



**UNITED STATES DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
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F/SER31:PO

MEMORANDUM FOR: Jolie Harrison  
Permits and Conservation Division  
Office of Protected Resources  
National Marine Fisheries Service

JUN 04 2018

FROM: *fa* Roy E. Crabtree, Ph.D.  
Regional Administrator

SUBJECT: Amendment to the 2016 Biological Opinion on the Continued Authorization and Implementation of National Marine Fisheries Service's Integrated Fisheries Independent Monitoring Activities in the Southeast Region (SER-2018-19319)

This responds to your memorandum dated May 9, 2016, requesting that the National Marine Fisheries Service initiate Endangered Species Act (ESA) consultation on the Permits and Conservation Division (PR1) proposal to promulgate regulations and issue a Letter of Authorization (LOA) to the Southeast Fisheries Science Center (SEFSC), pursuant to section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. 1361 *et seq.*), for taking marine mammals incidental to fishery-independent research surveys.

Background

On May 9, 2016, the Southeast Regional Office (SERO) issued a Biological Opinion (BiOp) (SER-2009-07541) to the SEFSC for SEFSC's integrated fisheries independent monitoring (FIM) activities in the Southeast Region. The FIM activities considered in the BiOp include gear-related surveys (e.g., trawls, gillnets, longlines, etc.) and active acoustic surveys.

For the purposes of the consultation, NOAA, NMFS, Southeast Regional Office (SER), Operations, Management, and Information Services Division (F/SER1); US Fish and Wildlife Service (USFWS); and NMFS SEFSC are considered the action agencies and the consulting agency is NOAA/NMFS/SER, Protected Species Division (F/SER3). NMFS Office of Protected Resources (F/PR1) was not included as an action agency. Moreover, the BiOp does not consider the issuance of the LOA under Section 101(a)(5) of the MMPA. However, the SEFSC has requested, and PR1 proposes to authorize, Level B harassment (as defined under the MMPA) incidental to scientific sonar surveys using active acoustics. The FIM activities and action area described in the existing BiOp have not changed and are ones considered in the proposed regulations.



The original BiOp concluded FIM research, including the use of active acoustic equipment, will not affect blue, sei, sperm, and fin whales because these species occur most consistently in waters deeper than where most FIM-related sampling occurs, including acoustic surveys. The BiOp concludes FIM-related acoustic activities will not affect North Atlantic right whales (NARW) because NARW do not occur in the Gulf of Mexico or the Caribbean and all of the projects using acoustic equipment in the Atlantic occur during times of year (April-October) when the species is not present in the region.

In 2016, NMFS revised the ESA listing for the humpback whale to identify 14 distinct population segments (DPS), and determined that nine populations have recovered enough that they do not warrant listing. One of those DPSs is the West Indies DPS, which is the one affected by the proposed action. Since it is no longer listed under the ESA, it is not considered further in this analysis.

None of the acoustic activities associated with the proposed action will affect the essential features of NARW critical habitat, as they will not affect sea state, sea surface temperature, or water depth individually or when they co-occur.

PR1's consultation request stated that based on the best available science (*e.g.*, new marine mammal hearing data) and understanding of project activities, (*e.g.*, timing) that the 2016 BiOp conclusions regarding acoustic activities to the ESA whale species should be reconsidered. However, the conclusions regarding NARW critical habitat remain valid.

Based on review of the information provided by PR1, NMFS is amending the 2016 BiOp to reevaluate the effects of the proposed action's acoustic activities on the blue whale, sei whale, sperm whale, fin whale, and NARW. It also adds evaluation of the effects of the proposed action on the Gulf of Mexico Bryde's whale, currently proposed for ESA listing. NMFS believes that each of these species may be affected, but are not likely to be adversely affected. This rationale for these updated determinations is outlined in this Amendment, and NMFS is hereby amending the 2016 BiOp accordingly. NMFS is also including PR1 as one of the action agencies, and adding their issuance of the MMPA incidental take authorization as part of the proposed action. The attached document includes the amended Action Agency, and sections 2, 3, and 12 of the 2016 BiOp consistent with the information provided by PR1. No additional changes are warranted, so all remaining portions of the 2016 BiOp remain in effect.

