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Modification of the Vessel Position Data Collection Program for the Gulf of Mexico Shrimp Fishery

Draft Framework Action
to the Fishery Management Plan for the
Shrimp Fishery in the Gulf of Mexico, U.S. Waters

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ENVIRONMENTAL ASSESSMENT COVER SHEET

Name of Action

Draft Framework Action to the Fishery Management Plan for the Shrimp Fishery in the Gulf of Mexico: Modifications to the Gulf of Mexico Shrimp Fishery's Position Data Collection Program including Environmental Assessment, Regulatory Impact Review, and Regulatory Flexibility Act Analysis

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( ) Administrative
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ABBREVIATIONS USED IN THIS DOCUMENT

BRD ……..bycatch reduction device
cELB …….…….cellular electronic logbook
EEZ……..Exclusive Economic Zone
ELB …….electronic logbook
EIS …….environmental impact statement
EMTU……...enhanced mobile transceiver unit
EMTU-C……..enhanced mobile transceiver unit – cellular)
FMP …….Fishery Management Plan
GMFMC ..... Gulf of Mexico Fishery Management Council
NMFS .....National Marine Fisheries Service
NOAA ..... National Oceanic and Atmospheric Administration
TED ……...…….turtle excluder device
VMS …….vessel monitoring system

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CHAPTER 1. INTRODUCTION

1.1 Background

The Gulf of Mexico Fishery Management Council (Council) is developing a Draft Framework Action to Modify the Fishery Management Plan for Shrimp Fishery of the Gulf of Mexico (Shrimp FMP) to address the expiration of the 3G cellular network in December 2020, which was used for transmission of data from cellular electronic logbook units (cELBs).[1] Even though the data can no longer be transmitted via 3G cellular networks, the hardware devices onboard vessels can still collect and store effort data, as long as they are still functioning. Additionally, the National Marine Fisheries Service (NMFS) server that securely housed the shrimp industry's position data is no longer operational as of December 7, 2020. Shrimp Amendment 13 (2005) established use of electronic logbooks (ELBs) to determine the amount and location of effort that is occurring in the shrimp fishery of the exclusive economic zone (EEZ). The vessel position information transmitted from cELBs are combined with data from submitted dealer reports to estimate effort. The Shrimp ELB Framework Action (2013) later established a cost-sharing system for the cELB program, under which the National Marine Fisheries Service (NMFS) provided the hardware, software, data storage, effort estimation analysis, and archival activities while the permit holders covered the costs of installing and maintaining the units, as well as the cellular service required for data transmission. The current regulations require participation in the cELB program, if selected by the Science and Research Director (SRD) and were implemented with Amendment 13:

