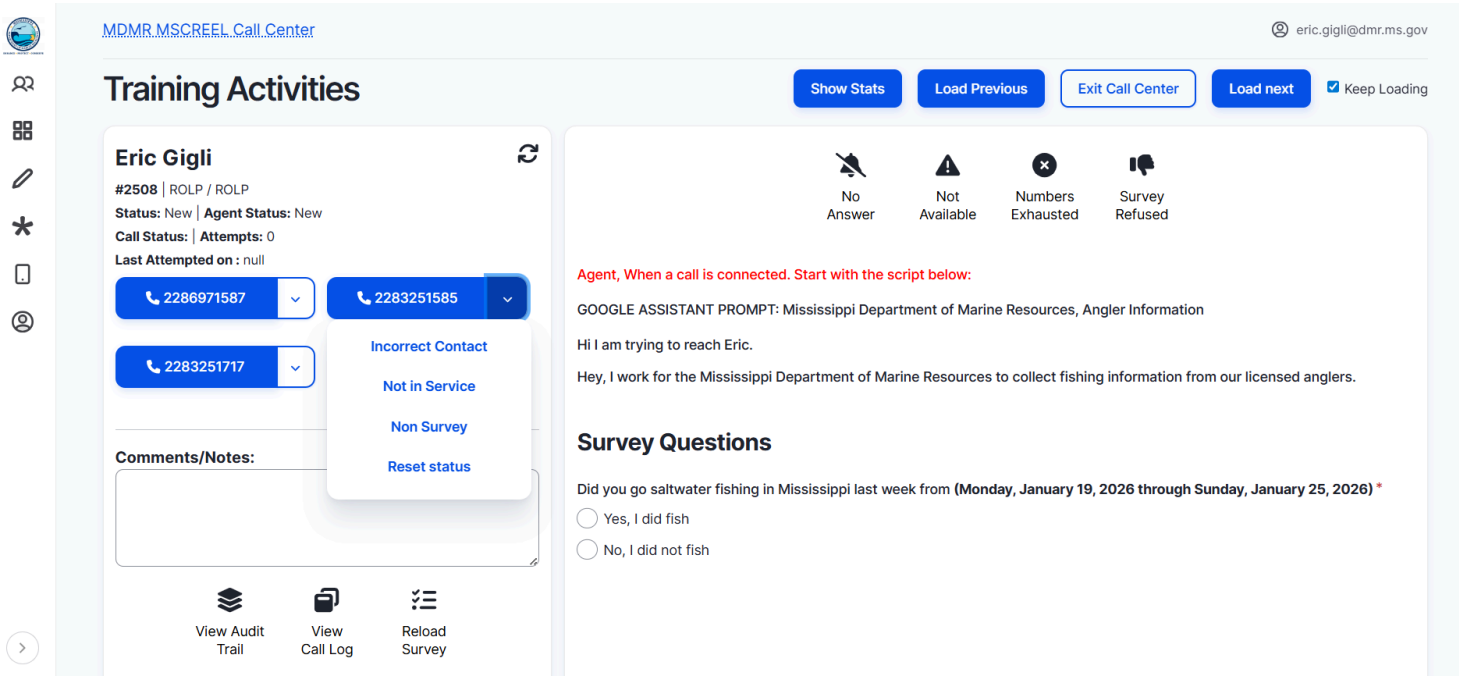
Figure 1: Raw distribution showing differences in magnitude of responses

