ANNUAL REPORT NUMBER 1

NAVY OPERATIONS OF SURVEILLANCE TOWED ARRAY SENSOR SYSTEM LOW FREQUENCY ACTIVE (SURTASS LFA) SONAR ONBOARD THE

USNS ABLE (T-AGOS 20)

USNS EFFECTIVE (T-AGOS 21)

USNS IMPECCABLE (T-AGOS 23)

USNS VICTORIOUS (T-AGOS 19)

UNDER THE NATIONAL MARINE FISHERIES SERVICE LETTERS OF AUTHORIZATION OF 15 AUGUST 2012

DEPARTMENT OF THE NAVY
CHIEF OF NAVAL OPERATIONS

OCTOBER 2013

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LIST OF ACRONYMS AND ABBREVIATIONS

µ	micro
%	percent or percentage
BiOp	Biological Opinion
BOEM	Bureau of Ocean Energy Management
CETMAP	Cetacean Mapping
CFR	Code of Federal Regulations
CLFA	Compact Low Frequency Active
CNO	Chief of Naval Operations
CSM	cross spectral matrix
dB	decibel(s)
dB re 1 µPa @ 1 m	decibel(s) relative to one microPascal at one meter from center of acoustic source
DoN	Department of the Navy
EIS	Environmental Impact Statement
ENGO	Environmental non-governmental organization
EO	Executive Order
EOG	Executive Oversight Group
ESA	Endangered Species Act
ft	foot/feet
FY	fiscal year
HF	high frequency
HF/M3	High Frequency Marine Mammal Monitoring (sonar)
HLA	horizontal line array
hr	hour(s)
Hz	Hertz
ITS	Incidental take statement
IUSS	Integrated Undersea Surveillance System
km	kilometer(s)
kph	kilometers per hour
kt	knot(s)
LF	low frequency
LFA	Low Frequency Active
LOA	Letter of Authorization
LTM	Long Term Monitoring
m	meter(s)
M3	Marine Mammal Monitoring (program)
MAI	Marine Acoustics, Inc.

MILDET	Military Detachment
min	minute(s)
MMC	Marine Mammal Commission
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NGOs	non-governmental organizations
nmi	nautical mile(s)
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuary
NOAA	National Oceanic and Atmospheric Administration
OBIA	Offshore Biologically Important Area
OEIS	Overseas Environmental Impact Statement
OIC	Officer in Charge
Pa	Pascal
RL	received level
rms	root mean square
ROD	Record of Decision
SAG	Scientific Advisory Group
sec	second(s)
SEIS/SOEIS	Supplemental Environmental Impact Statement/ Supplemental Overseas Environmental Impact Statement
SL	source level
Sonar	sound navigation and ranging
SPL	sound pressure level
SURTASS	Surveillance Towed Array Sensor System
T-AGOS	Tactical Auxiliary General Ocean Surveillance (vessel)
TL	twin line
U.S.	United States of America
U.S.C.	United States Code
USNS	United States Naval Ship
VLA	vertical line array

1 PURPOSE

As a requirement of the Marine Mammal Protection Act (MMPA) Final Rule, which specifies the regulations governing the taking of marine mammals incidental to Navy operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar (50 CFR 218 Subpart X) (NOAA, 2012), this annual report provides an unclassified summary of operations of SURTASS LFA sonar systems onboard the USNS ABLE (Tactical Auxiliary General Ocean Surveillance [T-AGOS] 20), USNS EFFECTIVE (T-AGOS 21), USNS IMPECCABLE (T-AGOS 23) (Figure 1), and USNS VICTORIOUS (T-AGOS 19) for the period 15 August 2012 through 14 August 2013. This annual report has been prepared in accordance with the requirements of the Final Rule 50 CFR § 218.236(b) (NOAA, 2012) and Condition 13(f) of the annual SURTASS LFA sonar Letters of Authorization (LOAs) issued by the National Marine Fisheries Service (NMFS) (Appendix A). The primary purpose of this annual report is to provide NMFS with an unclassified summary of the year's quarterly reports, an analysis of any MMPA Level A and/or Level B harassment or "takings" associated with the operation of SURTASS LFA sonar in the northwestern Pacific Ocean, an analysis of the effectiveness of mitigation measures, an assessment of any long-term effects, and any discernible or estimated cumulative effects. This report also provides NMFS with information necessary to demonstrate conformance to the Terms and Conditions (Paragraph 8.3) of the Biological Opinion under the Endangered Species Act (ESA) on the issuance of the LOAs (NMFS, 2012).

Figure 1. USNS IMPECCABLE (T-AGOS 23) ocean surveillance ship.

2 DESCRIPTION OF SURTASS LFA SONAR SYSTEM

The Chief of Naval Operations' (CNO) mission for SURTASS LFA sonar employment is to train Navy crews manning the vessels and to test and operate the LFA systems in as many and varied at-sea environments as possible. The Navy has determined that employment of SURTASS LFA sonar, which is the subject of NMFS' Final Rule (NOAA, 2012), includes routine training and testing as well as military operations. Furthermore, LFA activities constitute a military readiness activity as that term is defined in Public Law 107-314 (16 U.S.C. § 703 note) as those activities comprise "training and operations of the

Armed Forces that relate to combat" and "adequate and realistic testing of military equipment, vehicles, weapons and sensors for proper operation and suitability for combat use."