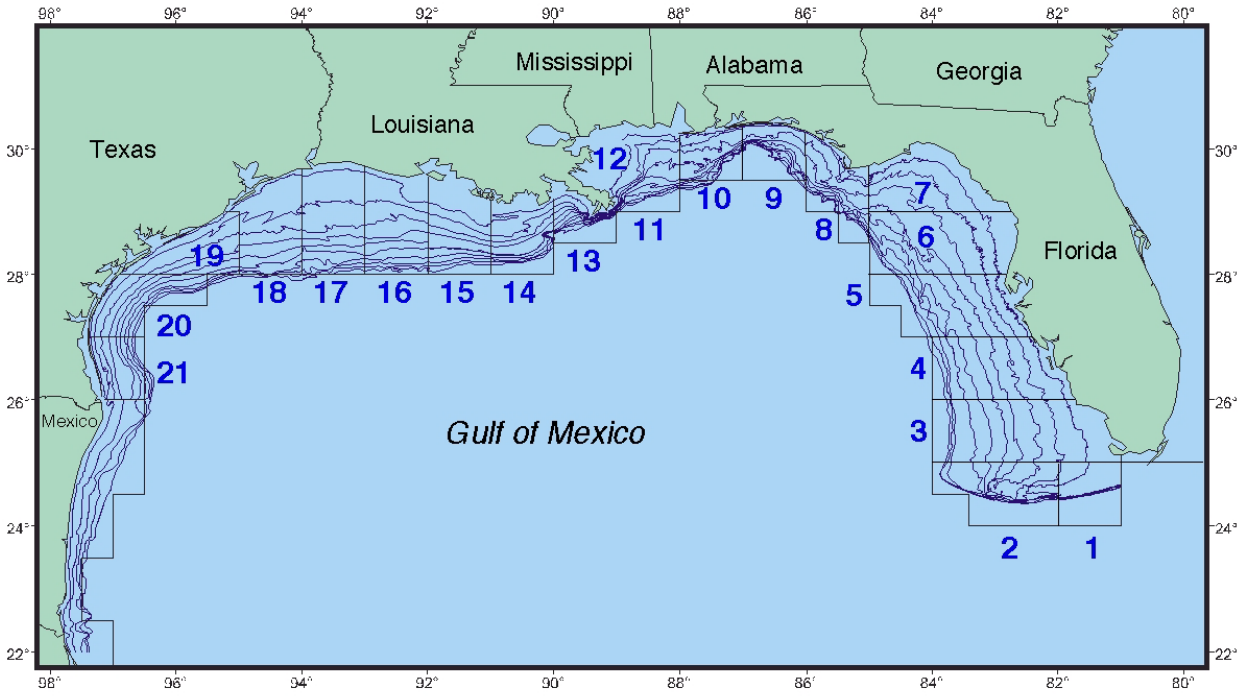
§ 622.51 Recordkeeping and reporting.
(a) Commercial vessel owners and operators--(1) General reporting requirement. The owner or operator of a vessel that fishes for shrimp in the Gulf EEZ or in adjoining state waters, or that lands shrimp in an adjoining state, must provide information for any fishing trip, as requested by the SRD, including, but not limited to, vessel identification, gear, effort, amount of shrimp caught by species, shrimp condition (heads on/heads off), fishing areas and depths, and person to whom sold.
(2) Electronic logbook reporting. The owner or operator of a vessel for which a Federal commercial vessel permit for Gulf shrimp has been issued and who is selected by the SRD must participate in the NMFS-sponsored electronic logbook reporting program as directed by the SRD. In addition, such owner or operator must provide information regarding the size and number of shrimp trawls deployed and the type of bycatch reduction device (BRD) and turtle excluder device used, as directed by the SRD. Compliance with the reporting requirements of this paragraph (a)(2) is required for permit renewal.
(3) Vessel and Gear Characterization Form. All owners or operators of vessels applying for or renewing a commercial vessel moratorium permit for Gulf shrimp must complete an annual Gulf Shrimp Vessel and Gear Characterization Form. The form will be provided by NMFS at the time of permit application and renewal. Compliance with this reporting requirement is required for permit issuance and renewal.

[1] Appendix A provides a diagram of how cELBs work and the role of cellular data transmission.

Vessels selected to participate must carry position recording devices where are simple time-stamped global positioning system (GPS) units that record and store data regarding a vessel's location at 10-minute time intervals (LGL Ecological Research Associates, Inc. 2009). From these time-stamped locations, vessel speed between points can be estimated and then evaluated with mathematical algorithms to determine if a vessel is stopped, towing, or transiting. Fishing effort has historically been measured in terms of "fishing days," where a fishing day equals 24 hours of towing time.

Trip tickets provide the NMFS with shrimp catch data for each trip, which is then matched to the GPS track log data and used to estimate catch-per-unit-effort for the trip. Effort is then estimated by statistical area and depth zone using the Pooling Method (Nance 2004). Shrimp fishery statistical zones in the Gulf of Mexico are shown in Figure 1.1. Historically, GPS track logs stored on the cellular electronic logbooks (cELBs) were transmitted via a cellular signal to the NMFS as soon as the vessel returned to port, whereas the trip ticket landings data for the year is not available to the NMFS until the following year. Through this framework action, the Council is exploring alternatives to the cELB program in order to continue the estimation of effort in the shrimp fishery, which will assist in conducting annual shrimp stock assessments, estimating bycatch of other species for use in other species' assessments, and monitoring the sea turtle and juvenile red snapper bycatch thresholds.