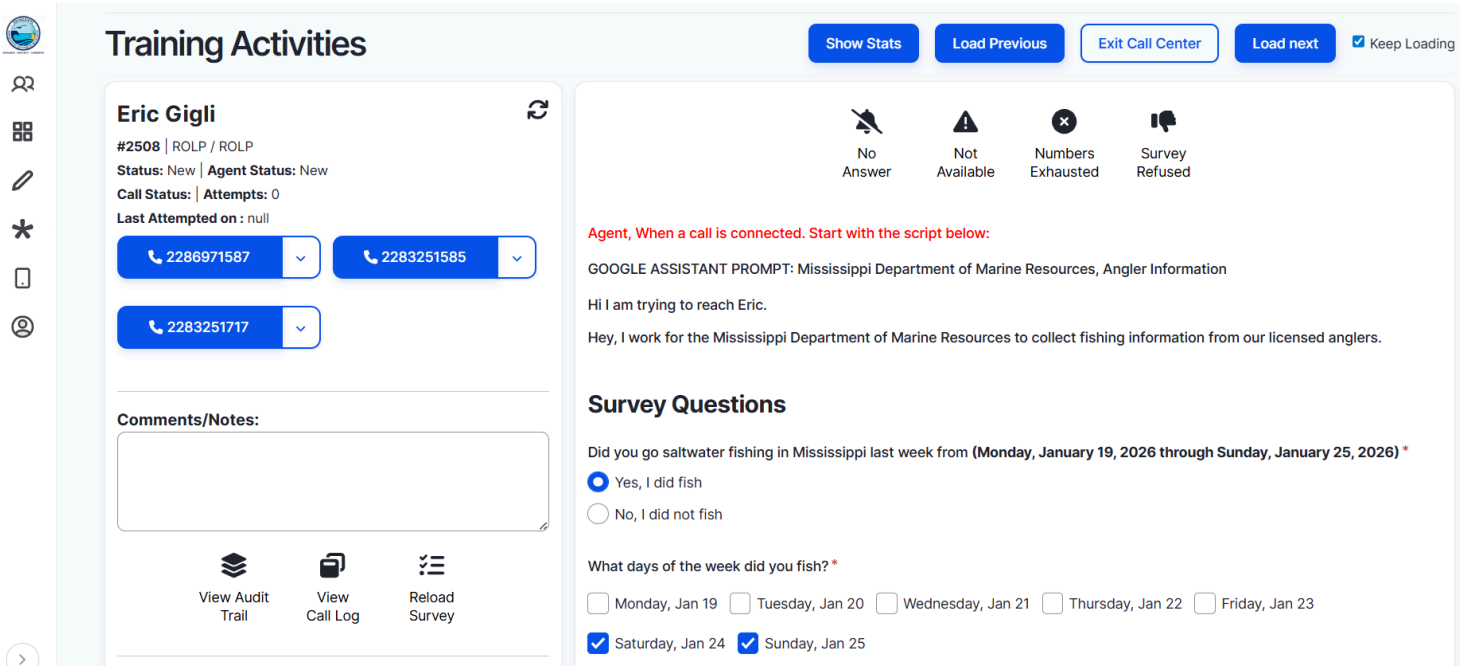
Utilizing reported effort from this survey for harvest estimates

- Trips per Mississippi resident licensed angler (weighted average) – 19.31

- Total number of Mississippi resident licensed anglers – 48,287
- Estimated number of trips taken by Mississippi resident licensed anglers in 2019 – 955,035
- Higher low-level responses (<10 trips) observed in the phone method when compared to other methods.


MDMR MSCREEL Call Center
eric.gigli@dmr.ms.gov
Period 4 Year 2026 : Completed
Campaign
Audience
Surveys
Call Logs
Number Issues
Audit
Notifications
Edit Campaign
Enter Call Center
Campaign duration is from Mon, 01/19/2026, to Sun, 01/25/2026
Total Audience
800
New 0
Active 361
Completed 404
Invalid 35
Active
361
No Answer 357
Not Available 4
1st Attempt 0
2nd Attempt 359
3rd Attempt 2
4th Attempt 0
Completed
404
Total Completed 404
Agent Completed 285
Participant Completed 119
Participant Completed Email 119
Participant Completed Text 0
Fished Yes 18
Fished No 386
Invalid
35
Survey Refused 14
Numbers Exhausted 21
Survey Deleted 0
Incorrect Contact 0
Not in Service 0


MDMR MSCREEL Call Center
eric.gigli@dmr.ms.gov
Training Activities
Show Stats
Load Previous
Exit Call Center
Load next
Keep Loading
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
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


