5 May 2021

Regionwide Trustee Implementation Group
c/o U.S. Fish and Wildlife Service
P.O. Box 29649
Atlanta, Georgia 30345

Dear Trustee Implementation Group Members:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Regionwide Trustee Implementation Group's (Regionwide TIG) Draft Restoration Plan/Environmental Assessment #1: Birds, Marine Mammals, Oysters, and Sea Turtles (draft RP/EA)[1]. The draft RP/EA evaluates the Regionwide TIG's alternatives for restoring marine mammals and other marine resources injured by the *Deepwater Horizon* (DWH) oil spill.

Alternatives considered for marine mammal restoration

The Regionwide TIG analyzed four alternatives for restoring injured marine mammals, with three identified as preferred by the TIG and one as non-preferred (including estimated project costs)—

- Alternative 1 (preferred): Voluntary modifications to commercial shrimp lazy lines to reduce dolphin entanglements ($3,179,088);
- Alternative 2 (preferred): Reducing impacts on dolphins from hook-and-line gear and provisioning through fishery surveys, social science, and collaboration ($1,700,000);
- Alternative 3 (preferred): Enhance marine mammal stranding network diagnostic capabilities and consistency across the Gulf of Mexico ($2,300,000); and
- Alternative 4 (non-preferred): Enhance capacity, diagnostic capability, and consistency of the marine mammal stranding network in the Gulf of Mexico ($7,887,000).

Background on the project screening process

The range of alternatives was developed by the Regionwide TIG through a screening process that evaluated marine mammal projects submitted via the Natural Resource Damage Assessment (NRDA) Trustee portal and other sources. The screening process considered the restoration goals identified for marine mammals in the *Deepwater Horizon's* NRDA Trustees' Final Programmatic Damage Assessment and Restoration Plan (PDARP) and Final Programmatic Environmental Impact Statement (DWH NRDA Trustees 2016) and the Strategic Framework for Marine Mammal Restoration Activities (DWH NRDA Trustees 2017), as well as evaluation factors

[1] Notice of availability at 86 Fed. Reg. 15199.

in the Oil Pollution Act (OPA) regulations (15 C.F.R. § 990.54) and the availability of funds for marine mammals in the Regionwide restoration area ($19 million) under the DWH NRDA settlement payment schedule. Alternatives 1 and 2 are primarily directed at restoration of common bottlenose and Atlantic spotted dolphins, which were significantly affected by the DWH oil spill (DWH NRDA Trustees 2016); Alternatives 3 and 4 are directed at restoration of all Gulf of Mexico marine mammals.

Evaluation of the marine mammal restoration alternatives

Alternative 1: Voluntary modifications to commercial shrimp lazy lines to reduce dolphin entanglements—Mortality and serious injury of marine mammals in shrimp trawl gear is currently unmitigated. Based on limited observer coverage of the commercial shrimp otter trawl fishery between 1997 and 2011, 12 marine mammals (identified as common bottlenose dolphins or unidentified delphinids[2]) were reported to have interacted with gear (Soldevilla et al. 2015). Of those, 6 involved entanglements in the trawl gear lazy line[3], 5 involved entanglements in nets with Turtle Excluder Devices (TEDs), and 1 involved entanglement in the tickler chain (Soldevilla et al. 2015). Most takes occurred off Texas (4) and Louisiana (4), and occurred either from January to April (6) or September to December (5) (Soldevilla et al. 2015). There is no observer coverage, and hence there are no serious injury or mortality estimates, for the skimmer trawl fishery, which uses similar gear for catching shrimp including a lazy line or 'easy line' for retrieval of the cod end of the net (Hein and Meier 1995). Skimmer vessels operate in bays and coastal state waters throughout the northern Gulf of Mexico, in waters that are generally less than 3.6 m (12 ft.) deep, and are therefore presumed to interact with bay, sound, and estuary stocks of common bottlenose dolphins wherever that gear is used.

This project would address the entanglement of dolphins in shrimp trawl lazy lines, which are typically polypropylene lines used to guide the cod end of the net onto the vessel during net retrieval. The project would involve working with shrimp otter and skimmer trawl fishermen to identify alternative materials for use as lazy lines that are not as prone to entangling dolphins. Different materials would be subject to in-water testing on shrimp trawl vessels to determine the feasibility of their use and the likelihood of entangling dolphins. Once suitable materials are identified, initial implementation would involve outreach to fishermen, training, workshops, distribution of materials, and/or incentives to encourage usage. The project is expected to last for approximately 7 years, with 4 or 5 years for testing and 2 or 3 years for implementation.