File: 1514-22.c

**1. Amend Action Agency to include Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, to read as follows:**

National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, Operations, Management, and Information Services Division; National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center; United States Fish and Wildlife Service; National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Protected Resources, Permits and Conservation Division

**2. Amend Section 2.0 Description of the Proposed Action, to include the issuance of the MMPA LOA to the SEFSC, to read as follows:**

**2.3 Issuance of Marine Mammal Protection Act (MMPA) Letter of Authorization (LOA) to the Southeast Fisheries Science Center (SEFSC)**

NMFS is proposing to authorize take<sup>1</sup>, by Level B harassment, of marine mammals incidental to the SEFSC's fishery research activities. The permit would apply to the acoustic activities described in this section.

The SEFSC conducts hydrographic, oceanographic, and meteorological sampling concurrent with many of the aforementioned surveys which requires the use of active acoustic devices (*e.g.*, side-scan sonar, echosounders). These active sonars result in elevated sound levels in the water column which has the potential to disrupt marine mammal behavioral patterns (*i.e.*, Level B harassment).

A wide range of active acoustic devices are used in SEFSC fisheries surveys for remotely sensing bathymetric, oceanographic, and biological features of the environment. SEFSC active acoustic sources include various echosounders (*e.g.*, multibeam systems), scientific sonar systems, positional sonars (*e.g.*, net sounders for determining trawl position), and environmental sensors (*e.g.*, current profilers). The operating characteristics of the SEFSC active acoustic sources is provided in table that follows.

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<sup>1</sup> "Take" under the MMPA means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. "Harassment" is statutorily defined as, any act of pursuit, torment, or annoyance which--

- (*Level A Harassment*) has the potential to injure a marine mammal or marine mammal stock in the wild; or,
- (*Level B Harassment*) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

Operating Characteristics of SEFSC Active Acoustic Sources

Active acoustic system	Operating frequencies (kHz)	Maximum source level (dB re: 1µPa @ 1 m)	Nominal beamwidth	Effective exposure area: Sea surface to 200 m depth (km <sup>2</sup> )	Effective exposure area: Sea surface to 160 dB threshold depth (km <sup>2</sup> )
Simrad EK60 narrow beam echosounder	18, 38, 70, 120, 200*, 333*	224	11° @ 18 kHz 7° @ 38 kHz	0.0142	0.1411
Simrad ME70 multibeam echosounder	70-120	205	140°	0.0201	0.0201
Teledyne RD Instruments ADCP, Ocean Surveyor	75	223.6	N/A	0.0086	0.0187
Simrad EQ50	50, 200*	210	16 @ 50kHz 7 @ 200kHz	0.0075	0.008
Simrad ITI Trawl Monitoring System	27-33	< 200	40° x 100°	0.0032	0.0032
*Devices working at this frequency are outside of known marine mammal hearing range and not considered to have the potential to result in marine mammal harassment.					

**3. Amend labeling of 2.3 Action Area, to read as follows:**

2.4 Action Area

**4. Amend Section 3.0 *Species and Critical Habitat That Occur in the Action Area*, the table labeled *Species That Occur in the Action Area*, to update the fact that the humpback whale is no longer ESA listed, and add Bryde’s whale as proposed to be listed:**

3.0 Species and Critical Habitat That Occur in the Action Area

**Species That Occur in the Action Area**

Marine Mammals		Status
Blue whale	<i>Balaenoptera musculus</i>	Endangered
Sei whale	<i>Balaenoptera borealis</i>	Endangered
Sperm whale	<i>Physeter macrocephalus</i>	Endangered