Training Activities
Show Stats
Load Previous
Exit Call Center
Load next
Keep Loading
Eric Gigli
#2508 | ROLP / ROLP
Status: New | Agent Status: New
Call Status: | Attempts: 0
Last Attempted on : null
2286971587
2283251585
2283251717
Comments/Notes:
View Audit Trail
View Call Log
Reload Survey
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
What days of the week did you fish? *
Monday, Jan 19
Tuesday, Jan 20
Wednesday, Jan 21
Thursday, Jan 22
Friday, Jan 23
Saturday, Jan 24
Sunday, Jan 25

What days of the week did you fish? *

- [ ] Monday, Jan 19
- [ ] Tuesday, Jan 20
- [ ] Wednesday, Jan 21
- [ ] Thursday, Jan 22
- [ ] Friday, Jan 23
- [x] Saturday, Jan 24
- [x] Sunday, Jan 25

Saturday, January 24, 2026

Which of the following describes your fishing activity? *

- ( ) Private Boat
- ( ) Charter Boat
- ( ) Shore

About what time did your fishing trip end? *

11:26 AM

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

- ( ) Public
- ( ) Private

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

Sunday, January 25, 2026

Which of the following describes your fishing activity? *

- ( ) Private Boat
- ( ) Charter Boat
- (•) Shore

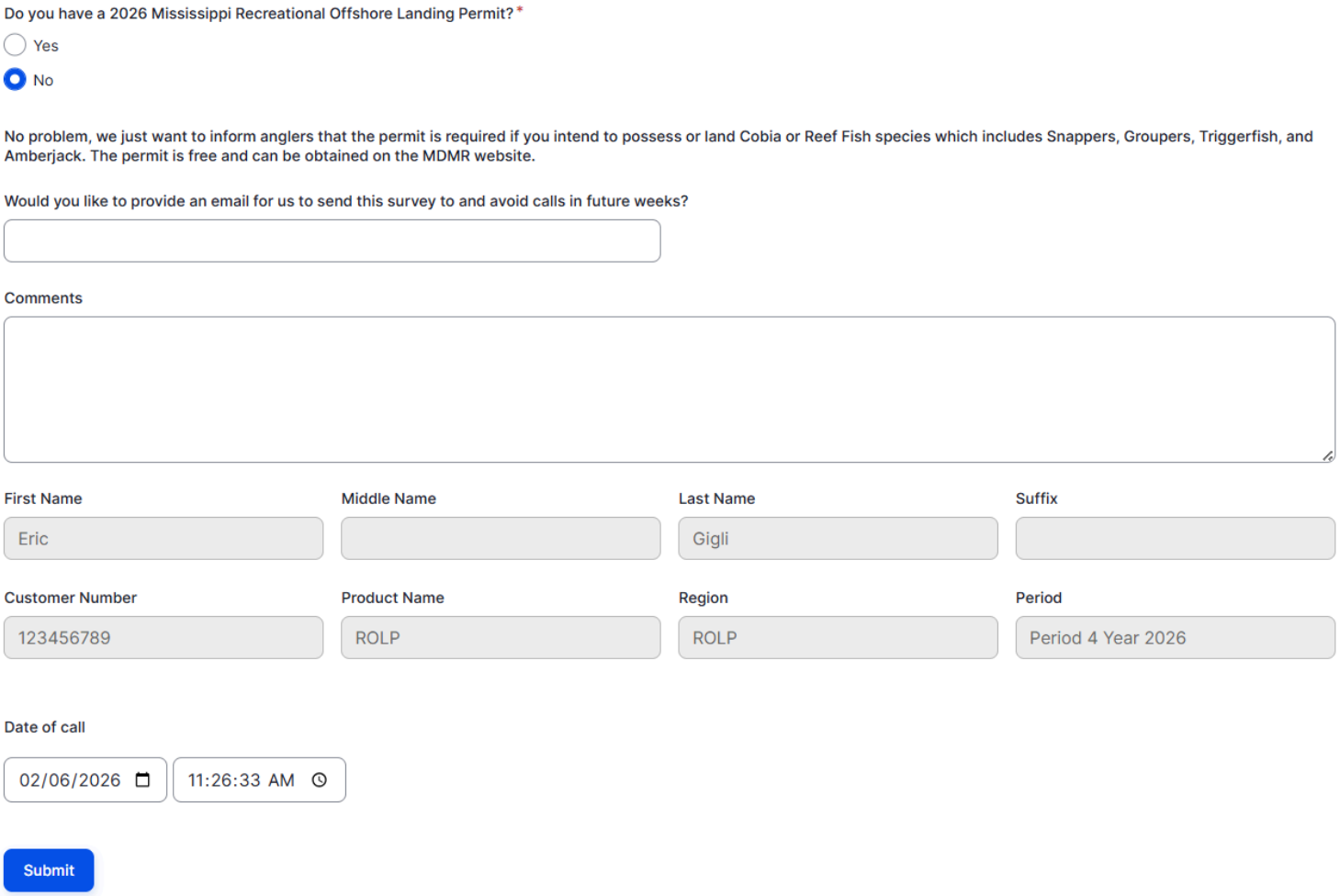
About what time did your fishing trip end? *

