Tab D, No. 4

Draft - Shrimp Focus Group Summary
Webinar Meeting
October 21, 2021
9:00am – 5:00 pm ET

Members and Alternates Present:
Leann Bosarge
Glenn Delaney
Dave Gloeckner
Alan Lowther
Jim Nance
Corky Perret
James Primrose
Nathan Putnam (alternate for Benny Gallaway)
John Walter (alternate for Dave Gloeckner)
John Williams (alternate for Glenn Delaney)

Council Staff:
Matt Freeman
John Froeschke
Karen Hoak
Camilla Shireman
Carrie Simmons
Carly Somerset

Support Staff:
Frank Helies
Peter Hood
Mara Levy
Michelle Masi
Steve Smith
Kelly Spalding

NMFS Staff:
Manny Antonaras
Michael Barnette
Bob Hogan
Kimberly Johnson
Jesse Leslie
Rich Malinowski
Liz Scott-Denton
Rebecca Smith
Carolyn Sramek
Andy Strelcheck
Michael Travis
Jo Williams
Matt Walia

GSMFC Staff:
Donna Bellais
Lloyd Kirk
Joseph Ferrer

Council Members:
Leann Bosarge
Dale Diaz
Bob Gill

The Shrimp Focus Group (Focus Group) met on October 21, 2021 via webinar. The Focus Group had no objection to the agenda. Dr. Freeman reviewed the charge and objectives for the Focus Group.

Overview of current cELB units' programming and implementation

Dr. Nance provided an historical overview of the shrimp effort data collection program. He explained that shrimp effort information was collected from the 1960s through the late 1990s by

port agents through interviews of shrimp boat captains. However, data on areas being fished was less precise as trips became longer in time away from port. In the late 1990s and early 2000s, LGL, in association with the shrimp industry, began work with the National Marine Fisheries Service (NMFS) Galveston Laboratory to develop an automatic method to collect effort data through an Electronic Monitoring System (ELB). In this program, vessel position data was passively collected by a GPS device every 10 minutes and stored on a Secure Digital (SD) card for later transmission to NMFS. Although the data were collected with high frequency (i.e., every 10 minutes), this program was never intended for real time transmission of the vessel position information, as this was unnecessary to estimate shrimp effort of the fleet. A congressional line item provided funding for this program through roughly 2011. After 2011, NMFS became the responsible source for the money to continue the program and the agency recognized the need to develop an ELB that could send the data directly to a computer. A software engineer at the NMFS Galveston Laboratory began initial programming around 2013 for a Cellular Electronic Logbook (cELB). Testing of the cELB units first took place on NOAA laboratory ships, followed by testing on six shrimp vessels. Year-end money from the Pacific States Marine Fisheries Commission was used to purchase around 800 cELB units. Approximately, 500 shrimp vessels (permits) were randomly selected to carry the system. If a vessel had an original ELB, then that unit was kept active for purposes of comparison between the data collected from the original ELB and the new cELB units.

Ms. Bosarge inquired if the original computer programmer was still employed at Stennis. Dr. Nance said that the programmer was no longer at Stennis. Mr. Perret emphasized Dr. Nance's statement that the system was never intended for real time data. He asked how important it was to have real time data and also asked if the Gulf states were providing real-time data. Dr. Nance stated that the real time data was never an issue for Gulf shrimp, given its purpose as scientific data, although it was needed for rock shrimp. During the development of the original ELB, vessel speed was determined to be an important component, and 10-minute intervals were scientifically evaluated as being a good measure of time. Dr. Gloeckner added that state data goes to the Gulf States Marine Fisheries Commission (GSMFC). Ms. Bellais (GSMFC staff) said that there is a 2-month lag time for state data to be received by the GSMFC.