A complete description of the Navy's current and proposed employment of SURTASS LFA sonar may be found in the Navy's June 2012 Supplemental Environmental Impact Statement/Supplemental Overseas Environmental Impact Statement (SEIS/SOEIS) for SURTASS LFA Sonar (DoN, 2012). SURTASS LFA sonar systems are and will be operated in accordance with the geographic restrictions[1] and monitoring mitigation protocols delineated in the 2012 Navy SEIS/SOEIS, the Navy's Record of Decision (ROD) (DoD, 2012), the NMFS' MMPA Final Rule (NOAA, 2012), annual LOAs, as issued (Appendix A), and the 5-Year biological opinion (BiOp) and annual BiOp/Incidental Take Statements (ITSs) (NMFS, 2012 and 2012a).

2.1 PASSIVE SYSTEM COMPONENT: SURTASS

The passive, or listening, part of the system is SURTASS. SURTASS detects returning echoes from submerged objects, such as threat submarines, through the use of hydrophones. These devices transform mechanical energy (received acoustic sound wave) to an electrical signal that can be analyzed by the processing system of the sonar. Advances in passive acoustic technology have led to the development of the SURTASS Twin-Line (TL-29A) horizontal line array (HLA). The TL-29A consists of an array with two apertures. The array is approximately 305 meters (m) (1,000 feet [ft]) long and delivers enhanced capabilities, such as its ability to be towed in shallow water environments in the littoral zone, to provide significant directional noise rejection and to resolve bearing ambiguities without the vessel having to change course. A ship speed of at least 5.6 kilometers per hour (kph) (3 knots [kt]) is needed to tow the HLA. The return signals, which are usually below background or ambient noise level, are processed and evaluated to identify and classify potential underwater threats.

2.2 ACTIVE SYSTEM COMPONENT: LFA SONAR

The active system component, LFA, is an adjunct to the passive SURTASS detection system, and is used when passive system performance proves inadequate for detection. LFA complements SURTASS passive operations by actively acquiring and tracking target submarines when they are in quiet operating modes, measuring accurate target range, and re-acquiring lost contacts.

The LFA sonar source is a vertical line array (VLA) of up to 18 source projectors suspended beneath the vessel. The LFA source operates within the frequency range of 100 to 500 Hertz (Hz) with each individual source projector transmitting signals with a source level (SL) of approximately 215 decibels relative to 1 microPascal at a reference of 1 meter (dB re 1 µPa @ 1 m) (root mean square [rms]) or less. The typical LFA sonar signal is not transmitted as a constant tone but is instead transmitted as various waveforms that fluctuate in frequency and duration. A complete sequence of sound transmissions is referred to as a wavetrain or ping. These wavetrains have a duration between 6 and 100 seconds (sec), with an average duration of 60 sec and no more than 10 sec at any single frequency. The time between sonar wavetrain/ping transmissions is typically 6 to 15 minutes. The average duty cycle (ratio of sound "on" time to total time) is less than 20%, with a typical duty cycle, based on LFA operational parameters since 2003, ranging nominally between 7.5 to 10%.

3 REGULATORY COMPLIANCE AND LITIGATION HISTORY

During its history, a number of key regulatory and litigation events have influenced the regulations under which the Navy operates SURTASS LFA sonar. From the late 1990s through 2012, the Navy, with NMFS as a cooperating agency, prepared three environmental impact analyses for the employment of

1 Broadly, the geographic restrictions for operation of SURTASS LFA sonar include no operation of the sonar in polar waters, within 22 kilometers [km] (12 nautical miles [nmi]) of land, and in offshore biologically important areas (OBIAs) for marine mammals, of which 22 OBIAs have been designated for SURTASS LFA sonar.

References to Underwater Sound Levels

References to underwater sound pressure level (SPL) in this document are values given in decibels (dBs) and are assumed to be standardized at 1 microPascal at 1 m (dB re 1 µPa @ 1 m [rms]) for source level (SL) and dB re 1 µPa (rms) for received level (RL), unless otherwise stated (Urick, 1983; ANSI, 2006).

SURTASS LFA sonar, which are required under the National Environmental Policy Act (NEPA) and Executive Order (EO) 12114 (Environmental Effects Abroad of Major Federal Actions).

The regulations under which the Navy must operate SURTASS LFA sonar were initially published in 2002 under the MMPA Final Rule (50 CFR Part 216 Subpart Q) (NOAA, 2002). According to those regulations, NMFS issued annual LOAs for the operation of SURTASS LFA sonar on up to two surveillance vessels through 2007. An ESA section 7 consultation on the issuance of the MMPA Final Rule and the associated LOAs was completed, resulting in the issuance of the first biological opinion (BiOp) on the operation of SURTASS LFA sonar as well as subsequent annual BiOps (NMFS, 2002). NMFS issued a second 5-year Final Rule regulating the employment of SURTASS LFA sonar on up to four surveillance vessels through 2012 (NOAA, 2007) and accordingly, issued LOAs annually from 2007 through 2012. A second ESA section 7 consultation resulted in the issuance of a second BiOp and ITS, followed by annual BiOps/ITSs associated with the issued LOAs (NMFS, 2007, 2007a). In 2012, NMFS issued the third 5-year rulemaking regulations and BiOp and ITS for the operation of SURTASS LFA sonar aboard four surveillance vessels through 2017 (NOAA, 2012). This report details the activities of SURTASS LFA sonar activities during the first LOA reporting period of the current 2012 through 2017 rulemaking.