11:26 AM

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

Did you fish from a site that is open to the general public?

- ( ) Public
- (•) Private



Do you have a 2026 Mississippi Recreational Offshore Landing Permit? *

- ( ) Yes
- (•) No

No problem, we just want to inform anglers that the permit is required if you intend to possess or land Cobia or Reef Fish species which includes Snappers, Groupers, Triggerfish, and Amberjack. The permit is free and can be obtained on the MDMR website.

Would you like to provide an email for us to send this survey to and avoid calls in future weeks?

Comments

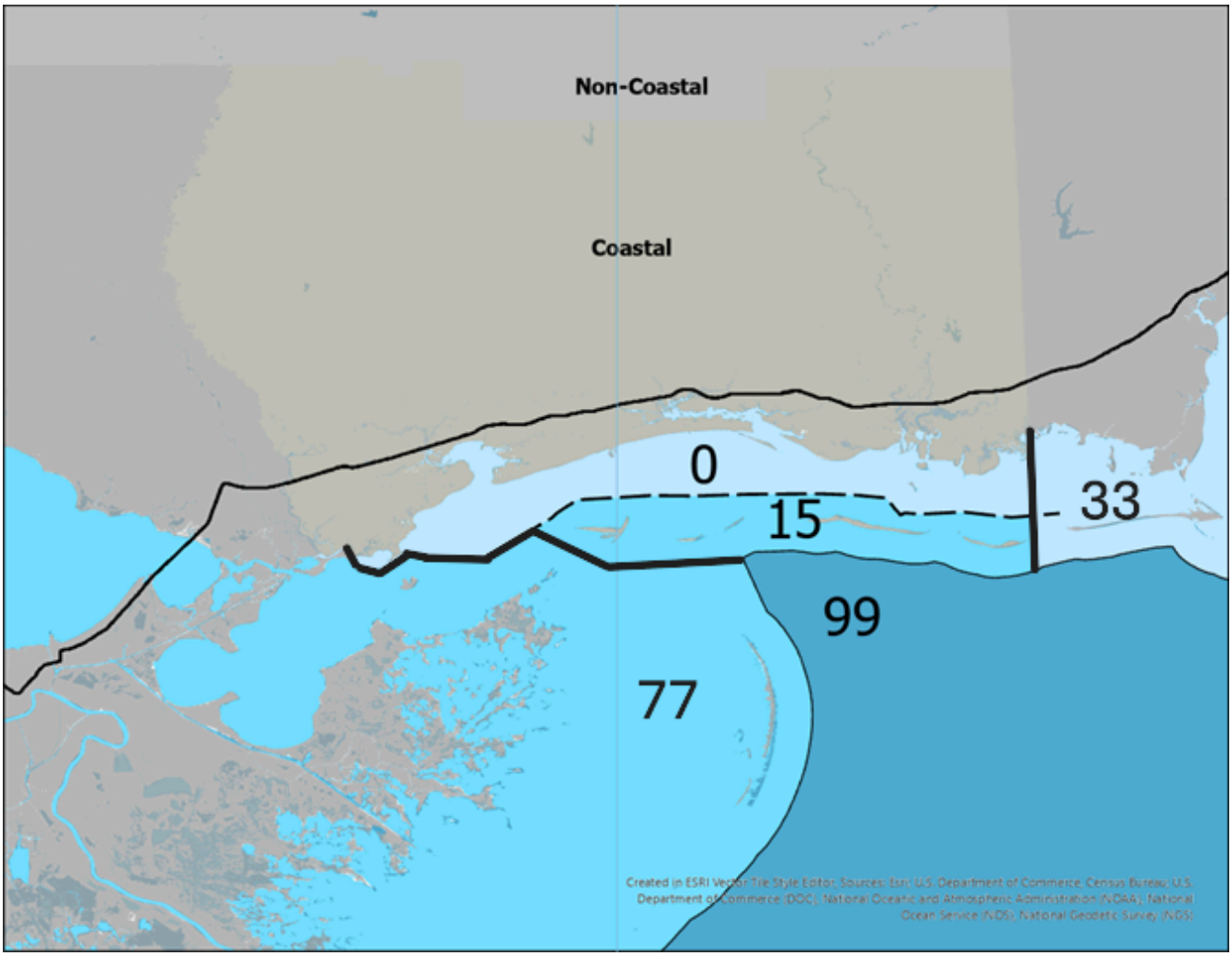
First Name	Middle Name	Last Name	Suffix
Eric		Gigli	