The Commission recommends that the Regionwide TIG include Alternative 1: Voluntary Modifications to Commercial Shrimp Lazy Lines to Reduce Dolphin Entanglements in its restoration plan as a means for addressing human-caused threats to common bottlenose dolphins

[2] Soldevilla et al. (2015) assumed that unidentified dolphins were either common bottlenose dolphins or Atlantic spotted dolphins for the purpose of estimating mortality, and that Atlantic spotted dolphins as well as several common bottlenose dolphin stocks were at risk from bycatch in the shrimp trawl fishery. See also marine mammal species/stocks killed or injured in the Southeastern U.S. Atlantic, Gulf of Mexico Shrimp Trawl Fishery – MMPA (Marine Mammal Protection Act) List of Fisheries (https://www.fisheries.noaa.gov/national/marine-mammal-protection/southeastern-us-atlantic-gulf-mexico-shrimp-trawl-fishery-mmpa).

[3] Lazy lines are polypropylene lines used by shrimp trawl fishermen to guide the cod end of the net onto the vessel during net retrieval.

and Atlantic spotted dolphins[4] in both otter and skimmer trawl gear. The Commission is concerned, however, that project implementation appears to be contingent on successful in-water testing of alternative materials. Given the low reported interaction rates with lazy lines in the observed portion of the fishery and the expected low number of fishing trips that would be included in the testing phase for alternative materials, it may not be possible to test a wide range of materials and still obtain a sufficient number of observations to conclude which type of material will be both feasible for trawl operations and effective in reducing dolphin interaction rates. A comprehensive literature review and consultation with gear manufacturers prior to *in situ* testing may be helpful in identifying materials that have been used in other underwater applications to prevent marine mammal entanglements. The Commission is aware of alternative materials recommended by gear specialists at the National Marine Fisheries Service's (NMFS) Pascagoula Lab to prevent entanglement of dolphins and turtles in bottom and vertical lines used for seismic surveys in the Gulf. They included anti-rotational wire rope, cable, or tightly twisted three-strand line to improve stiffness (see enclosed 12 March 2014 NMFS Memorandum for the Record). Additionally, consideration should be given to whether the lazy line can be eliminated from the trawl gear altogether. Based on a review of gear used in Gulf of Mexico and South Atlantic shrimp fisheries, the use of lazy lines appears to be standard (Scott-Denton et al. 2012); however, further analyses of observer data and other information obtained from the shrimp fishery would shed more light on the extent to which lazy lines are deployed and under what circumstances. The Commission recommends that the Regionwide TIG (1) include a literature review and consultation with gear experts to identify alternative materials that could help reduce entanglements, (2) conduct further analyses of observer data and other information on the use of lazy lines in the Gulf of Mexico and elsewhere, and (3) seek additional input from fishermen on whether the lazy lines can be eliminated, and, if so, under what circumstances.

Alternative 2: Reducing impacts on dolphins from hook-and-line gear and provisioning through fishery surveys, social science, and collaboration—Interactions between common bottlenose dolphins and hook-and-line gear occurs throughout the southeastern U.S., and often results in serious injury or mortality of dolphins (Gorzelany 1998; Zollett and Read 2006; Wells et al. 2008; Powell and Wells 2011; Adimey et al. 2014). These interactions are increasing in the Gulf of Mexico (Shippee 2014) and have been linked to availability of food from commercial and recreational fishery catches, declines in fish abundance during harmful algal blooms, bycatch discards, and illegal provisioning of food (Fertl and Leatherwood 1997; Fertl 2008; Powell and Wells 2011). Provisioned dolphins are conditioned to be attracted to human activities and are vulnerable to vessel strikes, intentional harm, accidental entanglement in, or hooking by, fishing gear, and other injuries (Bryant 1994; Samuels and Bejder 2004; Christiansen et al. 2016; Vail 2016) and appear to be more likely to depredate on fishing gear (Powell and Wells 2011).

This project would use systematic fishery surveys, social science studies, stakeholder workshops, stranding data, and gear found on stranded dolphins to characterize interactions between dolphins and hook-and-line gear and anglers' attitudes toward dolphins. This information would be used to identify ways to reduce interactions between dolphins and hook-and-line fishing

[4] The northern Gulf of Mexico stock of Atlantic spotted dolphins was not included as part of the affected environment in the environmental assessment but should be included in the final restoration plan.

activities. Those solutions would be further developed, tested, and evaluated in the context of future restoration plans. The project would be expected to last approximately 5 years.