Following the release of NEPA and EO 12114 documents on the operation of SURTASS LFA sonar and NMFS' subsequent rulemaking and authorizations, several environmental non-governmental organizations (ENGOs) filed suit against the Navy and NMFS in 2002, 2007, and 2012 over the use and permitting of SURTASS LFA sonar. In 2008, the Court issued its Opinion and Order granting, in part, the Plaintiff's motion for a Preliminary Injunction and required mediation to determine the precise terms of the Preliminary Injunction. During mediation in 2008, a settlement was reached allowing SURTASS LFA sonar operations to continue in the northwestern Pacific areas stipulated in the 2003 permanent injunction, as amended in 2005, with some modifications. The Court approved the settlement, ending the litigation process, and resulting in the Stipulated Voluntary Dismissal with Prejudice in late August of 2008. The LOAs issued by NMFS from 2008 through 2012 were based on Navy operation of SURTASS LFA sonar in the 2008 stipulated mission areas.

In August 2012, several ENGOs and individuals indicated that they intended to file a legal challenge to the issuance of the 2012 Final Rule (NOAA, 2012), the Biological Opinion (NMFS, 2012), and the Navy's FSEIS/SOEIS and ROD (DoN, 2012; DoD, 2012). To allow time for mediation with the ENGOs, the Navy agreed to temporarily reinstate the 2008 geographic restrictions that were in place prior to the issuance of the 2012 Final Rule and 2012 through 2013 LOAs (i.e., prior to 15 August 2012). However, on 18 October 2012, the ENGOs and individuals filed a complaint with the U.S. District Court, Northern District of California against NMFS and the Navy on the permitting and rulemaking and NEPA/EO 12114 documentation and decision-making for SURTASS LFA sonar. On 1 February 2013, the Navy rescinded the temporary geographic restrictions for SURTASS LFA sonar operations, whereupon the vessels operated in accordance with the LOAs (Figure 2).

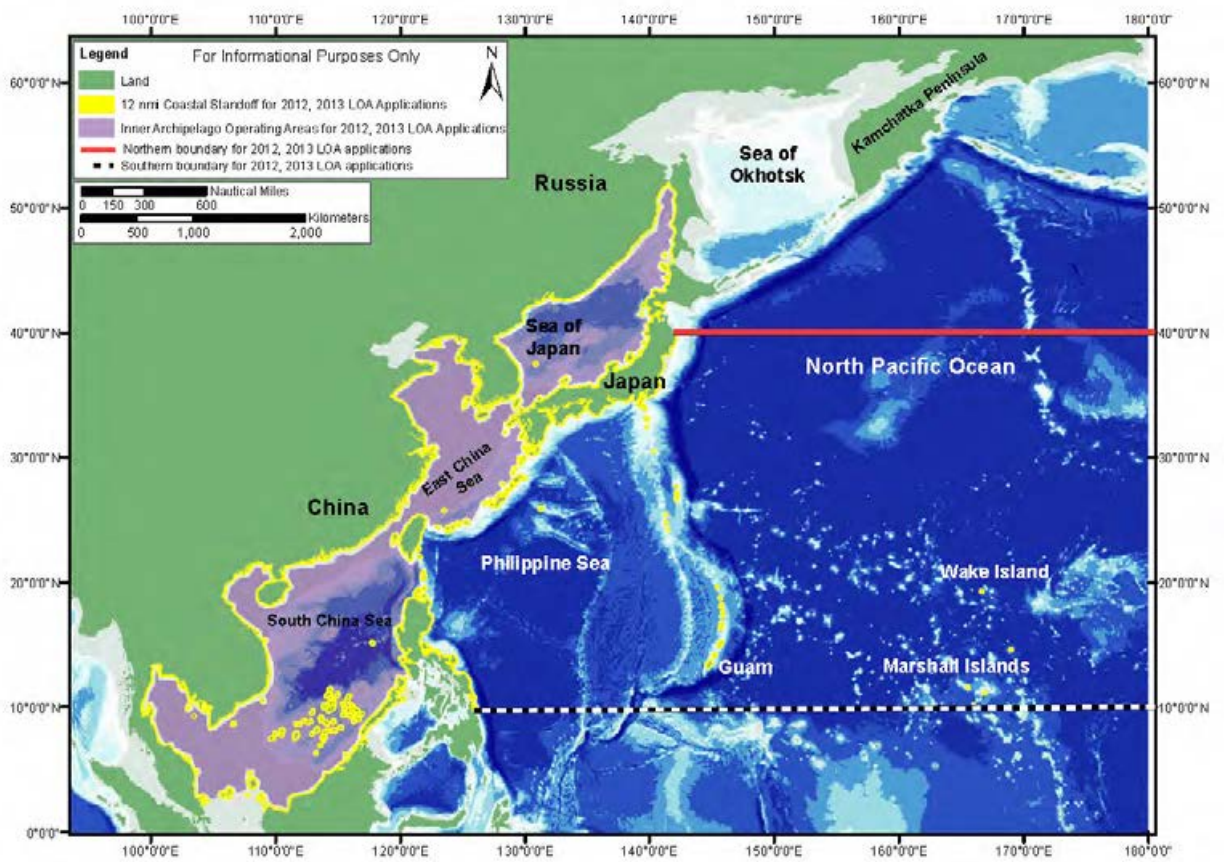

Figure 2. SURTASS LFA northwestern Pacific mission areas under the 2012 to 2013 LOAs.