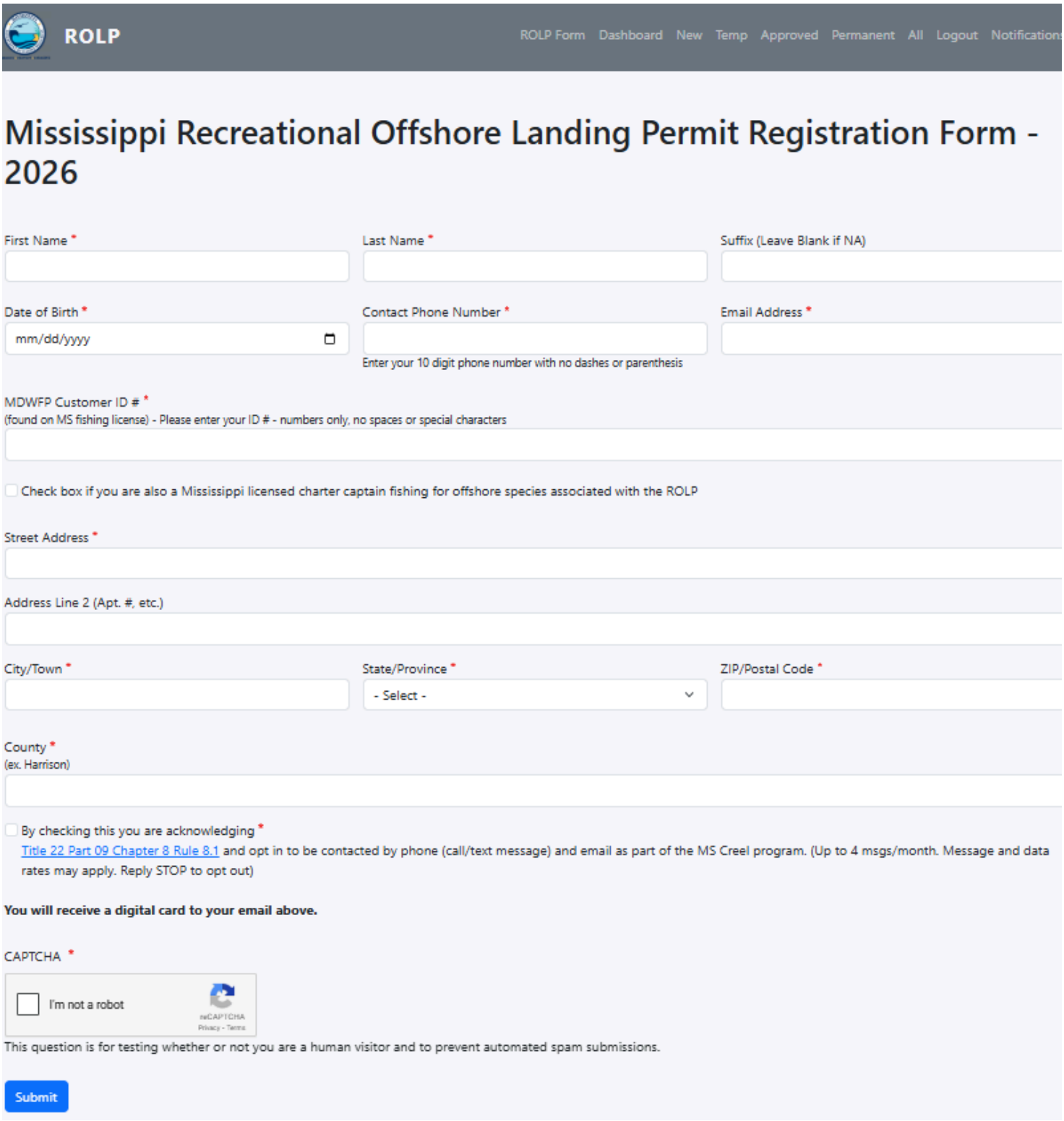
Customer Number	Product Name	Region	Period
123456789	ROLP	ROLP	Period 4 Year 2026