Figure 1.1. Statistical subareas and depth zones (five fathom increments) for the U.S. Gulf of Mexico



1.2 Purpose and Need

The purpose of this action is to transition from the expired cellular electronic logbook program to a system that would maintain the Council's and NMFS's ability to collect vessel position data in order to estimate and monitor fishing effort in the Gulf of Mexico shrimp fishery.

The need is to base conservation and management measures on the best scientific information available and to minimize bycatch to the extent practicable, as required by the Magnuson-Stevens Fishery Conservation and Management Act, and interactions with protected species as required by the Endangered Species Act.

1.3 History of Management

The following history of management illustrates the critical role that effort data has played in management of the shrimp fishery. The Shrimp FMP, supported by an environmental impact statement (EIS), was implemented on May 15, 1981. The FMP defined the shrimp fishery management unit to include brown shrimp, white shrimp, pink shrimp, royal red shrimp, seabobs (*Xiphopenaeus kroyeri*), and brown rock shrimp (*Sicyonia brevirostris*). Seabobs and rock shrimp have since been removed from the FMP. The actions implemented through the FMP and its amendments have addressed the following objectives:

1. Optimize the yield from shrimp recruited to the fishery.
2. Encourage habitat protection measures to prevent undue loss of shrimp habitat.
3. Coordinate the development of shrimp management measures by the Council with the shrimp management programs of the Gulf States, when feasible.
4. Promote consistency with the Endangered Species Act and the Marine Mammal Protection Act.
5. Minimize the incidental capture of finfish by shrimpers, when appropriate.
6. Minimize conflict between shrimp and stone crab fishermen.
7. Minimize adverse effects of obstructions to shrimp trawling.
8. Provide for a statistical reporting system.

The purpose of the plan was to enhance yield in volume and value by deferring harvest of small shrimp to provide for growth. The main actions included: 1) establishing a cooperative Tortugas Shrimp Sanctuary with Florida to close a shrimp trawling area where small pink shrimp comprise the majority of the population most of the time; 2) a cooperative 45-day seasonal closure with Texas to protect small brown shrimp emigrating from bay nursery areas; and 3) a seasonal closure of an area east of the Dry Tortugas to avoid gear conflicts with stone crab fishermen.

Amendment 1/Environmental Assessment (EA)(1981) provided the Regional Administrator (RA) of SERO with the authority (after conferring with the Council) to adjust by regulatory amendment the size of the Tortugas Sanctuary or the extent of the Texas closure, or to eliminate either closure for one year.

Amendment 2/EA (1981) implemented mandatory reporting of statistical data by shrimp vessel owners and operators, dealers, and processors.

Amendment 3/EA (1982) resolved a shrimp-stone crab gear conflict on the west-central coast of Florida.

A **NOAA Fisheries Rule** (1987) required all shrimp trawlers 25 ft and longer in offshore waters to use qualified turtle excluder devices (TED) and all shrimp trawlers smaller than 25 feet to restrict tow times to 90 minutes or less. In inshore waters, at specified times, all shrimp trawlers were required to restrict tow times to 90 minutes or less. In both inshore and offshore waters, shrimp trawlers using TEDs are exempt from the tow time restrictions. The rule specified criteria and procedures for qualifying additional TEDs; specified vessel sizes, areas and seasons for which qualified TEDs or 90 minute tow times must be used; established reporting requirements; continued measures for resuscitation and release of captured sea turtles; and continued designated critical habitat. Initially, only four TED designs were approved: the NOAA Fisheries' TED, the Cameron TED, the Matagorda TED, and the Georgia TED. The Morrison soft-TED was authorized later in the year.

Amendment 4/EA (1988) identified problems that developed in the fishery and revised the objectives of the FMP accordingly. The annual review process for the Tortugas Sanctuary was simplified, and the Council and RA review for the Texas closure was extended to February 1. A provision that white shrimp taken in the exclusive economic zone (EEZ) be landed in accordance with a state's size/possession regulations to provide consistency and facilitate enforcement with Louisiana was to have been implemented at such time when Louisiana provided for an incidental catch of undersized white shrimp in the fishery for seabobs. This provision was disapproved by NMFS with the recommendation that it be resubmitted after Louisiana provided for that bycatch. This resubmission was made in February of 1990 and applied to white shrimp taken in the EEZ and landed in Louisiana. It was approved and implemented in May of 1990.