Information on fishery interactions, provisioning, and depredation is incomplete for areas outside of Florida, and needs updating in previously studied hot spots in Florida (e.g., Sarasota Bay, Panama City) to track trends. Recreational fishery concerns about increasing depredation by dolphins and the need for updated information is evidenced by a December 2020 Congressional directive that NMFS undertake a study of dolphin (and shark) interference with commercial, for-hire, and recreational fishing vessels in the Gulf of Mexico and U.S. South Atlantic, as part of the Fiscal Year 2021 appropriations bill for Commerce, Justice, Science, and related agencies.[5] That directive called for submission of a report one year after project initiation (~March 2022) but no funds were allocated for its completion.

The Commissions recommends that the Regionwide TIG include Alternative 2: Reducing Impacts on Dolphins from Hook-and-Line Gear and Provisioning through Fishery Surveys, Social Science, and Collaboration in its restoration plan as a way of addressing the problem of increased interactions between common bottlenose dolphins and hook-and-line fisheries. In conducting this project, the Commission recommends that the TIG include areas under-represented in recent studies (e.g., Alabama, Mississippi, Louisiana, and Texas) to determine the extent of the problem and assess the role of both unintentional (i.e., discarded bait and catch from commercial and recreational fisheries) and intentional but illegal provisioning of dolphins. The Commission further recommends that the Regionwide TIG work with NMFS to ensure that information collected on interactions with hook-and-line gear and provisioning of dolphins be tracked in a publicly accessible database.

Alternative 3: Enhance marine mammal stranding network diagnostic capabilities and consistency across the Gulf of Mexico— Information on total human-caused mortality and serious injury was lacking for common bottlenose dolphins and other Gulf marine mammals prior to the DWH oil spill (DWH NRDA Trustees 2016) and continues to be a significant data gap (Hayes et al. 2020). Information compiled from stranding networks is used to improve understanding of population demography, stock structure, vital rates (reproduction and survival), and causes of disease and mortality. When integrated with other environmental data through programs such as NOAA's Marine Mammal Health Monitoring and Analysis Platform for the Gulf (GulfMAP[6]) and Compilation of Environmental, Threats, and Animal Data for Cetacean Population Health Analyses (CETACEAN), stranding data can help to elucidate environmental and anthropogenic factors associated with trends in the health of marine mammals and other marine species.

This project would support and enhance the diagnostic capabilities of the stranding response network in the Gulf and thereby improve the treatment and care of live-stranded cetaceans. That includes providing network members with hand-held blood analyzers to diagnose illness in the field, which would help to evaluate care and treatment options as well as identify specific health changes. It also includes auditory testing equipment and training for network members to evaluate the hearing

[5] See Section on "Assessment of Fishing Interference" (page 38) of the explanatory statement for the bill at https://www.appropriations.senate.gov/download/fy21-cjs-report.
[6] https://www.mmc.gov/priority-topics/marine-mammal-health-and-strandings/marine-mammal-health-and-monitoring-analysis-platform-marine-mammal-health-map/

of cetaceans that are being rehabilitated, which can help determine whether they are good candidates for release back into the wild. The project would also improve access for all stranding network members to laboratory testing for dolphin samples through pre-established contracts with NMFS-designated service laboratories, which would result in more consistent, comparable information from stranded cetaceans on causes of illness and death, and exposure to natural and human-caused stressors across the region. Finally, this project would support a data manager to provide help with quality control of stranding data, provide training for stranding network members on data collection methods and safety protocols, and support workshops to encourage communication and sharing of information among network members. The project is expected to last for approximately 5 years.

The Commission recommends that the Regionwide TIG include Alternative 3: Enhance Marine Mammal Stranding Network Diagnostic Capabilities and Consistency across the Gulf of Mexico as a way to improve management decisions by network members regarding the care and treatment of stranded cetaceans, enhance the collection of information to assess and respond to natural and human-caused stressors, and ensure the safety of both network members and stranded animals. The Commission encourages the Regionwide TIG to stress the importance of timely sample and data analysis, sharing of information across the network and across institutions, and maintaining strong collaborations with NMFS to improve data collection methods and technologies, analytical capabilities, and network member training.

Alternative 4: Enhance capacity, diagnostic capability, and consistency of the marine mammal stranding network in the Gulf of Mexico—This project is similar to Alternative 3, but would provide direct support to stranding network member organizations for expanding staff, providing travel support, and purchasing additional diagnostic and response equipment (such as ultrasound and x-ray machines, trucks, and trailers), fuel, and supplies.