Date of call

02/06/2026 11:26:33 AM

Submit


Non-Coastal
Coastal
0
15
33
99
77
Created in ESRI Vector Tile Style Editor. Sources: Esri, U.S. Department of Commerce, Census Bureau, U.S. Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), National Geodetic Survey (NGS)



ROLP

ROLP Form Dashboard New Temp Approved Permanent All Logout Notifications

Mississippi Recreational Offshore Landing Permit Registration Form - 2026

First Name *

Last Name *

Suffix (Leave Blank if NA)

Date of Birth *

mm/dd/yyyy

Contact Phone Number *

Enter your 10 digit phone number with no dashes or parenthesis

Email Address *

MDWFP Customer ID # *

(found on MS fishing license) - Please enter your ID # - numbers only, no spaces or special characters

Check box if you are also a Mississippi licensed charter captain fishing for offshore species associated with the ROLP

Street Address *

Address Line 2 (Apt. #, etc.)

City/Town *

State/Province *

- Select -

ZIP/Postal Code *

County *

(ex. Harrison)

By checking this you are acknowledging *

Title 22 Part 09 Chapter 8 Rule 8.1 and opt in to be contacted by phone (call/text message) and email as part of the MS Creel program. (Up to 4 msgs/month. Message and data rates may apply. Reply STOP to opt out)

You will receive a digital card to your email above.

CAPTCHA *

I'm not a robot

reCAPTCHA

Privacy - Terms

This question is for testing whether or not you are a human visitor and to prevent automated spam submissions.

Submit

Peer Review of MS Creel Survey Design

Jill Dever, Ginny Lesser, Jean Opsomer

March 28, 2026

Terms of Reference:

1. Given that the MS Creel survey design is an adaptation of the certified LA Creel design, does the modified design continue to meet the criteria for certification, particularly with respect to the following subset of terms?
    a. Does the survey design follow a formal probability sampling protocol with known inclusion probabilities at all stages and/or phases of sampling?
    b. Do the estimation methods appropriately weight the sample data to account for the sampling design and produce design-unbiased point estimates and variance estimates?
    c. Is the accuracy of survey estimates dependent upon key assumptions? What are these assumptions? Are they clearly identified in survey documentation? Are they reasonable?
    d. Have non-sampling errors, including nonresponse/noncompliance, noncoverage (e.g., off-frame effort) and measurement errors been evaluated? Are appropriate methods in place to correct for potential biases resulting from non-sampling errors?
    e. Are appropriate methods in place to identify and evaluate the effects of implementation errors or deviations from design specifications on survey estimates (e.g., monitoring response rates, reviewing survey dispositions and/or response dispositions among interviewers, strata or reference periods)?