Fin whale	<i>Balaenoptera physalus</i>	Endangered
North Atlantic right whale	<i>Eubalaena glacialis</i>	Endangered
Bryde's whale Gulf of Mexico subspecies	<i>Balaenoptera edeni</i>	Endangered, Proposed
<b>Sea Turtles</b>		
Green sea turtle	<i>Chelonia mydas</i>	Threatened <sup>2</sup>
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened <sup>3</sup>
<b>Invertebrates</b>		
Elkhorn coral	<i>Acropora palmata</i>	Threatened
Staghorn coral	<i>Acropora cervicornis</i>	Threatened
Rough cactus coral	<i>Mycetophyllia ferox</i>	Threatened
Pillar coral	<i>Dendrogyra cylindrus</i>	Threatened
Lobed star coral	<i>Orbicella annularis</i>	Threatened
Mountainous star coral	<i>Orbicella faveolata</i>	Threatened
Boulder star coral	<i>Orbicella franksi</i>	Threatened
<b>Fish</b>		
Smalltooth sawfish	<i>Pristis pectinata</i>	Endangered <sup>4</sup>
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered
Atlantic sturgeon	<i>Acipenser oxyrinchus oxyrinchus</i>	Endangered/Threatened <sup>5</sup>
Scalloped hammerhead	<i>Sphyrna lewini</i>	Threatened <sup>6</sup>

**5. Amend section 3.1 Species Not Likely to be Adversely Affected, to delete humpback whale, include Bryde's whale, and update language to read as follows:**

FIM uses different gear types or techniques to collect FIM data: visual surveys, fish traps, underwater cameras, artificial habitat aggregation devices, gillnets, seines, trawl gear (bottom and plankton), and hook-and-line gear (bottom longline and vertical line). NMFS determined that none of these gear types or acoustic equipment when used as described in Section 2.0 are likely to adversely affect the following species listed under the ESA: blue whales, sei whales, sperm whales, fin whales, Bryde's whales, North Atlantic right whales, gulf sturgeon and all listed corals in the action area. These species are excluded from further analysis and consideration in this Opinion. Table 3.1 indicates the effects determinations for each species.

<sup>2</sup> The North Atlantic Distinct Population Segment (DPSs) and the South Atlantic DPS.

<sup>3</sup> The NW Atlantic DPS

<sup>4</sup> The United States DPS

<sup>5</sup> The New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs are listed as endangered, the Gulf of Maine DPS is listed as threatened; all can occur in the action area.

<sup>6</sup> Central and Southwest Atlantic DPS

6. Amend Table 3.1 *Species Not Likely to be Adversely Affected*, to remove humpback whale, add Bryde’s whale, update determinations in the Acoustic Equip. column from “NE” to “NLAA” for ESA whale species, and to read as follows:

**Table 3.1. Species Not Likely to be Adversely Affected**

Species	Gear Type							
	Bottom Longline	Vertical Line	Bottom Trawl	Plankton Trawl	Gillnets	Seines		
Blue whale	NE	NE	NE	NE	NE	NE		
Sei whale	NE	NE	NE	NE	NE	NE		
Fin whale	NE	NE	NE	NE	NE	NE		
Sperm whale	NE	NE	NE	NE	NE	NE		
North Atlantic right whale	NE	NE	NLAA	NE	NE	NE		
Bryde’s whale Gulf of Mexico subspecies	NE	NE	NE	NE	NE	NE		
Elkhorn coral	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE	NE		
Staghorn coral	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE	NE		
Rough cactus coral	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE	NE		
Pillar coral	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE	NE		
Lobed star coral	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE	NE		
Mountainous star coral	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE	NE		
Boulder star coral	NE or NLAA	NE or NLAA	NE or NLAA	NE or NLAA	NE	NE		
Johnson’s Seagrass	NE	NE	NLAA	NE	NE	NE		
Gulf sturgeon	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA		
Species	Gear Types							
	Fish Traps	U/W Cameras	Visual Surveys	Artificial Habitat	Dip Net	ROVs	Acoustic Equip.	Electrofishing
Blue whale	NE	NE	NE	NE	NE	NE	NLAA	NE
Sei whale	NE	NE	NE	NE	NE	NE	NLAA	NE
Fin whale	NE	NE	NE	NE	NE	NE	NLAA	NE
Sperm whale	NE	NE	NE	NE	NE	NE	NLAA	NE
North Atlantic right whale	NE	NE	NE	NE	NE	NE	NLAA	NE
Bryde’s whale Gulf of Mexico subspecies	NE	NE	NE	NE	NE	NE	NLAA	NE
Elkhorn coral	NE or NLAA	NE or NLAA	NLAA	NE	NE	NE	NE	NE
Staghorn coral	NE or NLAA	NE or NLAA	NLAA	NE	NE	NE	NE	NE
Rough cactus coral	NE or	NE or	NLAA	NE	NE	NE	NE	NE