3.1 CURRENT REGULATIONS

Under the NMFS 2012 Final Rule (50 CFR Part 218, Subpart X), the Navy is authorized to conduct routine SURTASS LFA sonar training, testing, and military operations in the oceanic areas of the Pacific, Atlantic, and Indian Oceans, and the Mediterranean Sea except for the standard LOA geographic restrictions (coastal standoff, offshore biologically important areas [OBIAs], known human diver locations) and non-operating area, as depicted in Figure 1-1 of the Navy's 2012 FSEIS/SOEIS (DoN, 2012). Under the LOAs issued on 15 August 2012, SURTASS LFA sonar mission areas in the northwest Pacific Ocean are encompassed by the 22 kilometers (km) (12 nautical miles [nmi]) coastal standoff from all northwest Pacific land masses with a coastline (regardless of size), including the Sea of Japan, East China Sea, and South China Sea; 40 degrees North latitude (western terminus Japan), 180 degrees East Longitude, and 10 degrees North Latitude (western terminus Philippine Islands) (Figure 2). Under these LOAs, SURTASS LFA sonar mission areas in the Hawaiian Islands areas are encompassed by the Navy's Hawaii Range Complex.

Twenty-two LFA OBIAs have been designated for marine mammals (NOAA, 2012). During military operations, SURTASS LFA sonar transmissions may exceed 180 dB re 1 µPa (rms) within the boundaries of SURTASS LFA sonar OBIAs when: 1) operationally necessary to continue tracking an existing underwater contact; or 2) operationally necessary to detect a new underwater contact within the OBIA. This exception does not apply to routine training and testing with the SURTASS LFA sonar systems. (50 CFR 218.234(g)(1) and LOA Condition 8(i).

4 MITIGATION AND MONITORING

Under the 2012 MMPA Final Rule (NOAA, 2012), NMFS issued the Navy four annual LOAs for the period 15 August 2012 to 14 August 2013 for the employment of SURTASS LFA sonar aboard the USNS ABLE, USNS EFFECTIVE, USNS IMPECCABLE, and USNS VICTORIOUS (Appendix A) for an estimated total of 20 nominal active sonar missions (16 missions in the northwestern Pacific Ocean and four missions in the Hawaii mission areas) among the four vessels (or equivalent shorter missions). Under the LOAs, LFA sonar transmissions are not to exceed 432 hours of transmit time per vessel during the annual LOA period of effectiveness.

Mitigation protocols and operational restrictions under which the Navy may operate SURTASS LFA sonar were set forth in the 2012 ROD (DoD, 2012), MMPA Final Rule (NOAA, 2012), and the LOAs (Appendix A). These protocols and restrictions were promulgated to the Navy Fleet commands by the CNO (N2/N6F24) via executive direction messages of 23 August 2012.

4.1 MITIGATION AND MONITORING REQUIREMENTS

The objective of the mitigation measures required for the employment of SURTASS LFA sonar is to minimize to the greatest extent practicable adverse impacts on marine mammal species or stocks and their habitat as well as to avoid risk of injury to marine mammals, sea turtles, and human divers. These objectives are met by ensuring the following geographic restrictions:

- Coastal waters within 22 km (12 nmi) of shore are not exposed to SURTASS LFA sonar signal received levels (RL) ≥180 dB re 1 µPa (rms) (SPL);
- No offshore OBIAs are exposed to SURTASS LFA sonar signal RLs ≥180 dB re 1 µPa (rms) (SPL) 1 km (0.54 nmi) seaward of the OBIA boundary during biologically important seasons;
- Minimizing exposure of marine mammals and sea turtles to SURTASS LFA sonar signal RLs below 180 dB re 1 µPa (rms) (SPL) by monitoring for their presence and suspending transmissions when one of these animals enters the LFA 180-dB mitigation zone or 1-km buffer zone (Figure 3);
- No known recreational or commercial dive sites are subjected to SURTASS LFA sonar signal RLs >145 dB re 1 µPa (rms) (SPL); and
- SURTASS LFA sonar operators will estimate LFA sound field RLs prior to and during operations to provide the information necessary to modify operations, including the delay or suspension of transmissions, so that the LFA sound field does not exceed RLs of 180 dB re 1 µPa (rms) and 145 dB re 1 µPa (rms).

Strict adherence to these mitigation measures are intended to minimize impacts on marine mammal and sea turtle stocks and species, as well as recreational and commercial divers.

In the 2012 MMPA Final Rule (NOAA, 2012), NMFS included an additional operational restriction by the establishment of a 1-km (0.54-nmi) buffer zone:

- Outside of the 180-dB LFA mitigation zone (Figure 5) (50 CFR § 218.234(c)); and
- Seaward of the outer perimeter of any OBIA designated in 50 CFR § 218.234(f)(2) (50 CFR § 218.238(f)(1)).