Amendment 5/EA (1991) defined overfishing for Gulf brown, pink, and royal red shrimp and provided measures to restore overfished stocks if overfishing should occur. Action on the definition of overfishing for white shrimp was deferred, and seabobs and rock shrimp were removed from the management unit. The duration of the seasonal closure to shrimping off Texas was changed from June 1 through July 15 to May 15 through July 15 to conform to changes in state regulations.

Amendment 6/EA (1992) eliminated the annual reports and reviews of the Tortugas Shrimp Sanctuary in favor of monitoring and an annual stock assessment. Three seasonally opened areas within the sanctuary continue to open seasonally, without need for annual action. A proposed definition of overfishing of white shrimp was rejected by NMFS because it was not based on the best available data.

Amendment 7/EA (1994) defined overfishing for white shrimp and provided for future updating of overfishing indices for brown, white, and pink shrimp as new data became available. A total allowable level of foreign fishing for royal red shrimp was eliminated; however, a redefinition of overfishing for royal red shrimp was disapproved.

Amendment 8/EA (1995), implemented in early 1996, addressed management of royal red shrimp. It established a procedure that would allow total allowable catch for royal red shrimp to be set up to 30% above maximum sustainable yield (MSY) for no more than two consecutive years so that a better estimate of MSY could be determined. This action was subsequently negated by the 1996 Sustainable Fisheries Act amendment to the Magnuson-Stevens Act that defined overfishing as a fishing level that jeopardizes the capacity of a stock to maintain MSY and does not allow optimum yield to exceed MSY.

Amendment 9/supplemental environmental impact statement (SEIS) (1997) required the use of a NMFS certified bycatch reduction device (BRD) in shrimp trawls used in the EEZ from Cape San Blas, Florida to the Texas/Mexico border, and provided for the certification of BRDs and specifications for the placement and construction. The purpose of this action was to reduce the bycatch mortality of juvenile red snapper by 44% from the average mortality for the years 1984 through 1989. This amendment exempted shrimp trawls fishing for royal red shrimp seaward of the 100-fathom contour, as well as groundfish and butterfish trawls, from the BRD requirement. It also excluded small try nets and no more than two ridged frame roller trawls of limited size. Amendment 9 also provided mechanisms to change the bycatch reduction criterion and to certify additional BRDs.

Amendment 10/EA (2002) required BRDs in shrimp trawls used in the Gulf east of Cape San Blas, Florida. Certified BRDs for this area were required to demonstrate a 30% reduction by weight of finfish.

Amendment 11/EA (2001) required owners and operators of all vessels harvesting shrimp from the EEZ of the Gulf to obtain a federal commercial vessel permit. This amendment also prohibited the use of traps to harvest royal red shrimp from the Gulf and prohibited the transfer of royal red shrimp at sea.

Amendment 12/EA (2001) was included as part of the Generic Essential Fish Habitat (EFH) Amendment that established EFH for shrimp in the Gulf.

A **NOAA Fisheries rule** (2003) required the use of larger TED escape openings in otter trawl nets used to harvest shrimp to improve the exclusion leatherback turtles and adult loggerheads and green turtles. Also, the double-cover escape opening was introduced, which consists of two mesh flaps covering the escape hole and provides enhanced turtle exclusion as well as improved shrimp retention.

Amendment 13/EA (2005) established an endorsement to the federal shrimp vessel permit for vessels harvesting royal red shrimp; defined the overfishing and overfished thresholds for royal red shrimp; defined MSY and OY for the penaeid shrimp stocks in the Gulf; established bycatch reporting methodologies and improved collection of shrimping effort data in the EEZ; required completion of a Gulf Shrimp Vessel and Gear Characterization Form by vessels with federal shrimp permits; established a moratorium on the issuance of federal commercial shrimp vessel permits; and required reporting and certification of annual landings during the moratorium.

