# Technical Subcommittee Meeting Summary

May 28-29, 2014

## 1 Background

Catch from recreational anglers comprises a substantial proportion of total catch for many species in the regions managed by the Gulf of Mexico and South Atlantic Fishery Management Councils. For-hire data collection programs gather information on fishing effort and catch by marine recreational anglers fishing on professionally licensed for-hire vessels (including charter, guide, and large party boats). NOAA Fisheries supports regional programs to collect these statistics, with the ultimate goal of building a system of data collection programs that are responsive to regional needs and are coordinated at the national level to provide standard data elements for both regional and national assessments of fish stocks and associated fisheries management.

Recreational harvest from for-hire vessels in the Southeast Region are monitored through a combination of effort and dockside intercept surveys. The Marine Recreational Information Program's (MRIP) for-hire survey (FHS) estimates charter vessel catches of state and federally managed species off the U.S. Atlantic and Gulf coast states, with the exception of Texas and more recently, Louisiana. The Texas Parks and Wildlife Department conducts their own creel survey to estimate private and charter landings and South Carolina currently administers a paper-based logbook reporting program concurrent with MRIP. In recent years, interest by constituents and the Councils has been growing to implement electronic reporting requirements in the for-hire sector. There is general distrust of MRIP landings estimates and managers and fishermen have expressed a need for more timely and accurate data to support fishery monitoring, science, and management. Additionally, the National Research Council's (NRC) review of recreational survey methods concluded that in most cases charter boats should be required to maintain logbooks of fish landed and kept. These factors led to an electronic logbook pilot study of Texas and Florida charter vessels in 2010-11 and new electronic reporting regulations for headboats in 2014. Four additional projects have also been funded by MRIP or the National Fish and Wildlife Foundation in 2014 to test new (or improved) approaches for monitoring charter vessel catch and effort. The Gulf of Mexico and South Atlantic Fishery Management Councils have also passed motions at recent meetings to require electronic reporting by charter vessels and they formed this technical subcommittee to develop

recommendations for the Councils' consideration by December 1, 2014, on how to best achieve an electronic reporting system for charter vessels. The technical subcommittee met May 27-28, 2014 to discuss and begin drafting recommendations to the Councils. The technical subcommittee reached consensus of several aspects of a proposed program and identified some areas (decision points) where the Councils' input is required.

# 2 Objectives

The Councils appointed a technical subcommittee (membership list below) to develop recommendations to implement an improved data collection program to support the needs of science, fisheries management, and address stakeholder concerns about data quality. Specifically, the technical subcommittee was charged with developing recommendations to implement electronic reporting for charter vessels in the Gulf of Mexico and US South Atlantic in support of the following objectives:

- Increasing the timeliness of catch estimates for in-season monitoring of particular species;
- Increasing the temporal (and/or spatial) precision of catch estimates for monitoring particular species;
- Providing vessel-specific catch histories for management;
- Increasing stakeholder trust and buy-in associated with data collection;
- Reducing biases associated with collection of catch statistics.

# 3 Technical subcommittee members

## 3.1 Membership

**Gregg Bray - GSMFC**

**Ken Brennan - SEFSC**

**Mike Cahall - ACCSP**

**Mike Errigo - SAFMC**

**John Froeschke - GMFMC**

**Eric Hiltz - SCDNR**

**Ron Salz - MRIP**

**Beverly Sauls - FWC**

**George Silva - HMS**

**Andy Strelcheck - SERO**

**Doug Mumford - NCDENR**

**Mark Fisher - TPWD** (unable to attend)

### 3.2 Timeline

- June 2014 - Provide meeting summary to Councils for review and guidance;
- July 2014 - Technical subcommittee conference call to discuss Councils' review and guidance;
- September 2014 - Technical subcommittee meeting (if necessary);
- November 2014 - Draft report to subcommittee for review;
- December 1, 2014 - Provide report to Gulf and South Atlantic Councils.

## 4 Recommendations

The technical subcommittee discussed trade offs and limitations of potential modifications to fisheries reporting in for-hire fisheries. The subcommittee agreed (by consensus) on preferred approaches for several aspects, identified areas where Councils' guidance is needed, and discussed barriers to implementation of a new program. The subcommittee emphasized that the program should *not* be designed around a single species, and should be flexible enough to accommodate different reporting requirements for different segments of the for-hire fleet. For example, if federally permitted vessels were required to report more frequently during red snapper seasons, other vessels that do not participate in this fishery should be able to continue reporting at their normal frequency. Similarly, an electronic reporting system should be able to accommodate vessels already required to carry VMS units for participation in commercial fisheries without necessarily requiring all for-hire vessels to report through VMS.