4.1.1 OFFSHORE BIOLOGICALLY IMPORTANT AREAS

OBIAs are areas of the world's oceans outside of 22 km (12 nmi) of a coastline where marine mammals aggregate in high densities; carry out biologically important activities (breeding/calving, foraging, migrating); or are areas with small, distinct populations with limited distribution. In the 2012 MMPA Final Rule, NMFS designated 22 LFA OBIAs as marine areas of critical biological importance to marine

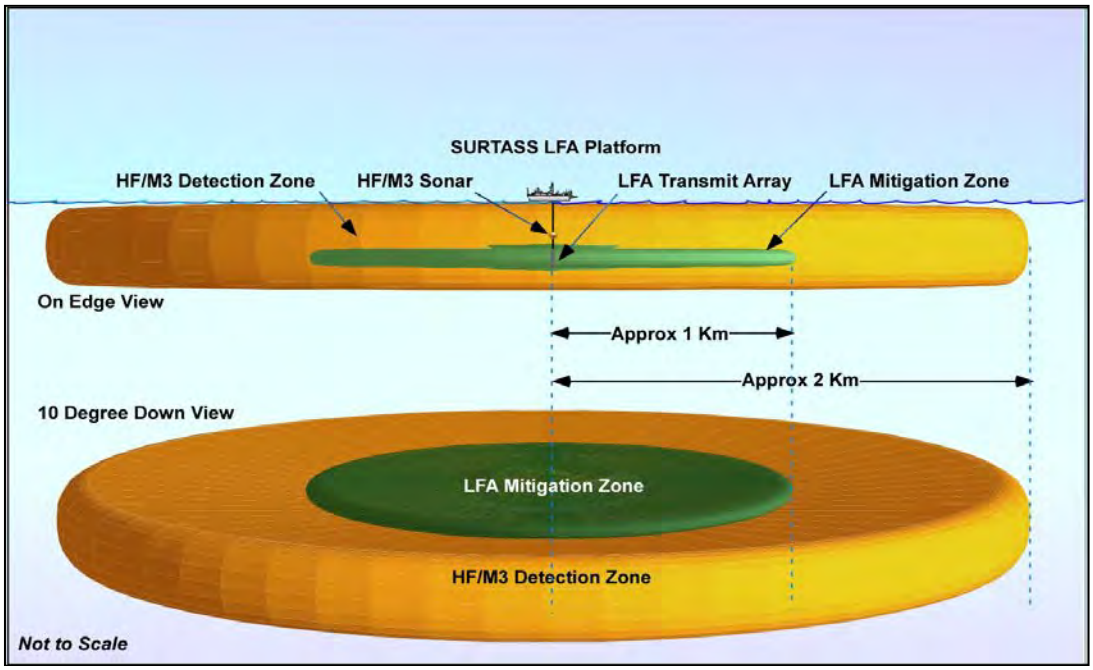

Figure 3. LFA mitigation zone (~1 km) from the SURTASS LFA transmit array as well as the detection limit of the HF/M3 sonar(~2 km), which is also the extent of the 1 km buffer zone implemented by NMFS as an additional mitigation measure.

mammals (Table 1) (NOAA, 2012). The only LFA OBIA that is within the authorized mission areas for SURTASS LFA sonar during the period encompassed in this annual report is the Hawaiian Islands Humpback Whale National Marine Sanctuary (NMS) and Penguin Bank. However, no SURTASS LFA sonar missions occurred in the Navy's Hawaii Range Complex during the period of this report.

4.1.2 SOUND FIELD MODELING

Sonar operators estimate the LFA sound field RLs (SPL) prior to and during operation of SURTASS LFA sonar to provide the information necessary to modify operations, including the delay or suspension of transmissions, so that the 180-dB and 145-dB RL sound field criteria are not exceeded in pertinent geographic areas. Sound field limits are estimated using near-real-time environmental data and underwater acoustic prediction models. These models are an integral part of the processing system for SURTASS LFA sonar. The acoustic models predict the sound field in SPLs at various distances from the SURTASS LFA sonar's location. Acoustic model updates are nominally made every 12 hours or more frequently when meteorological or oceanographic conditions change.

If the sound field criteria are exceeded, the sonar operator would notify the Officer in Charge (OIC) of the Military Detachment (MILDET), who would order the delay or suspension of transmissions. If it were predicted that the SPL would exceed the criteria within the next 12 hours, the MILDET OIC would also be notified to take the necessary action to ensure that the sound field criteria would not be exceeded.

4.1.3 MITIGATION MEASURES AND MONITORING TO PREVENT INJURY TO MARINE ANIMALS

The following monitoring to prevent injury to marine animals is required by the 2012 ROD (DoD, 2012), 2012 MMPA Final Rule (50 CFR § 218.235) (NOAA, 2012), and LOA conditions 9 and 10 (Appendix A) when employing SURTASS LFA sonar (Table 2):

Table 1. SURTASS LFA OBIAs for marine mammals and their period of effectiveness.