2. Does the MS Creel survey design offer equivalent or improved utility compared to the current survey program (i.e., MRIP APAIS-FES and/or MS Tails n' Scales) for stock assessments and fisheries management decisions?

Expert Evaluation:

1. *Given that the MS Creel survey design is an adaptation of the certified LA Creel design, does the modified design continue to meet the criteria for certification, particularly with respect to the following subset of terms?*

As further detailed below, we see no reason why the MS Creel should not be certified. Its overall structure continues to be based on complementary intercept and effort surveys, with designs that follow standard design-based sampling and estimation methodologies. A number of specific issues are described below, but none of them are sufficiently important to require addressing prior to certification.

   a. *Does the survey design follow a formal probability sampling protocol with known inclusion probabilities at all stages and/or phases of sampling?*

The nominal designs of both the catch and effort surveys are probability designs. The catch survey is a stratified two-stage design and the effort surveys have stratified element designs. These designs follow accepted survey methodology and are appropriate for these surveys. While the inclusion probabilities were not explicitly provided in the report, they are sufficiently standard that survey procedures such as those in SAS and R can compute valid estimates for those designs with the analysis weights.

The validity of the actual designs is dependent on how well they are implemented, e.g. does each sampling unit only appear in a single stratum (i.e. are ROLP anglers not also listed in the regular license strata), do all angling sites have a chance to be selected, etc. Based on the information provided, this appears to be the case for MS Creel, with most deviations from perfect implementation either considered negligible (e.g. sites with extremely low activity are not sampled) or corrected for in estimation (e.g. catch at private sites is explicitly assumed to be similar to that at public sites). These assumptions should be periodically checked to assume that they remain valid over time.

One potential issue mentioned during the follow-up meeting between MDMR (Mississippi Department of Marine Resources) staff and reviewers is that a substantial fraction of the license holders in the sampling frame have bad contact information. This is a possible concern, since there is the potential for anglers with bad contact information to have different behavior (number and/or type of trips) than those with useable contact information. It would be helpful to document the extent of this issue in the program description and to investigate how to increase the fraction of license holders with valid contact information in the sampling frame adopted in the future.

b. *Do the estimation methods appropriately weight the sample data to account for the sampling design and produce design-unbiased point estimates and variance estimates?*

The weighting methods indeed use the standard design-based approaches, so that both the point and variance estimates are generally statistically valid for their respective targets. However, there are two caveats to this statement.

The first one concerns the treatment of the state holidays, which appear to be completely excluded from the sampling frame for the catch survey (i.e. both in sampling and in estimation). However, the nominal target population is angling occurring during all days of the year, so there is a discrepancy between the frame and the population of the intercept survey. It is not clear whether angling behavior on holidays is different from the rest of the year, but given the small number of days, the effect is likely to be small. Nevertheless, we recommend that this be acknowledged in the program description, similarly to the explanation of what happens with angling at private access sites and night-time fishing.

The second concerns the variance estimation for total landings. The variance formula being used assumes that the estimator of total landings is the product of two *independent* estimators: adjusted effort x catch. But this assumption is incorrect due to the presence of the estimated license compliance rate in the estimator for adjusted effort. Because both the catch and the license compliance rate are estimated using the intercept survey, adjusted effort and catch are *not* independent. A correct variance formula should therefore include a covariance term. That term could lead to a larger or smaller variance estimate, but the current estimator that ignores the covariance term is not unbiased. While this second concern points to a conceptual error in how the variance of total landings is estimated, we understand that the same error is present in the MRIP and LA Creel variance estimates. Hence, the fact that it appears in MS Creel should not be something MDMR needs to correct on its own. This should be managed by MRIP so that all states use any similar corrections to this estimator.

c. *Is the accuracy of survey estimates dependent upon key assumptions? What are these assumptions? Are they clearly identified in survey documentation? Are they reasonable?*

The validity of the estimates assumes that catch at sites and times that are excluded from sampling (very low-activity sites, private access sites, night-time angling) is similar to that at eligible sites and times. These assumptions are also present in MRIP to some extent, so this is not an immediate concern for MS Creel. While the private access site equivalence would be difficult to assess, the effect of night-time returns could be

assessed with a targeted study, so it might be worth undertaking such an investigation in the future.