The Regionwide TIG determined that this project was not appropriate for funding under the final restoration plan because it included capacity enhancements to individual stranding network member organizations. The Commission agrees that this type of project is best supported by state-based TIGs, consistent with the Commission's comments to the Louisiana and Alabama TIGs on state-specific restoration plans.[7]

Other restoration alternatives

In addition to the marine mammal restoration alternatives discussed herein, the Commission also supports implementation of the Birds Alternative 1: Reducing Marine Debris Impacts on Birds and Sea Turtles. Entanglement and ingestion of marine debris results in a significant conservation threat to marine mammals in the Gulf of Mexico and globally (Baulch and Perry 2014, Adimey et al. 2014). The ingestion of a hard piece of plastic material was implicated in the death of an endangered Bryde's whale in Florida in March 2019[8]. The proposed activities under this alternative would be to 1) collect information to identify hot spots of marine debris, 2) support large-scale and site-specific marine debris removal events, and 3) conduct outreach to raise public awareness and promote proper disposal of trash and fishing gear. The Commission recommends that the Regionwide TIG

[7] See its 20 April 2020 letter to the Louisiana TIG and its 7 May 2018 letter to the Alabama TIG.
[8] https://www.fisheries.noaa.gov/feature-story/dna-confirms-rare-brydes-whale-florida-gulf-mexico-species

implement the Birds Alternative 1: Reducing Marine Debris Impacts on Birds and Sea Turtles, and expand the data collection, where possible, to include information on entanglements and ingestion of marine debris by marine mammals.

The Commission appreciates the opportunity to review the draft RP/EA and hopes that the Regionwide TIG finds these comments helpful. Please contact me if you have any questions concerning any issues raised in this letter.

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

Enclosure

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March 12, 2014

MEMORANDUM FOR: The Record

FROM: John Mitchell, Wayne Hoggard and Kendall Falana
SEFSC, Mississippi Laboratories, Harvesting Systems Unit

RE: Evaluation of line used for seismic operations and potential marine animal entanglement

On Febraury 18, 2014, the SEFSC Harvesting Systens Unit leader (John Mitchell) was contacted by Stacy Horstman (SERO Bottlenose Dolphin Conservation Coordinator) regarding entanglements and mortalities of a spotted dolphin and sea turtle and the entanglement of a manta ray which occurred in the GOM during the operation of a seismic survey. Subsequent to reporting of the incidents by the Fairfield Nodal, the seismic company, BOEM suspended/revoked their permit pending a review of their operations and the line (rope) associated with the seismic operations. BOEM requested assistance from SERO Protected Resources Division in a review of the seismic line and in turn, the Harvesting Unit was contacted by SERO PR to assist them in this review and to provide recommendations. The following is a summary of our meeting with Fairfield representatives.

On March 5, 2014, John Mitchell, Kendall Falana and Wayne Hoggard with the SEFSC Harvesting Systems Unit met with Mary Jo Barkaszi (CSA Ocean Sciences Inc.) and Gilbert Bachelier (Fairfield Nodal) to review the seismic equipment currently used by Fairfield Nodal to conduct tethered ocean bottom surveys. We discussed the gear that has been used in previous surveys and then looked at possible ways to mitigate the risk of sea turtle and marine mammal entanglements. The primary focus was on possible options to modify or change the bottom and vertical lines associated with the seismic node system.

The discussion began with Gilbert providing some background information on the origin and characteristics of the gear. The orange coated line was developed for work in the Red Sea and designed for working in and around coral reefs. This line has a breaking strength of 30,000 lbs., was manufactured by Cortland Rope and is quite expensive. A sample was passed around and we were able to look at the diameter, rigidity and resistance or drag characteristics. The Harvesting Unit group consensus was this line would greatly reduce the chances of an entanglement.

Listed below are the primary topics discussed, along with the recommendations and the response from Fairfield.

1. **Is using steel or coated wire rope an option?**

The existing pinch sheave used on deck for retrieval of the gear creates sharp angles (bends) that would kink the wire rope and not work with their current set-up. Safety was another concern; they chose a line that has minimum elongation with low kick-back in the event it should part. Gilbert indicated that this was the primary reason that wire rope was not considered.

2. **Is the 3/8" 12 strand Vectran synthetic fiber line with a 3/16" 7 x7 galvanized PVC coated wire rope inserted a viable alternative to the orange line?**

Gilbert presented samples of the Vectran bottom line that caused the dolphin entanglement, as well as the proposed substitute, Vectran with a wire rope-core.

Without the wire rope inserted, the Vectran line was very pliable and was easily looped, which likely caused the entanglement of the dolphin.

The rigidity of the line improved with the wire rope inserted and should reduce the chance of entanglement.