### 4.1 Mandatory or voluntary participation?

The technical subcommittee discussed participation in any new charter vessel fisheries monitoring program. Specifically, the subcommittee considered if participation in the program by charter vessel owner/operators could be voluntary or if mandatory participation is necessary. Voluntary reporting programs can be advantageous in that reporting burden is reduced (or absent) from participants that do not wish to participate. This

would also reduce the number of reports that require processing for catch and effort estimation. However, in absence of a complete sample, estimation procedures are necessary. Estimation procedures can be accurate and robust in a well-designed survey, however, likely at the expense of reduced timeliness. Developing estimates of total catch from a volunteer program is problematic as the proportion of participants may be unknown and/or variable through time or across the survey area and volunteer participants may not be representative of all possible participants in this survey. This pattern has been demonstrated previously (e.g., angler avidity) in other studies of volunteer programs and will bias estimates when expanded to the total estimate. Voluntary programs would also require careful consideration of the characteristics of the participants and those who choose not to participate as it is impossible to compare catch patterns with participants and non-participants, an assumption that they are identical is necessary but likely inaccurate. The subcommittee agreed that the potential for bias is too great to recommend any voluntary reporting program and suggested that any program (i.e., census or survey) *require* reporting from participants if selected (e.g., Southeast Region Headboat Survey (SRHS)).

**The subcommittee agreed that the potential for bias is too great to recommend any voluntary reporting program and mandatory participation is necessary for vessel/vessel operators selected. This is recommended to best achieve the overarching objectives of the proposed program.**

## 4.2 Survey or census?

Both census and statistical surveys can (and are) used to estimate catch and effort in marine fisheries. Surveys are beneficial in that a representative sample of anglers (as opposed to the entire "population" of anglers in the fishery) and their catch is used to estimate the total catch. However, management often requires these estimates over relatively small areas or short-time scales and survey estimates can be too imprecise in these cases to provide management advice. The common remedy is too increase sample effort (i.e., sample size) to achieve desired precision levels, however, the necessary sample size may exceed program resources. An additional challenge of surveys is that the strata (e.g., area, time-period) require complete coverage before making an estimate. In practice, this means the surveys generally have a longer lag between the time fishing occurs and when the resulting data are available for use. This occurs because of the sampling blocks and the additional time to compute the estimates.

A census provides a sum of the total effort and catch by tabulating these metrics from all participants in the fishery. In theory, reporting and subsequent use of these data in management can be rapid as no additional estimation procedures are necessary and the report submission frequency can be established (e.g., weekly) to balance management needs with reporting burden on fishery participants.

In practice, estimating catch and effort from a census can be challenging if some participants do not report their catch and effort data within the specified reporting periods.

In this event, the census is incomplete and requires an expansion factor to compute the total estimate. As with a survey design, this estimation routine requires additional time, resources, and reduces precision of the estimate. In extreme cases, expanding an incomplete census to a total estimate can be difficult or impossible if the proportion of non-compliant participants is large or if the non-compliant participants are markedly different that those that are reporting as required. Nonetheless, this capability is essential in a real-world census and is important to consider when developing reporting requirements (frequencies and accountability measures) and minimum acceptable lag-time for use in fisheries management.

**The technical subcommittee recommends the development and implementation of a electronic logbook *census* program to estimate catch and effort for from southeast region charter vessels. This was recommendation was based in part of the inability of the current survey to meet the needs of science and management applications and the requirement of timeliness beyond which is readily achievable through a survey approach.**

## 4.3 Reporting frequency

The subcommittee discussed how often reports need to be submitted to provide timely data for science and management. Frequent reporting has at least two benefits. Reporting as frequently as practicable reduces recall error/bias when producing catch reports. Frequent reporting also can make these data available for use sooner. Currently, the Gulf and South Atlantic Councils have required electronic reporting on a weekly basis for commercial seafood dealers and federally permitted headboat operators. Similarly, the subcommittee recommends mandatory weekly reporting or at shorter intervals if necessary for a new charter vessel program. A second recommendation was that reports be due from the prior fishing week as soon as practicable. Commercial seafood dealer reports must be submitted by the Tuesday following the previous fishing week. This was considered preferable over the headboat reporting requirements where trip reports are due one week after the end of the fishing week. The reduced lag addresses both advantages identified above. Moreover, the current week delay in reporting for headboats is less desirable for reporting purposes.