OBIA NUMBER	OBIA	PERIOD OF EFFECTIVENESS
1	Georges Bank	Year-round
2	Roseway Basin Right Whale Conservation Area	June through December, annually
3	Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	January 1 to November 14, annually
4	Southeastern U.S. Right Whale Seasonal Habitat	November 15 to April 15, annually
5	North Pacific Right Whale Critical Habitat	March through August, annually
6	Silver Bank and Navidad Bank	December through April, annually
7	Coastal waters of Gabon, Congo and Equatorial Guinea	June through October, annually
8	Patagonian Shelf Break	Year-round
9	Southern Right Whale Seasonal Habitat	May through December, annually
10	Central California National Marine Sanctuaries	June through November, annually
11	Antarctic Convergence	October through March, annually
12	Piltun and Chayvo Offshore Feeding Grounds in the Sea of Okhotsk	June through November, annually
13	Coastal waters off Madagascar	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales
14	Madagascar Plateau, Madagascar Ridge, and Walters Shoal	November through December, annually
15	Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	July to August, annually
16	Hawaiian Islands Humpback Whale NMS and Penguin Bank	November through April, annually
17	Costa Rica Dome	Year-round
18	Great Barrier Reef between 16° S and 21° S	May through September, annually
19	Bonney Upwelling off the southern coast of Australia	December through May, annually
20	Northern Bay of Bengal and Head of Swatch-of-No-Ground	Year-round
21	Olympic Coast NMS, The Prairie, Barkley Canyon, and Nitnat Canyon	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually
22	Abrolhos Bank	August through November, annually

Table 2. Summary of mitigation and monitoring measures required for the operation of SURTASS LFA sonar.		
MITIGATION MEASURE	**CRITERIA**	**ACTIONS**
Geographic Restrictions		
22 km (12 nmi) from coastline/island	Sound field below 180 dB re 1 µPa (rms) RL, based on SPL modeling	Delay/suspend SURTASS LFA sonar operations if sound field criterion is exceeded
OBIA during biologically important seasons	Sound field below 180 dB re 1 µPa (rms) RL, based on SPL modeling, at 1 km (0.54 nmi) seaward of outer boundaries of OBIAs	Delay/suspend SURTASS LFA sonar operations if sound field criterion is exceeded
Recreational and commercial dive sites[2]	Sound field not to exceed 145 dB re 1 µPa (rms) RL, based on SPL modeling	Delay/suspend SURTASS LFA sonar operations if sound field criterion is exceeded
Monitoring to Prevent Injury to Marine Mammals and Sea Turtles		
Visual Monitoring	Potentially affected species near the vessel but outside the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone	Notify MILDET OIC
	Potentially affected species sighted inside the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone	Delay/suspend SURTASS LFA sonar operations
Passive Acoustic Monitoring	Potentially affected species detected	Notify MILDET OIC
Active Acoustic Monitoring	Contact detected and determined to have a track that would pass within the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone	Notify MILDET OIC
	Potentially affected species detected inside the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone	Delay/suspend SURTASS LFA sonar operations

- **Visual monitoring** for marine mammals and sea turtles from the vessel bridge during daylight hours by personnel trained to detect and identify marine mammals and sea turtles;
- **Passive acoustic monitoring** using the passive low-frequency (LF) SURTASS array to listen for sounds generated by marine mammals as an indicator of their presence when SURTASS is deployed; and
- **Active acoustic monitoring** using the High Frequency Marine Mammal Monitoring (HF/M3) sonar, which is a Navy-developed, enhanced high frequency (HF) commercial sonar, to detect, locate, and

2 Recreational dive sites generally are located in coastal areas in waters ≤40 m (130 ft).

track marine mammals and, to some extent, sea turtles, that may pass close enough to the SURTASS LFA sonar's transmit array to enter the LFA mitigation and buffer zones.

Monitoring will commence at least 30 minutes (min) before the first SURTASS LFA sonar transmissions; continue between transmission pings; continue for at least 15 min after the completion of SURTASS LFA sonar transmissions, or if marine mammals are showing abnormal behavioral patterns for a period of time until those patterns return to normal or the conditions prevent continued observations.

4.1.3.1 Visual Monitoring

Visual monitoring includes daytime observations for marine mammals and sea turtles from the SURTASS LFA sonar vessel. Daytime is defined as 30 min before sunrise until 30 min after sunset. Visual monitoring begins 30 min before sunrise or 30 min before the SURTASS LFA sonar is deployed. Monitoring continues until 30 min after sunset or until the SURTASS LFA sonar is recovered. Observations are made by personnel trained in detecting and identifying marine mammals and sea turtles. Marine mammal biologists qualified in conducting at-sea marine mammal visual monitoring from surface vessels train and qualify designated ship personnel to conduct at-sea visual monitoring. The objective of these observations is to detect marine mammals (and/or sea turtles) and then maintain a track of the animal's movements to ensure that none enter the LFA mitigation zone or approach the LFA source.

The ship personnel trained in visual observation maintain a topside watch and marine mammal observation log during operations that employ SURTASS LFA sonar in the active mode. The number(s) and identification (if possible) of marine mammals sighted, as well as any unusual behavior, is entered into the log. A designated ship's officer monitors the conduct of the visual watches and periodically reviews the log entries. If marine mammals are observed by the visual observers, two possible scenarios may occur.