Large quantities (450 miles) of this line have been purchased and Fairfield would prefer to utilize it if possible. When compared to the Orange line, the Vectran/wire rope-core line was not as rigid and the surface-smoothness characteristics were less.

Adding a coating to the Vectran wire rope-core line was suggested and may be a possible option provided a durable material can be located. Insertion of the PVC coated wire rope also increased the diameter of the line to ½".

3. **Pinger lines for positioning**

Suggested reducing the length of the pinger line to the absolute minimum and utilizing a rigid line or coated wire rope for a lanyard.

We asked about directly attaching the pinger to the node, but were told this would cause interference with the node operations and was not an option.

Indication was that Fairfield would look into the possibility of using a shorter, more rigid line for pinger connections.

4. **Acoustic release line and the manta ray entanglement**

According to Gilbert, normal retrieval operations are to acoustically release the float just prior to retrieval and then to immediately start the haulback. An operational problem caused a delay when the manta was entangled that left the line in the water column much longer than normal.

We suggested that they continue to not release the retrieval buoy until just prior to haulback and to re-evaluate the lanyard length and attachment.

Connecting the deployment canister directly to the bottom line with little to no vertical line would reduce the number of exposed lines in the water column and therefore reduce the risk of an encounter. Fairfield indicated they would investigate possible options.

A follow-up call with John Kenney, gear specialist from NERO, was placed on March 10 to discuss commonality of bottom lines used in the NE pot fishery. John indicated they had faced similar challenges in mitigating entanglement threats to large whales and that while a smooth, stiff line was the best choice; finding one that could withstand the rigors of a pot hauler has been a challenge. He provided valuable insight into some of the trials they had conducted on different lines and the associated trade off of each. John suggested contacting a rope manufacturer that develops specialized lines. We spoke with Donnie MacLean from PolySteel Atlantic about possible solutions. He was not optimistic about inserting a cable into the existing line. His suggestion was to start over and consider a three strand line, with a tighter twist to improve stiffness. Research would need to be conducted to determine the wear, heat tolerance, stretch, and strength characteristics before going into full production.

Recommendations

Since there was no actual video footage of the deployed line and nodes,we suggested that underwater observations be considered. We recommended the use of divers rather than an ROV to provide an in-situ assessment of the line characteristics. The change in temperature, salinity and load may have an impact on the line attributes. Divers would have the ability to physically handle the line and determine the likelihood of loops being created and the rigidity of the line in an actual working environment.

Since this technology will no doubt continue to expand and may likely be used outside the Gulf of Mexico, we suggested a proactive approach which would consider other species that might encounter the gear. Both Gilbert and Mary Jo were very open to this idea and wanted to immediately address as many of the concerns as possible now, so not to stop operations in the future.

With regard to the bottom node line, our recommendations to best mitigate future marine mammal entanglements are listed below in order of preferred options

Preferred options:

1.) Orange cable – smooth surface and good rigidity. Would be difficult to develop small diameter loops capable of wrapping around a mammal or turtle.

2.) Vectran with PVC coated wire rope-core (Fairfield substitute)

- Not as rigid as above options. May be capable of developing small diameter loops on bottom if disturbed.

- Due to the twisted cable composition of the wire-rope core and being retrieved through a pinch sheave-type hauler, it will likely develop twists with repetitive use. It is highly recommended that a test of several 200+ meter sections be performed before investing in this as a solution.

- Conduct trials using swivels over short sections to try and mitigate twisting

- Consider replacing twisted cable with a lead core. This would prevent twisting and added weight would reduce the possibility of looping if disturbed.

- Consider inserting a heavy (4-8mm) monofilament line into the Vectran. Monofilament would increase the stiffness of the Vectran line, slightly increase the specific gravity and likely reduce the propensity to kink or twist after being run through a pinch sheave hauler.

Lindgren Pittman, a fishing line manufacturer produces heavy monofilament line for the longline fishery. The company also has been one of the leading researchers in developing lines to reduce the potential for entanglement by marine mammals and sea birds. One of their approaches was the use of a composite line, with a core of heavy metal and metal salt particles to increase the sink rate. This line might be a viable candidate for inserting into the Vectran, although additional research would need to be conducted.

3.) Anti-rotational wire rope

- This cable is a consideration as it would provide added stiffness; however, it would require converting deck machinery for haulback. Fairfield has safety concerns with cable use (breaking on deck), but such cable is used in numerous marine applications under much greater loads than the node retrieval process. As previously mentioned kinking and twisting may be a major issue with the long lengths required so additional research would need to be conducted