**The technical subcommittee recommends trip level reporting with weekly submission due the Tuesday following each fishing week. This would include no activity reports that could be submitted in advance if periods of inactivity are known. The technical subcommittee discussed that a daily reporting requirement may not be feasible or enforceable, however, reporting systems and user interfaces should be designed to encourage "real-time" at-sea reporting of catch and catch related data elements (e.g. fishing location, fishing method, target species)."**

## 4.4 Data collection

A variety of software applications are available for data collection and submission including web, smart phone, and tablet based technology. Web-based software provide the capability to report fisheries data after completing the trip. Smart phone or tablet technology could be used for at-sea or real time reporting of catch and effort. This approach may limit the complexity of reporting options but could provide enhanced validation methods because catch and effort data could be submitted before returning to port allowing enhanced dockside validation.

**The subcommittee recommends a multi-faceted approach where a number of platforms can be used so long as the minimum data standards are met. Data standards would need to be developed and the subcommittee agreed that the GulfFIN and ACCSP could work collaboratively to develop appropriate standards.**

## 4.5 Data storage and management

The subcommittee discussed data storage and management that would be necessarily expanded from the status quo in a census based monitoring program. The ACCSP and GulfFIN expressed willingness to handle these raw data and indicated this could be accomplished with extant resources.

**The subcommittee recommends this process:**

1. Logbook data collected via authorized web or phone application;
2. Data submitted to ACCSP or GulfFIN;
3. Data integrated by ACCSP or GulfFIN into single composite data set;
4. Composite data set distributed to appropriate agencies for analyses and use.

This process could reduce or eliminate duplicate reporting for some participants so long as appropriate data standards are in place and the respective agencies agree to confidentiality standards, which would allow sharing and accepting one another's data for use. A reduction or elimination of duplicate reporting would be a substantial benefit to participants in this survey program and could mitigate any additional reporting requirements for comparison to the current MRIP survey program.

## 4.6 Validation and estimation

A successful electronic for-hire program will require adequate validation of catch and effort data and will require collaboration among state, federal, and fishery information network (FIN) programs. A census is likely to be incomplete and cooperation with MRIP to develop estimation procedures for adjusting catch estimates. Estimation lag should

be built into the timeliness need for science and management applications. Compliance, validation, and accuracy of reports also need to be taken into consideration before management decisions are made. The Gulf MRIP pilot program tested new validation procedures and provided guidance on improvements necessary before full implementation. The pilot program was successful in that electronic reporting was used (almost exclusively) and supported many of the goals (e.g., more timely, simplified reporting process) yet, many participants failed to submit reports during the required time frame complicating the use of these data for management and highlighting the need for validation and an estimation procedure to compute total catch and effort. If practicable, the subcommittee recommends using observers on six-pack charter vessels. Additionally, VMS in conjunction with hale-out, hale-in to improve validation could be considered to improve validation and data quality, although at the expense of additional cost and reporting burden.

**The subcommittee recommends use of an MRIP certified methodology for validation with the following elements:**

**Minimum elements for validation**

- Gulf MRIP pilot program methodologies;
- Dockside validation of catch;
- Dockside validation of vessel activity.

**Additional elements recommended**

- At-sea observer coverage;
- Fine-scale discard data, depths of capture, area fished, release mortality.

**Elements for consideration**

- VMS;
- Hale-out, hale-in.

## 4.7 Accountability measures

Procedures to ensure timely and accurate reporting of data are essential to the success of any program. Late or missing reports can reduce accuracy (recall bias), increase uncertainty (e.g., requires procedure to estimate catch from missing reports), and can prevent timely use of these data for science and management. The Councils recently began requiring electronic submission of reports from commercial seafood dealers. Dealer reports

and the associated problems with late or missing reports were discussed at length by the Councils. The Councils now require timely submission (weekly, with reports submitted by the Tuesday following the previous fishing week) and that seafood dealers are *only* authorized to purchase seafood if they are up to date on previous reports. A similar procedure could be developed for charter vessels requiring submission of previous reports to maintain a valid charter vessel permit. The subcommittee recognizes that accountability will be challenging and costly to implement due to the mobility, turnover and sheer number of charter vessels.

The principle objective is to *encourage* compliance without issuing fines and/or penalties. However, the full range of potential accountability measures should be enumerated in consultation with NOAA General Counsel to inform future discussion of the technical subcommittee. Also, similar (or identical) reporting requirements should be established between the South Atlantic and Gulf management regions that will ease reporting burden and aid in compliance. Extensive outreach, training (as necessary) and positive messaging and industry participation in the design of the data collection system should aid in reporting compliance and meeting the goals of the program.