Another implicit assumption is that nonresponse in the intercept and effort surveys is assumed to be non-informative (i.e. respondents and nonrespondents have similar angling behavior within strata and within sites). This assumption is also present in MRIP, so this is not an issue for MDMR to address, unless MRIP provides guidance to all states to address this in future.

There is one concern that appears to be specific to MS Creel, at least in its magnitude. As noted under 1(a) above, the fact that a large fraction of the license frame cannot be contacted implies an assumption that contactable and non-contactable license holders have similar effort characteristics, since the effort survey weights use the license frame for construction. This is likely not fixable in the short term but should be a priority for future MS Creel improvement. In the short term, this should be explicitly identified in the survey documentation.

d. *Have non-sampling errors, including nonresponse/noncompliance, noncoverage (e.g., off-frame effort) and measurement errors been evaluated? Are appropriate methods in place to correct for potential biases resulting from non-sampling errors?*

See 1(c) above for a discussion of accounting for non-sampling errors. Since this is a new program, we are not aware of evaluations in MS Creel specifically. With the exception of the license frame issue, the assumptions and estimation adjustments follow the MRIP approach closely.

e. *Are appropriate methods in place to identify and evaluate the effects of implementation errors or deviations from design specifications on survey estimates (e.g., monitoring response rates, reviewing survey dispositions and/or response dispositions among interviewers, strata or reference periods)?*

The MS Creel documentation provided to date contains some information on quality assessment to monitor for implementation errors. Information entered by the data collection staff are “reviewed for logical inconsistencies and other automated, metric based acceptable ranges.” Identified errors are adjusted when possible and potentially removed otherwise prior to generating estimates.

Additionally, some information was relayed during the follow-up meeting between MDMR staff and reviewers regarding in-field supervisor monitoring. However, the field manual states, “Completely survey as many angler groups as possible, with priority

given to the specified fishing mode assigned (i.e., private vs. shore vs. charter), but without bias to vessel type (i.e., inshore vs. offshore), or number of anglers. Interviewer sampling activities should be representative of the activity occurring at the site, that day." We assume but cannot confirm that interviewer training addresses the concept of unbiased data collection and its importance for the estimates.

Protocols for monitoring and addressing response rate deviations by interviewer, strata, or data collection periods was neither described in the certification materials nor discussed during the follow-up meeting. As noted in 1(c), nonresponse is assumed to be non-informative. Consequently, nonresponse bias may be a fruitful area of research for MS Creel to confirm the non-informative assumption as well as to evaluate the data for any sizeable deviations across interviewer, site, time, etc.

2. *Does the MS Creel survey design offer equivalent or improved utility compared to the current survey program (i.e., MRIP APAIS-FES and/or MS Tails n' Scales) for stock assessments and fisheries management decisions?*

The overall structure of MS Creel continues to be based on complementary intercept and effort surveys, with designs that follow standard design-based sampling and estimation methodologies. Hence, the estimates are expected to be compatible with those of existing state surveys for the purpose of stock assessment and fisheries management. In fact, by making the designs more similar to those of LA and AL, implementation of MS Creel should facilitate direct comparisons between state fisheries that are targeting similar stocks and can lead to synergies in developing future methodological improvements.

Whether there are utility improvements will depend primarily on the sample sizes of the intercept and effort surveys compared to those in prior surveys. In addition, since most assumptions for MS Creel are similar to MRIP, we assume that the survey designs are equivalent. We were not provided with detailed sample size comparisons between the two, so we are not able to comment on the variance impact specifically.