	NLAA	NLAA						
Pillar coral	NE or NLAA	NE or NLAA	NLAA	NE	NE	NE	NE	NE
Lobed star coral	NE or NLAA	NE or NLAA	NLAA	NE	NE	NE	NE	NE
Mountainous star coral	NE or NLAA	NE or NLAA	NLAA	NE	NE	NE	NE	NE
Boulder star coral	NE or NLAA	NE or NLAA	NLAA	NE	NE	NE	NE	NE
Johnson's seagrass	NE	NE	NE	NE	NE	Ne	NE	NE
Gulf sturgeon	NE	NE	NE	NE	NE	NE	NE	NE

Note: Bryde's whale is proposed for listing. PR1 has made NE determinations for all categories except Acoustic Equip. The species is included so in the event it is listed an analysis has been conducted.

**7. Amend section 3.1.1 *Blue, Sei, Sperm, and Fin Whales* to read as follows:**

We believe all proposed action gear types/activities will not affect blue, sei, or sperm whales, except for acoustic equipment. All 3 species are predominantly found seaward of the continental shelf in deeper waters (CETAP 1982; NMFS 2011i; Waring et al. 2010; Waring et al. 2013; Wenzel et al. 1988). In the North Atlantic, blue whales are most frequently sighted in the Gulf of St. Lawrence from April to January (Sears 2002) and are considered rare off the East Coast. NMFS's annual marine mammal stock assessment reports (SAR) last reported on blue whales in 2010, stating "[t]he blue whale is best considered as an occasional visitor in US Atlantic EEZ waters, which may represent the current southern limit of its feeding range(CETAP 1982; Wenzel et al. 1988). Pike et al. (2009) conducted ship surveys in the Central and Northeast Atlantic in 1987, 1989, 1995, and 2001. Blue whales were most commonly sighted off western Iceland, and to a lesser extent northeast of Iceland. They were very rare or absent in the Northeast Atlantic (Waring et al. 2010). Sightings of sperm whales are almost exclusively in the continental shelf edge and continental slope areas (Scott and Sadove 1997). Most sperm whales are found in very deep waters (> 1,000 m). Since these species occur most consistently in waters much deeper than those FIM-related sampling is likely to occur in, we believe all FIM-related gears/techniques (except acoustic equipment), or vessel operations, will have no effect on blue, sei, or sperm whales. None of these species is found in the U.S. Caribbean where FIM-related activities may occur, so those activities will not affect these species.

Fin whales are generally found along the 100-m isobath with sightings also spread over deeper water including canyons along the shelf break and are found north of Cape Hatteras, North Carolina (Waring et al. 2012). Fin whales do not occur in the Gulf of Mexico or U.S. Caribbean where FIM-related activities may occur. The dip net, gillnet, and seine sampling occurring in the South Atlantic will not affect fin whales because they occur in riverine, estuary, or inshore bay environments where the species does not occur. ROV deployment, hook-and-line sampling (bottom longline and vertical line), trawling (bottom and plankton), underwater camera deployments, electrofishing, and fish trap deployments will either occur shallower than where fin whales are found or south of Cape Hatteras, North Carolina, and will not affect them. No visual surveys are conducted and no artificial habitat aggregation devices are deployed in the South Atlantic region where the fin whale occurs. Therefore, we believe all FIM-related

gears/techniques (except acoustic equipment), and vessel operations, will have no effect on fin whales, either.