**The subcommittee recommends accountability measures and reporting requirements similar to those implemented for commercial seafood dealers in the southeast region (i.e., weekly submission of trip level reports, including periods of no activity due Tuesday following each week). A charter vessel owner/operator would only be authorized to harvest or possess federally managed species if previous reports have been submitted by the charter vessel owner/operator and received by National Marine Fisheries Service (NMFS) in a timely manner. Any delinquent reports would need to be submitted and received by NMFS before a charter vessel owner/operator could harvest or possess federally managed species from the EEZ or adjacent state waters.**

## 4.8 Calibration with existing survey

Transitioning into the proposed program will require an upstart period of at least one year to conduct outreach and ensure a high level of compliance. **The subcommittee recommends dual survey methods (existing and new) for no less than three years.** This overlap in survey periods will provide a basis to calibrate the new census results to the historical catch and effort data from the existing charter vessel survey. Historical catch data are critical inputs for science (e.g., stock assessments) and management (e.g., season length) and implementation of a new system without calibration would compromise the value of the historical catch information. Additionally, implementation of the new program is likely to have start-up difficulties that require modification, as such, the *existing survey would not be expected to provide the best scientific information available (at least for the first year)* until the new program deemed operational.

**Data from then new program would not be expected to provide management advice during the first year of operation.** Moreover, this would allow the possibility of an initial phase-in or limited implementation to identify and solve significant problems prior

to implementation for all participants.

## 4.9 Should state permitted for-hire vessels be required to participate?

The subcommittee discussed the objectives of the proposed program (i.e., improved estimates of catch both in terms of timeliness and accuracy). To best accomplish this for federally managed stocks in the region, state permitted vessels should be incorporated into the program. While not strictly under the purview of federal management, by number, they are the majority of for-hire vessels and some vessels may harvest federally managed species.

**The subcommittee recommends that the Councils begin to explore promulgating rules which would require state reported charter vessels to report electronically in this new program. The subcommittee discussed that a successful program would incorporate state vessels and their associated landings (and effort) and that both programs would overlap for a period of three years.**

## 4.10 Program coordination

The subcommittee discussed that the success of the program requires a smooth and well-coordinate program throughout the region. This is to meet timeliness needs, improve accuracy (and precision), and minimize duplication of effort.

**To this end, the subcommittee recommends that GulfFIN and ACCSP committees work jointly with end users (i.e., MRIP, SERO, SEFSC, HMS, and state agencies) to coordinate this new reporting program. Both quality control and quality assurance units in the program to ensure data meets required standards. A timeline must be developed with states and other agencies on implementation of the program.**

## 4.11 Budgetary implications

The vision of the subcommittee is that the proposed census program may be funded through MRIP and incorporate MRIP certified validation and estimation procedures but operation would be decentralized from MRIP to regional and state entities through their FINs.

**The technical subcommittee recommends developing an estimate of the potential cost the proposed program (*as recommended*) compared to the current existing for-hire survey. It is expected that the census approach recommended by this subcommittee would result in additional costs for monitoring compliance and validating trip activity. Additional infrastructure and personnel may be necessary to maintain and process these data.**

**New start-up costs**

- Implementation/roll out;
- Additional infrastructure and personnel;
- Outreach/education.

**New on-going costs**

- Need to develop an estimate of the costs for the final report.

# 5 Challenges

## 5.1 Calibration with existing survey

The subcommittee recommends dual survey methods (existing and new) for no less than three years. This overlap in survey periods will provide a basis to calibrate the new census results to the historical catch and effort data from the existing charter vessel survey. Historical catch data are critical inputs for science (e.g., stock assessments) and management (e.g., season length) and implementation of a new system without calibration would compromise the value of the historical catch information. Additionally, implementation of the new program is likely to have start-up difficulties that require modification, as such, the *proposed census would not be expected to provide the best scientific information available (at least for the first year)* until the new program was deemed operational.

## 5.2 Reporting burden

Although frequent reporting with as short as practicable lags between end of fishing period and report submission, the burden of reporting on vessel operators is an important concern. Wherever feasible, the reporting burden should be minimized. Implementation of this new program would require additional reporting burden over the status quo. To mitigate this requirement, the subcommittee recommends reducing duplicate reporting (submission of reports to multiple agencies, possibly in different formats) to ease reporting requirements. For example, charter vessels selected for telephone survey from current survey) should be able to submit their data electronically satisfying the submission requirements for both programs.