Presentation on elements of data from current cELB units

Dr. Primrose (SEFSC staff) reviewed the format and file in which the data are collected. Latitude, longitude, and a timestamp are collected every 10 minutes as a ".dat" file. He next provided an image of the cELB unit and discussed the various components. He reviewed the original process of data transmission with the 3G network and compared that with the current mail-in process. He noted that 100% of data was previously collected, whereas data recovery is about 55% with the mail-in process. Furthermore, as cELB units break down, overall coverage will lag as new vessels are not being recruited. He also discussed that, in order to meet Section 7(b) of the Endangered Species Act from the recent shrimp Biological Opinion (BiOp) regarding reasonable and prudent measures, NMFS must ensure that future fisheries effort monitoring is conducted at equivalent, or greater, levels as conducted over the past 10 years. Lastly, Dr.

Primrose noted that there are four broad categories that feed into system components: data collection; data transmission; data storage and analysis; and policy.

Mr. Delaney asked for more information regarding the recent shrimp BiOp and how that relates to current shrimp data collection. Dr. Walter stated that, currently, fisheries effort monitoring is not being conducted at equivalent levels, and there is no clear plan for greater levels. Therefore, a solution is needed quickly.

Dr. Nance commented that keeping the same data file format would be ideal, so that no changes to the current algorithm would be needed.

Ms. Bosarge asked what would be required to have the current cELB units transmit again. She asked if a new type of antenna or use of the ethernet port would be possible solutions. Dr. Nance replied that the current cELB units are only compatible with the 3G network and are not able to utilize the 5G network. Dr. Primrose concurred with Dr. Nance's statement. He stated that it might be possible for something would to be developed to utilize the ethernet port and that all units in the field would then have to be recalled to be updated. Dr. Masi noted that units in the field may have some corrosion, due to time spent on vessels, and reiterated that shrimpers would have to ship the units back to NMFS for any updates. Dr. Masi commented that she would not be supportive of updating the cELB units. Ms. Bosarge noted that new units would be needed if the industry switched to a new data collection program, so some shipping costs would be incurred regardless. Mr. Delaney asked for clarification that it might be possible to use the current cELB units. Dr. Primrose replied that it might be possible, but to also consider that the time and resources could be spent developing a new unit. Mr. Delaney noted that, if current units would have to be recalled, there would be a period of time when data would not be collected on vessels. Mr. Putnam inquired if attaching a component to the current cELB units for transmittal via 4G or 5G cellular network was feasible. Dr. Primrose stated that the components are soldered onto the units, so there is no easy method for converting the existing system to a 4G or 5G network.

Ms. Bosarge commented that data used to go to the NMFS Stennis server and that, in December 2020, one of the servers was moved to Asheville and the other server was moved to Pascagoula. She inquired what would be involved in using those servers again for shrimp data collection. Dr. Primrose responded that there would be security and compliance measures that would need to be met for use of those servers for that purpose.

Ms. Bosarge noted that it was the first time SD cards were being mailed from shrimpers and that participation in the data collection program is a requirement of federal shrimp permit renewal, so she believes the 55% return rate would increase. Mr. Perret also noted the hurricane damage to the northern Gulf in 2021 could delay return of the SD cards.

GSMFC process for data retrieval, security, and storage

Ms. Bellais reviewed the current process, which involves the Southeast Fisheries Science Center (SEFSC) Galveston lab sending a batch of SD cards to the GSMFC via FedEx as well as emailing an Excel spreadsheet with the contents of the batch.

For data processing, the GSMFC has a computer dedicated to this process, which is disconnected from the GSMFC network while each SD card is processed (including a virus scan). The computer is then reconnected to the network, and invalid characters are removed from local data files before the data files are imported into an Oracle table in the GSMFC data warehouse.

For data transfer to the SEFSC, the SD cards are returned to the Galveston lab, and the Galveston lab is notified that the batch is ready for retrieval via GSMFC via Oracle connection.

The GSMFC is capable of handling secure electronic transfer of data using multiple transfer methods. There are requirements that would need to be met though. Data would need to be sent to a cloud service since the GSMFC IT dept is not a 24/7 operation. Ms. Bellais emphasized that the GSMFC is not the end repository for this data. In addition, the cELB units must clean any invalid characters before transmission, and data would need to be delivered in GSMFC specified format and method. Additional costs would be incurred if, for instance, the data requires cleaning or pre-processing.