August 2006 Regulatory Amendment (2006) changed the BRD certification criterion for penaeid shrimp trawling in the EEZ from being based on the expected reduction in the mortality of red snapper to the expected reduction in finfish catch. The change in the BRD certification criterion addressed shrimp trawl bycatch more comprehensively and increased flexibility, promoted innovation, and allowed for a wider variety of BRDs which allowed fishermen to choose the most effective BRD for fishing conditions and therefore reduce overall finfish bycatch. This Amendment also certified the Modified Jones-Davis BRD for use in the Gulf and South Atlantic shrimp fisheries, provisionally certified the extended funnel BRD for use in the Gulf shrimp fishery, and provisionally certified the composite panel BRD to be used in the Gulf and South Atlantic shrimp fisheries. The Amendment also consolidated and made modifications to the BRD Testing Manuals for the Gulf of Mexico and the South Atlantic regions.

Amendment 14/EIS (2007) was a joint amendment with Reef Fish Amendment 27. It established a target red snapper bycatch mortality goal for the shrimp fishery in the western Gulf of 74% relative to the benchmark years of 2001-2003, reducing that target goal to 67% beginning in 2011 and eventually reducing the target to 60% by 2032. The Amendment also defined seasonal closure restrictions that can be used to manage shrimp fishing effort in relation to the target red snapper bycatch mortality reduction goal. If necessary, a seasonal closure of the shrimp fishery in areas (add areas) will occur at the same time as the annual closure of federal waters, which occurs in conjunction with the Texas closure. The need for a closure will be determined by the RA based on an annual assessment by the Southeast Fisheries Science Center (SEFSC). The assessment will use shrimp effort data for the most recent 12-month period available and will include a recommendation regarding the geographical scope and duration of the closure. The SEFSC's assessment will be provided to the RA on or about March 1 of each year. It also established a framework procedure to streamline the management of shrimp fishing effort in the western Gulf.

A **Framework Action** (2008) made revisions to BRD specifications and testing protocols, including lowering the needed bycatch reduction for BRDs in the western Gulf from 44% to 30% to be consistent with the eastern Gulf and the South Atlantic.

A **Framework Action** (2009) decertified the expanded mesh and Gulf Fisheye BRDs. This action also modified the allowable configuration for the Fisheye BRD, such that it could not be placed farther forward than 9 ft from the tie-off rings.

The Generic Annual Catch Limit (ACL)/Accountability Measures (AMs) Amendment/EIS (2011) set an ACL and AM for royal red shrimp. Penaeid shrimp were exempt from the ACL/AM requirements because of their annual life cycle.

A **Framework Action** (2012) certified the two BRDs that were provisionally certified in 2010. It also lowered the effort reduction threshold established in Amendment 14 from 72% to 67%.

The Shrimp Electronic Logbook (ELB) Framework Action (2013) established a cost-sharing system for the ELB program and described new equipment and procedures for the program.

Amendment 15/EA (2015) redefined stock status criteria for the three penaeid species of shrimp including MSY and overfished/overfishing thresholds. The general framework procedure was also be updated.

Amendment 16/SEIS (2015) eliminated duplicative AMs and the quota for royal red shrimp. The ACL was set equal to the acceptable biological catch and a post-season AM was established.

Amendment 17A/EA (2017) extended the Gulf commercial shrimp permit moratorium for 10 more years through October 26, 2026.

Amendment 17B/EA (2017) defined the aggregate MSY of 112,531,374 pounds of tails for all shrimp species and an aggregate OY of 85,761,596 pounds of tails for all shrimp species. This amendment allows for the creation of a reserve permit pool when certain conditions are met, and mandates that the Council convene a review panel to review the details of a permit pool if the number of permits reaches 1,175. This amendment also allows vessels possessing shrimp to transit through federal waters without a federal permit if their trawl doors and nets are out of the water and bag straps are removed.

Amendment 18/Categorical Exclusion (CE) (2019) reduced the target reduction goal for juvenile red snapper mortality in the Federal Gulf penaeid shrimp trawl fishery from 67 percent to 60 percent and modified the FMP framework procedures to allow changes to the target reduction goal for juvenile red snapper mortality through the abbreviated framework documentation process.