## 5.3 Compliance

Ensuring compliance is likely the biggest barrier to achieving the objectives for this program; more timely data with improved accuracy and stakeholder confidence. The MRIP Gulf logbook pilot project was negatively affected by late or missing reports from participants. In a census program, this is detrimental to both timeliness and accuracy as complete catch estimates cannot be generated with missing reports. Late reporting also affects accuracy because of recall bias (i.e., difficult to remember what was caught several weeks earlier). In addition, an incomplete census will require an estimation procedure to account for un-reported landings that requires time and adds uncertainty to the final catch and effort estimates.

Adequate accountability measures are essential to achieving high compliance rates (i.e., 100% timely reporting). The subcommittee recommended an approach similar to the accountability measures recently developed for commercial seafood dealers. Briefly, commercial seafood dealers are only authorized (i.e., possess valid permit) to purchase seafood if their weekly purchase reports have been submitted. A similar accountability measure for charter vessel operators would only allow them to take passengers for-hire if their previous trip (including no activity) reports have been submitted. The effectiveness of this accountability measure is dependent of the capability of law enforcement to enforce reporting requirements. **The subcommittee recommends consultation with the Office of Law Enforcement and NOAA General Counsel to explore the selection of appropriate and enforceable accountability measures.**

## 5.4 Collaboration with States

Individual States would be tasked with data collection and validation within their collective states. State requirements vary regarding reporting of fishery data with some states (e.g., South Carolina) requiring the submission of paper-based reporting. Other states (e.g., North Carolina) are progressing rapidly toward electronic logbooks with the other states within this range. **The subcommittee recommends that both state and federally permitted charter vessels participate in this census to include the entire fleet of charter vessels harvesting federally managed species.** Consideration of only federally permitted vessels would ease the implementation of this process with the caveat that a large proportion of charter vessels would not be included in the census and their catch (and effort) would have to be estimated via other means that would reduce effectiveness of the census program. However, for state-permitted vessels, requiring electronic reporting without duplicate paper reporting may require legislative changes in some states (e.g., South Carolina) and there is uncertainty if or when this could be accomplished.

# 6 To-do list

- Develop a timeline for potential implementation in coordination with states and applicable agencies;
- Consider if current regulations would accommodate the recommended logbook program or if modification to state and/or federal regulations are required;
- Develop a cost estimate of the new program (as described and/or modified via Councils' guidance);
- Develop a suite of potential accountability measures in consultation with NOAA General Counsel and appropriate state representatives to encourage timely and accurate reporting.

# 7 Program vision overview

- Complete census of all participants;
- Prefer inclusion of both state and federally permitted participants in the program;
- Mandatory, trip level reporting with weekly electronic submission. Give flexibility to require submission more frequently than weekly if necessary. Give flexibility to declare periods of inactivity in advance;
- Development of compliance tracking procedures that balance timeliness with available staff and funding resources;
- Implementation of accountability measures to ensure compliance;
- Use validation methods developed in the Gulf of Mexico logbook pilot survey as a basis to ensure that the actual logbook report is validated and employ standardized validation methodology among regions;
- Minimize reporting burden to anglers by reducing (or eliminating) paper reporting and eliminating duplicate reporting;

  Reduce (or eliminate) paper reporting;

  Eliminate duplicate reporting;
- Maintain capability for paper-based reporting during catastrophic conditions;
- Require and maintain comprehensive permit/email database for participants;
- Develop and implement program in close coordination with MRIP, SERO, SEFSC, HMS, and state agencies, including procedures for expanding estimates for non reporting;
- Allow multiple authorized applications or devices to report data;

- Ensure Southeast and Northeast Regional managers accept each other's electronic data to eliminate redundant reporting.

# 8 Decision points

- State or only federally permitted vessels;
- Vision of accountability measures for ensuring data timeliness and accuracy. What range (type, magnitude, range) of accountability should be considered;
- Should there be different reporting options for those who do not have internet access for reporting;

  Allow paper reporting with agency entry of data;

  Should paper reporting require an additional fee on the permit to mitigate agency costs;
- Some states regulations currently incompatible with mandatory electronic reporting;
- Should the system be able to accommodate future needs such as VMS with hale-out, hale-in requirements to improve catch and effort information.

# 9 Audience

**Jeff Barger - Ocean Conservancy**

**J.P. Brooker - Ocean Conservancy**

**Dennis O'Hern - Fishing Rights Alliance**