Ms. Bosarge inquired as to the GSMFC's transition timeline to a cloud service. Mr. Ferrer estimated it would be completed by the end of 2021. Ms. Bellais stated that non-confidential data would be transferred to the cloud service first, followed by confidential data. Mr. Perret inquired as to an estimate of what the additional costs might be. Mr. Ferrer stated the cloud service is based on usage; any pre-processing of data would also require an additional server. Employee time would be a factor initially, to set up the process. Ms. Bosarge asked if the old server would be retained initially. Mr. Ferrer stated that the old server would be kept for at least another year, as non-confidential data would be transferred first, with confidential data transferred later.

Mr. Delaney stated that industry is not comfortable with the Office of Law Enforcement's (OLE) access to data for enforcement purposes. He inquired if OLE's access to the Office of the Chief Information Officer's (OCIO) server is different than from OLE's access to any of the other aforementioned servers. Ms. Bellais replied that the GSMFC directly handles who has access to their servers, so unless OLE comes in through one of the SEFSC's link, they would not have direct access to the information on the GSMFC's servers. Ms. Bellais stressed again that the GSMFC is not the end repository for the shrimp data and that, once NMFS has retrieved the data, it is removed from the GSMFC server. Ms. Spalding (OLE staff) stated that it was easier for OLE to access data on the OCIO's server and that there was a difference in OLE's access across different servers.

Focus group discussion for Objectives 2-4

Ms. Bosarge stated that, in relation to Objective 2 ("Consider utilizing the current hardware to the extent practicable on Gulf of Mexico federally permitted shrimp vessels, and identify potential headwinds"), she has inquired if the current cELB units could still transmit via cellular

network, in order to have data collection be consistent with the previous method. Dr. Nance commented that it would be better to move to an entirely new unit for data transmission. In regard to Objective 2, Mr. Perret stated that he thought someone made the comments that the current hardware is not a viable option. Mr. Putnam clarified that he said some device would be needed to modify the current hardware. Mr. Delaney suggested use of an ethernet cord to a mobile hotspot and exploring that as a possibility.

Mr. Delaney noted that shrimp data would wind up in the SEFSC server eventually, so OLE would be able to access that. He asked if the Council could define in the framework action how the data would be used. Ms. Spalding responded that the Council could not limit OLE's access because it is written into the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Mr. Delaney clarified that he was asking if OLE's use of the data for enforcement could be limited, not OLE's access. Ms. Spalding replied that it did not appear to be able to be limited, but that General Counsel should verify that. Ms. Levy (NOAA General Counsel) stated that it did not appear to be possible to limit OLE's use of the data. Mr. Putnam noted that the data collection program was not intended for enforcement purposes and that not all vessels had been selected; therefore, it would not be fair that all vessels are not being monitored for enforcement purposes. Ms. Levy noted that, even under the prior program, OLE had access to this type. Mr. Hogan (NOAA General Counsel) noted that use of VMS data by OLE is no different than its use of any other positional data. Dr. Walter (SEFSC staff) commented that OLE only enforces management actions in place.

Mr. Antonaras (OLE staff) responded that OLE does have access to the current cELB data. With VMS data, they have enforcement technicians that monitor the data during normal workhours, for the purposes of enforcing closed areas.

Dr. Gloeckner (SEFSC staff) reminded the group that reimbursement is available for VMS units.

Dr. Masi (Southeast Regional Office staff) noted that the shrimp assessments have shown historically that the industry has not overfished or been overfishing the stocks. Still, with red snapper bycatch reduction and the recent shrimp BiOp, it is important that the transition to a new data collection program occur soon. In terms of Objective 2, utilizing the current hardware is not a viable option, given the age of the units themselves as well as the age of the technology. Objectives 3 ("Consider utilization of the NESDIS server (or equivalent) for housing of the data before transferring the data to the Science Center") and 4 ("Consider utilization of the GSMFC server for housing of the data before transferring the data to the Science Center") appear to only consider use of the current cELB units. There is not competition for development of new cELB units, whereas VMS units are in a competitive market. She also noted that there is a shrimp effort estimation working group that could consider development of a new shrimp algorithm, once the new data collection program is in place.