All four species, however, may be affected by acoustic equipment. Based on PR1 analysis of the LOA application and draft EA, PR1 anticipates that ESA-listed marine mammals may be taken, by Level B harassment only, incidental to use of active acoustic systems. They make this finding based on the fact that acoustic survey equipment operate within the hearing ranges of the ESA-listed cetaceans (and the proposed for listing Bryde’s whale), and those species overlap in space and time with acoustic surveys.

#### Marine Mammal Hearing Groups

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, <i>Kogia</i> , river dolphins, cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i> )	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz
* Represents the generalized hearing range for the entire group as a composite (i.e., all species within the group), where individual species’ hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall et al. 2007) and PW pinniped (approximation).	

While Level B incidental take is expected, such take does not automatically equate to ESA take. PR1 analysis suggests that SEFSC use of active acoustic sources considered here have moderate to high output frequencies (10 to 180 kHz), generally short ping durations, and are typically focused (highly directional with narrow beam width) to serve their intended purpose of mapping specific objects, depths, or environmental features. In addition, some of these sources can be operated in different output modes (*e.g.*, energy can be distributed among multiple output beams) that may lessen the likelihood of perception by and potential impacts on marine mammals.

There is some minimal potential for temporary effects to hearing capabilities within specific frequency ranges for select marine mammals, but most effects would likely be limited to temporary behavioral disturbance. If individuals are in close proximity to active acoustic sources they may temporarily increase swimming speeds (presumably swimming away from the source) and surfacing time or decrease foraging effort (if such activity were occurring). These reactions are considered to be of low severity due to the short duration of the reaction. Individuals may



move away from the source if disturbed, but because the source is itself moving and because of the directional nature of the sources considered here, it is unlikely any temporary displacement from areas of significance would occur and any disturbance would be of short duration. In addition, because the SEFSC survey effort is widely dispersed in space and time, repeated exposures of the same individuals would be very unlikely. We agree with PR1 assessment, and for these reasons, we do not consider the acoustic disturbance that would result from acoustic equipment to represent a significant additional population stressor. The minor and temporary effects would be expected to be insignificant and the proposed action is not likely to adversely affect these species.

**8. Amend section 3.1.2 *North Atlantic Right Whales, ROV and Acoustic Equipment*, to read as follows:**

***ROV and Acoustic Equipment***

ROV deployment will not affect North Atlantic right whales because it occurs from May-August when the species is not present in the South Atlantic region. NARWs, however, may be affected by acoustic equipment. Based on PR1 analysis of the LOA application and draft EA, PR1 anticipates that this species may be taken, by Level B harassment only, incidental to use of active acoustic systems. They make this finding based on the fact that acoustic survey equipment operate within the hearing ranges of the species, and the species overlaps in space and time with acoustic surveys.

As discussed for blue, sei, fin, or sperm whales, PR1 analysis suggests that SEFSC use of active acoustic sources considered here have moderate to high output frequencies (10 to 180 kHz), generally short ping durations, and are typically focused (highly directional with narrow beam width) to serve their intended purpose of mapping specific objects, depths, or environmental features. In addition, some of these sources can be operated in different output modes (*e.g.*, energy can be distributed among multiple output beams) that may lessen the likelihood of perception by and potential impacts on marine mammals.