First, if a marine mammal is sighted outside of the LFA mitigation zone, the visual observer notifies the MILDET OIC. The MILDET OIC then notifies the HF/M3 sonar operator to determine the range and projected track of the animal. If it's estimated that the animal will travel into the LFA mitigation or buffer zone, the MILDET OIC orders the delay or suspension of SURTASS LFA sonar transmissions when the animal enters the LFA mitigation-buffer zone. The observer continues visual monitoring/recording until the animal is no longer seen. Second, if a marine mammal is sighted anywhere within the LFA mitigation-buffer zone, the observer notifies the MILDET OIC who orders the immediate delay or suspension of SURTASS LFA sonar transmissions. All sightings are recorded in the log and maintained as part of the Long Term Monitoring (LTM) Program.

4.1.3.2 Passive Acoustic Monitoring

Passive acoustic monitoring is conducted when SURTASS is deployed using the passive SURTASS towed HLA to listen for vocalizing marine mammals as an indicator of their presence. If the sound is estimated to be from a marine mammal that may be potentially affected by SURTASS LFA sonar, the sonar technician notifies the MILDET OIC, who alerts the HF/M3 sonar operator and visual observers. If marine mammal vocalizations are detected prior to or during LFA sonar transmissions, the MILDET OIC then orders the delay or suspension of SURTASS LFA sonar transmissions when the HF/M3 operator and/or visual observation indicates that the animal is within the LFA mitigation zone plus 1-km (0.54 nmi) buffer zone. All contacts are recorded in the log and are maintained as part of the LTM Program.

4.1.3.3 Active Acoustic Monitoring

HF active acoustic monitoring uses the HF/M3 sonar to detect, locate, and track marine mammals (and possibly sea turtles) that could pass close enough to the SURTASS LFA sonar array to enter the LFA mitigation zone. HF acoustic monitoring begins 30 minutes before the first SURTASS LFA sonar transmission of a given mission is scheduled to commence and continues until transmissions are terminated. Prior to full-power operations, the HF/M3 sonar power level is ramped up over a period of 5

minutes from the source level of 180 dB re 1 µPa @ 1 m (rms) (SPL) in 10-dB increments until full power (if required) is attained to ensure that there are no inadvertent exposures of local animals to RLs ≥180 dB re 1 µPa (rms) from the HF/M3 sonar. There are two potential scenarios for mitigation via active acoustic monitoring.

First, if a contact is detected outside the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone, the HF/M3 sonar operator determines the range and projected track of the animal. If it is determined that the animal will pass within the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone, the sonar operator notifies the MILDET OIC. The MILDET OIC then orders the delay or suspension of transmissions when the animal is predicted to enter the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone. Second, if a contact is detected by the HF/M3 sonar within the LFA mitigation zone plus 1-km (0.54-nmi) buffer zone, the operator notifies the MILDET OIC who orders the immediate delay or suspension of transmissions. All contacts are recorded in the log and provided as part of the LTM Program.

4.1.3.4 Resumption of SURTASS LFA Sonar Transmissions

SURTASS LFA sonar transmissions may commence/resume 15 minutes after there is no further detection by the HF/M3 sonar and no further visual observation of a marine mammal or sea turtle within the LFA mitigation and buffer zones.

5 SUMMARY OF SURTASS LFA SONAR OPERATIONS FROM 15 AUGUST 2012 TO 14 AUGUST 2013

Per 50 CFR § 218.236(b) and Condition 13(f) of the LOAs, this annual report is the unclassified summary of the quarterly reports under the first year LOAs for the USNS ABLE, USNS EFFECTIVE, USNS IMPECCABLE, and USNS VICTORIOUS for the period from 15 August 2012 through 14 August 2013. During this reporting period, 12 missions using four SURTASS LFA sonar systems were operated in the North and Western Philippine Sea and in the North Pacific Ocean offshore of Guam. Sixteen LFA missions had been authorized in the northwestern Pacific Ocean for this annual period.

This annual report details the three missions by the USNS ABLE, four missions by the USNS EFFECTIVE, two missions by the USNS IMPECCABLE, and three missions by the USNS VICTORIOUS completed during the annual reporting period (Table 3). In total during the first annual LOA reporting period, the Navy conducted 12 SURTASS LFA sonar missions that resulted in total sonar transmissions of 47.3 hours (hr). In accordance with the mitigation monitoring protocol, LFA sonar was suspended/delayed 26 times over the annual reporting period.

5.1 USNS ABLE MISSIONS

The USNS ABLE conducted three SURTASS LFA sonar missions in the North Philippine Sea during the annual LOA period. The duration of the three missions totaled 2.5 days, during which LFA sonar was transmitted for a total of 5.4 hr. No detections of marine animals were made during any of the missions nor were the sonar transmissions suspended or delayed.

5.2 USNS EFFECTIVE MISSIONS

The USNS EFFECTIVE completed two missions in the North and Western Philippine Sea and two missions offshore of Guam during this annual LOA reporting period, resulting in a total of 22.5 hr of sonar transmissions over 12.5 days. Three active acoustic (HF/M3 sonar) detections were reported with three corresponding passive acoustic detections, which were identified by the passive system as a possible Bryde's whale. Seven additional HF/M3 sonar detections were reported, six of which were identified as possible marine mammals and one was evaluated to be a system artifact due to constant range and bearing. According to protocol, LFA sonar transmissions were suspended or delayed subsequent to these 10 HF/M3 sonar detections. Transmissions of LFA sonar were suspended/delayed an additional three

Table 3. Summary of SURTASS LFA sonar operations for the reporting period, 15 August 2012 through 14 August 2013.