Ms. Bosarge stated that VMS units have not been tested in the federal Gulf shrimp industry.

Mr. Delaney commented that he did not interpret Objective 2, which references hardware, to apply to the inclusion of the P-Sea WindPlot software. He noted that there is industry buy-in for the use of P-Sea WindPlot software.

Dr. Walter stated that he had understood P-Sea WindPlot software to be within Objective 5 ("Consider utilization of replacement hardware on federally permitted shrimp vessels with minimal technical requirements and automatic cellular transmission").

Mr. Perret asked why the SD card return rate was only about 55% and inquired if the return of the SD card was needed for permit renewal. Dr. Lowther (SEFSC staff) stated that the number may be up to about 60% based on the latest SD cards that have been returned. He commented that enforcement of permit renewal based on data has been delayed, due to the expiration of the 3G network.

Mr. Putnam asked if prioritization of VMS units on shrimp vessels could be made, rather than considering the possibility of continued utilization of the current cELB units. Dr. Walter replied that extensive testing has occurred on various vessels and that it would work for shrimp vessels in the Gulf. He added that VMS units work for the South Atlantic rock shrimp industry. Dr. Walter stated it should be possible to test them onboard Gulf shrimp vessels, if there is interest. Dr. Masi noted that there is not a cellular VMS that pings every 10 minutes for testing on Gulf shrimp vessels. Ms. Bosarge added that cellular VMS units were only very recently approved. Ms. Spalding stated the cellular VMS units could be modified for 10-minute pings for testing.

Mr. Delaney inquired if the Council's Request for Proposals (RFP) for shrimp data collection could be modified for testing of cellular VMS units. Dr. Froeschke responded that the RFP is being revised to include more information on data type and size for the use of P-Sea WindPlot software before re-advertising for RFPs. If the Council wanted to modify the RFP to include cellular VMS units, it would need to go back to the Council for consideration and modification of the current motion.

Mr. Putnam noted that industry does not seem interested in the VMS route, so NMFS should test the units on Gulf shrimp vessels to get industry on-board.

Mr. Perret stated that he is not convinced that a 10-minute ping is necessary. Dr. Nance responded that the ping rate has to be set so to calculate a reasonable estimate for effort. He said that accurate estimates were able to be obtained with 10 minutes, although he could not speak to whether 15 or 20 minutes would or would not be sufficient. However, the longer the time between pings, the less certainty there is on what a vessel did during that time period. Mr. Putnam stated that LGL did quite a bit of testing on time intervals for pings. Increasing the interval to more frequent pings did not increase the estimate reliability by very much.

Mr. Strelcheck commented that there had been industry opposition to VMS, and so there had been hesitancy to test VMS units on Gulf shrimp vessels. He stated that it would be helpful to identify measures of success for testing the cellular VMS units.

Comparison table

Ms. Bosarge reviewed elements for VMS type-approval in contrast with draft technical specifications for reinstituting the historical cELB program for the federal Gulf shrimp fishery.

Some of the items that would change under the draft technical specifications are as follows: at-sea-testing would be a requirement, rather than be optional; one-way communication from the vessel to NMFS would be needed, rather than two-way communication; messaging and electronic forms would not be applicable to the historical cELB program. She noted that the section on litigation support from VMS type-approval would not be applicable in the draft technical specifications, since cELB is a scientific data collection program.

Mr. Delaney inquired if Ms. Bosarge had received any specific response to the comparison table, after her presentation to the Gulf Council at its August 2021 meeting. Dr. Walter commented that the comparison table could be boiled down to a few key points: where the data is transmitted to; the need for two-way communications; possibility for reimbursement and related costs. Ms. Spalding noted that this is a discussion of a national regulation and wanted to discuss this further with regulatory lawyers. Mr. Delaney shared the language in the recently released Senate Appropriations Committee FY 22 CJS Explanatory Statement:

"*Within the funding provided in Fisheries Data Collections, Surveys, and Assessments, the Committee provides $1,000,000 for NMFS, in consultation with the Gulf of Mexico Fishery Management Council and shrimp industry stakeholders, to continue the development and implementation of a new approved ELB that archives vessel position and automatically transmits scientific shrimp fishing effort data via cellular service to NMFS.*"

Dr. Walter pointed out that the language was specific to ELB, with automatic transmission via cellular service.