There is some minimal potential for temporary effects to hearing capabilities within specific frequency ranges, but most effects would likely be limited to temporary behavioral disturbance. If individuals are in close proximity to active acoustic sources they may temporarily increase swimming speeds (presumably swimming away from the source) and surfacing time or decrease foraging effort (if such activity were occurring). These reactions are considered to be of low severity due to the short duration of the reaction. Individuals may move away from the source if disturbed, but because the source is itself moving and because of the directional nature of the sources considered here, it is unlikely any temporary displacement from areas of significance would occur and any disturbance would be of short duration. In addition, because the SEFSC survey effort is widely dispersed in space and time, repeated exposures of the same individuals would be very unlikely. We agree with PR1 assessment, and for these reasons, we do not consider the acoustic disturbance that would result from acoustic equipment to represent a significant additional population stressor. The minor and temporary effects would be expected to be insignificant and the proposed action is not likely to adversely affect this species.

**9. Delete section 3.1.3 *Humpback Whales*.**

**10. Add section 3.1.3 *Bryde's Whales (Gulf of Mexico Subspecies)*, to read as follows:**

NMFS has proposed to list the Gulf of Mexico (GOMx) Bryde's whale as endangered under the ESA. This amendment considers the effects of SEFSC activities so that they are analyzed in the event this whale is listed.

Rosel *et al.* (2016) found that the historical distribution of Bryde's whale in the Gulf of Mexico included the northeastern, north-central and southern Gulf of Mexico. The Biologically Important Area, located in the De Soto Canyon area of the northeastern Gulf of Mexico, encompasses the current areal distribution of the GOMx Bryde's whale.

PR1 has made a "no effect" determination for this species for potential effects from SEFSC project gear. Acoustic equipment and vessel interactions may affect this species. However, the risk of ship strike is negligible due to lack of interactions from previous SEFSC sampling efforts and implementation of proposed mitigation measures. Given the relatively slow speeds of research vessels, the presence of bridge crew watching for obstacles at all times (including marine mammals), the presence of marine mammal observers on some surveys, the small number of research cruises, and past experience, NMFS believes that the possibility of ship strike would be extremely unlikely and discountable.

Bryde's whales may be affected by acoustic equipment. Based on PR1 analysis of the LOA application and draft EA, PR1 anticipates that this species may be taken, by Level B harassment only, incidental to use of active acoustic systems. They make this finding based on the fact that acoustic survey equipment operate within the hearing ranges of the species, and the species overlaps in space and time with acoustic surveys.

PR1 analysis suggests that SEFSC use of active acoustic sources considered here have moderate to high output frequencies (10 to 180 kHz), generally short ping durations, and are typically focused (highly directional with narrow beam width) to serve their intended purpose of mapping specific objects, depths, or environmental features. In addition, some of these sources can be operated in different output modes (*e.g.*, energy can be distributed among multiple output beams) that may lessen the likelihood of perception by and potential impacts on marine mammals.

There is some minimal potential for temporary effects to hearing capabilities within specific frequency ranges, but most effects would likely be limited to temporary behavioral disturbance. If individuals are in close proximity to active acoustic sources they may temporarily increase swimming speeds (presumably swimming away from the source) and surfacing time or decrease foraging effort (if such activity were occurring). These reactions are considered to be of low severity due to the short duration of the reaction. Individuals may move away from the source if disturbed, but because the source is itself moving and because of the directional nature of the sources considered here, it is unlikely any temporary displacement from areas of significance would occur and any disturbance would be of short duration. In addition, because the SEFSC survey effort is widely dispersed in space and time, repeated exposures of the same individuals would be very unlikely. We agree with PR1 assessment, and for these reasons, we do not

consider the acoustic disturbance that would result from acoustic equipment to represent a significant additional population stressor. The minor and temporary effects would be expected to be insignificant and the proposed action is not likely to adversely affect this species.

**11. Amend Section 12.0, *References*, to include the following:**

Rosel, P. E., P. Corkeron, L. Engleby, D. Epperson, K. D. Mullin, M. S. Soldevilla, and B. L. Taylor. 2016. Status Review of Bryde's Whales (*Balaenoptera edeni*) in the Gulf of Mexico under the Endangered Species Act. NOAA Technical Memorandum NMFS-SEFSC-692.