A **NOAA Fisheries Rule (EIS)** (2019, effective 2021) required skimmer trawl vessels 40 feet and greater in length that are rigged for harvesting shrimp to install and use TEDs designed to exclude small turtles in their nets. The space between the deflector bars of the new TEDs must not exceed 3 inches and escape openings must be oriented at the top of the net. There are webbing restrictions on the escape opening flap depending on the type of TED grid and escape opening configuration.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 - Modify the Method Used to Collect Vessel Position Data for the Gulf of Mexico Shrimp Fishery

Note: The types of data and amount/timing of data collection would not vary between alternatives. Consistent with current requirements, the permitted vessels selected to participate must also provide the National Marine Fisheries Service (NMFS): the size and number of shrimp trawls deployed for each set, and the type of bycatch reduction device (BRD) and turtle excluder device (TED) used in the nets. Compliance with these requirements and the requirement to submit vessel position data is required for permit renewal.

Alternative 1: No Action - Maintain the current method to collect vessel position data through the cellular electronic logbook units supplied by the NMFS. Prior to December 7, 2020, the owners or operators of selected vessels were responsible for the cost of cellular service necessary to transmit the data. Currently, because cellular transmission is no longer possible, the NMFS will collect the memory cards from the units via mail.

Alternative 2. Modify the method to collect vessel position data. If selected, the owner or operator of a shrimp vessel with a valid or renewable moratorium permit would be required to install an approved vessel monitoring system (VMS) that, at a minimum, archives vessel position and automatically transmits that data via cellular or satellite to the NMFS.

Discussion:

Alternative 1 (No Action) would maintain the current method for collecting vessel position data. Cellular electronic logbook (cELB) units ceased transmitting information to NMFS on December 31, 2020, and the National Environmental Satellite Data and Information Service shut down the server receiving the data from cELB units on December 7, 2020. Because cellular transmission is no longer possible, NMFS will collect the memory cards from the cELB units via mail until a new process is developed. However, NMFS will be unable to determine if a cELB unit has stopped collecting data until the memory cards have been sent and the data has been downloaded and analyzed. Cost-sharing of the ELB program was previously established (GMFMC 2013) with vessel owners paying installation, maintenance, and transmission costs; discussion of cost-sharing for a VMS is discussed under **Alternative 2**.

Alternative 2 would transition the data collection by requiring the owner or operator of a shrimp vessel with a valid or renewable moratorium permit to install an approved VMS.[2] A VMS may be approved using satellite transmission as well as cellular transmission. Currently, VMS

[2] Information on Vessel Monitoring System Type-Approval can be found at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=40795e9b7e80ab071d63d0f076d60d11&mc=true&r=SUBPART&n=sp50.12.600.q.

reimbursement is available nationally for the cost of the units,[3] while installation, maintenance, and communication costs are covered by vessel owners.

As noted, the types of data and amount/timing of data collection would not vary between alternatives. Vessel position is recorded every 10 minutes (LGL Ecological Research Associates, Inc. 2009).

[3] Information on reimbursement of VMS units can be found at https://www.psmfc.org/program/vessel-monitoring-system-reimbursement-program-vms.

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GMFMC = Gulf of Mexico Fishery Management Council; NOAA=National Oceanic and Atmospheric Administration, SERO = Southeast Regional Office, SF = Sustainable Fisheries Division, PR = Protected Resources Division, HC = Habitat Conservation Division, SEFSC=Southeast Fisheries Science Center, GC = General Counsel

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APPENDIX A. DIAGRAM OF HOW A CELLULAR ELB WORKS

The following diagram shows five steps, beginning with the GPS satellite, noting that the cELB records the vessel's location every 10 minutes using GPS technology, and ending with the NOAA Fisheries Service in Galveston, TX, where distance and speed between data points are calculated to determine the amount of time fished by location (effort) and then matching the fishing effort data to the number of pounds of shrimp catch unloaded at the dock (landings) based on date.