Focus group discussion of Objective 5

Mr. Delaney would like to have the focus group recommend the comparison table and draft technical specifications be evaluated by NMFS. He then proposed the following recommendation:

> Recommendation to Council: To request that NMFS fully evaluate and consider adopting to the maximum extent possible the draft type-approval specifications for reinstituting the cELB program for the Gulf shrimp fishery in recognition of the legitimate distinctions between a scientific data collection oriented program and an enforcement oriented program (see Appendix E in the draft Framework Action).

Dr. Walter suggested noting specific items that should be addressed in the recommendation, such as two-way communication and to whom the data is transmitted.

Mr. Perret suggested that the focus group wait to consider Mr. Delaney's recommendation until after Dr. Walter's presentation.

Presentation: case study of South Atlantic rock shrimp VMS data inputted into the Gulf shrimp effort algorithm for illustration of compatibility

Dr. Walter stated that the basic VMS data that is collected is very similar to the cELB data. However, the downloaded VMS data was tested at 1-hour resolution, whereas the federal Gulf shrimp fishery has 10-minute resolution with cELB units. He stated that the inferred speed can be used to identify trawling versus steaming. He also noted that it would be possible to link trip ticket landings, in the same manner as the cELB program.

Ms. Bosarge inquired if the shrimp algorithm would have to be rewritten if the ping rate is hourly instead of the current 10 minutes. Dr. Primrose responded that a piece of code addresses time and distance would need to be revisited, in order to entertain a variable ping rate. Dr. Nance suggested that, if cellular VMS units were tested onboard federal Gulf shrimp vessels, then that data with 10-minute pings could be run through the current shrimp algorithm. Ms. Bosarge commented that she also wanted to make sure that the data would not need to be reformatted from cellular VMS units to be run through the current shrimp algorithm, or if the data would have to be reformatted, she would like to know how much post-processing would be required.

Focus group discussion of Objective 6

Dr. Walter discussed five potential options for consideration by the focus group.

1. **mail in 3G ELB unit chips--> Gulf States-->SEFSC (alt 1, no action)**

- *pros*: cheap; uses existing 3G system

- *cons:* slow, declining capacity; not recruiting new vessels; not meeting Shrimp Biop Reasonable and Prudent measure #1 of equal or greater effort monitoring

2. wire a modem to existing 3G ELB units--> Gulf States-->SEFSC

- *pros:* uses existing 3G system, avoids the concerns regarding data going to OLE directly (but OLE can get it anyway)

- *cons:* $100-300 for modem; modems can be 'flimsy' and not marine grade, probably would not be very robust, declining capacity, not recruiting new vessels, not meeting Shrimp Biop Reasonable and Prudent measure #1 of equal or greater effort monitoring.

3. ***To be developed,* software/hardware combination (e.g. P-Sea WindPlot + modem/comms)---> 3rd party--->SEFSC (variation on Alternative 3 from Framework action)**

- *pros:* needs to be developed; VMS-reimbursement possible *if* it can meet VMS specs and go through OCIO, avoids the concerns regarding data going to OLE directly (but OLE can get it anyway)

- *cons:* still needs to be developed (when?); unknown if industry can support/service hardware/software combination; If no VMS type approval, industry pays for hardware; industry pays monthly cell bill ($20-$30).

4. **VMS (cellular)--> 3rd party (GSMFC) --> SEFSC (variation on Alternative 2 from Framework action)**

-*pros:* uses type-approved hardware; avoids the concerns regarding data going to OLE directly (but OLE can get it anyway)

-*cons*: requires 3rd party (Gulf States/NESDIS); may have additional costs; no VMS-reimbursement possible; Industry pays monthly cell bill ($20-$30).

5. VMS (cellular or satellite)--> OCIO (OLE) --> SEFSC (variation on Alternative 2 from Framework action)

-*pros:* uses type-approved hardware, cost-reimbursement on units; uses existing software/hardware/processing infrastructure; consistent with Agency VMS specs; immediately actionable, safety (e.g. during a hurricane, FV Pete's Dream activated the distress button on its Satellite VMS unit and that was the only way the USCG located the vessel, dropped a pump and vessel was able to dewater and steam back to port)

-*cons:* industry concerns with several VMS specs (2-way comms) and OLE involvement; may not want to require only cell as existing cell 'G' will become obsolete as the next 'G' is pushed by cell providers; industry pays monthly bill (~$20/sat ($20-$150 bill).

Mr. Delaney asked if VMS data would need to be transmitted to OLE in order to qualify for VMS reimbursement. Ms. Spalding confirmed this.

With regard to Option 3, Dr. Lowther said that, for the 2020 responses to the annual landings and gear survey, of 1,144 vessels, 263 responded that they had P-Sea WindPlot. He noted that non-responses to that survey question needed to be further examined and considered.

Ms. Bosarge commented that it is too early to assume that Alternative 1 is not meeting the Shrimp BiOp's Reasonable and Prudent measure for equal or greater effort monitoring.

Public Comment

No public comments were made.

Summary of focus group advice and proposed next steps

The focus group revisited Mr. Delaney's first recommendation. Ms. Spaulding encouraged revising the phrase 'type-approval' to 'device' in the recommendation. Ms. Bosarge asked that the word 'approval' be used in place of 'type-approval'.

> **The Shrimp Data Collection Focus Group recommends that the Council request that NMFS fully evaluate and consider adopting, to the maximum extent possible, the draft approval specifications for reinstituting the historical cELB program for the Gulf shrimp fishery in recognition of the legitimate distinctions between a scientific data collection oriented program and an enforcement oriented program (see Appendices D and E in the draft Framework Action).**
>
> The recommendation passed 6-2.

Dr. Walter noted that this recommendation is asking NMFS to apply different protocols for this one fishery and that it seems to goes beyond what is necessary. Mr. Strelcheck requested that it be noted that the dissenting votes were from NMFS personnel. Dr. Lowther stated that it could be misleading to refer to enforcement oriented programs.

Dr. Walter inquired, if testing of cellular VMS provides the same estimates as the cELB units, if industry would accept the results. Ms. Bosarge responded that the industry will still be opposed to VMS units, because the data will go to OLE.

Mr. Delaney asked, if Option 4 from Dr. Walter's list was incorporated into the draft framework action, if that option would be consistent with the Magnuson-Stevens Act. Mr. Strelcheck responded that he would need to confer with General Counsel.

Mr. Delaney then made a second recommendation, as follows.

> **The Shrimp Data Collection Focus Group recommends that the Council request that NMFS arrange for the testing, as soon as possible, of a small sample of approved cellular VMS units programmed to ping every 10 minutes on federally permitted commercial shrimp vessels operating in different regions of the Gulf of Mexico to determine if the data generated is compatible with the current cELB algorithm. The testing protocol should be designed by NMFS, in consultation and cooperation with the Shrimp Data Collection Focus Group, VMS vendors, and the shrimp industry to build industry support and buy-in.**
>
> The recommendation passed unanimously.

Ms. Spalding commented that NMFS has already tested the cellular VMS units. Mr. Delaney replied that this recommendation would be for NMFS to arrange for the testing, but not necessarily conduct the testing. Mr. Strelcheck noted that Dr. Walter's comment that members of this focus group could be considered as non-NMFS experts should be considered further.

Ms. Bosarge inquired if the focus group wanted to recommend that the Council encourage further development of P-Sea WindPlot to meet data collection needs of the shrimp industry. The focus group did not further explore this idea.

The AP meeting adjourned at 6:25 pm eastern time.