LFA VESSEL	MISSIONS	MISSION DURATION (DAYS)	LFA SONAR TRANSMISSIONS (HOURS)	VISUAL DETECTIONS	PASSIVE ACOUSTIC DETECTIONS	ACTIVE ACOUSTIC/ HF/M3 DETECTIONS	SUSPENSIONS/ DELAYS PER MITIGATION PROTOCOL (TOTAL DURATION OF SUSPENSION/DELAY [HRS])
USNS ABLE (T-AGOS 20)	3	2.5	5.4	0	0	0	0
USNS EFFECTIVE (T-AGOS 21)	4	12.5	22.5	0	3	10[3]	13[4] (19.1)
USNS IMPECCABLE (T-AGOS 23)	2	2.5	5.2	0	0	12[5]	12[5] (0.9)
USNS VICTORIOUS (T-AGOS 19)	3	6.9	14.2	0	0	1	1 (0.7)
TOTALS	**12**	**24.4**	**47.3**	**0**	**3**	**23**	**26 (20.7)**

3 One of the 10 HF/M3 detections was evaluated to be a system artifact due to constant range and bearing while all other HF/M3 detections were evaluated to be marine mammal detections.

4 According to protocol, LFA sonar was suspended/delayed subsequent to all 10 HF/M3 detections, even though one HF/M3 detection was evaluated to be from a HF/M3 system artifact; the other nine HF/M3 detections were evaluated to be potential marine mammals. One additional suspension of LFA sonar was due to loss of the passive acoustic system while two other suspension/delays of LFA sonar were due to HF/M3 system faults.

5 12 HF/M3 detections occurred during LFA source impedance (SI) checks and associated troubleshooting. The HF/M3 sonar remained in operation during the SI checks and troubleshooting. The 12 HF/M3 detections were classified as possible reverberation due to the lack of supporting visual and/or passive acoustic detections.

times due to the temporary loss of the passive acoustic system and twice due to HF/M3 system faults (Table 3). In total, LFA sonar transmissions were suspended or delayed a total of 19.1 hr.

5.3 USNS IMPECCABLE MISSIONS

Two missions in the North and Western Philippine Sea were completed by the USNS IMPECCABLE during this LOA reporting period. These missions encompassed 2.5 days during which LFA sonar was transmitted for a duration of 5.2 hr. During the missions, 12 HF/M3 detections occurred, which were probably due to reverberation while testing the LFA VLA. Nevertheless, according to protocol, LFA sonar transmissions were suspended/delayed 12 times for a total period of 0.9 hr.

5.4 USNS VICTORIOUS MISSIONS

During the 2012 to 2013 LOA reporting period, the USNS VICTORIOUS completed three missions in the North and Western Philippine Sea during which sonar was transmitted for 14.2 hr over 6.9 days. The one HF/M3 sonar detection was determined to be a possible marine animal with no visual or passive acoustic confirmation. In accordance with mitigation monitoring protocols, the LFA sonar transmissions were suspended/delayed one time for a duration of 0.7 hr.

5.5 VISUAL OBSERVER TRAINING

in compliance with the regulations in the MMPA Final Rule (50 CFR 216 Subpart Q) and annual LOAs, qualified on-site individuals are to conduct the mitigation, monitoring, and reporting activities. The Navy is required to have marine mammal biologists who are qualified in conducting at-sea marine mammal visual monitoring from surface vessels to train observers (lookouts) in conducting visual monitoring during active sonar operations.

The visual observer training consists of training modules that cover basic information about the marine mammals and sea turtles potentially occurring in the SURTASS LFA mission areas and their identification at sea; the fundamentals of visual observing procedures for marine mammals and sea turtles, including those if a marine mammal or sea turtle is struck or found injured, stranded, or dead; and the effective and efficient communication of observation information within the command structure. More specifically, the training includes the observation rules and conditions specified in the LOAs, cues for marine mammal presence, documenting the observed information, factors that may adversely or positively affect the ability to sight marine animals, and types of behavior. Training materials, including an electronic version of the Navy's Marine Species Awareness Training and marine mammal identification guides, are retained onboard each SURTASS LFA sonar vessel to ensure the capability for periodic refresher training of the visual observers (lookouts). Although visual observer trainings by a qualified marine mammal biologist were scheduled during this LOA period, the complexity of the required logistics precluded their occurrence. Plans for shipboard-based visual observer training for the second LOA period are now in progress.

5.6 ESTIMATES OF MARINE MAMMAL STOCKS POTENTIALLY AFFECTED

In its annual LOA applications, the Navy provided estimates of the percentage of marine mammal stocks that could potentially be affected in the biogeographic regions proposed for SURTASS LFA sonar operations, including the three mission areas in which sonar operations occurred during the annual LOAs reporting period from 2012 to 2013 (Tables 4 to 6). In this annual report, the Navy has also provided a post-operational assessment by quarter for each of the four SURTASS LFA sonar vessels and an overall annual summary (Tables 7 to 11) detailing the incidental harassment potential within the 180-dB mitigation zone and estimates of the percentages of the marine mammal stocks and number of marine mammals in each stock possibly incidentally harassed using predictive modeling based on seasons, location of operations, system characteristics, length of exposure, oceanographic/environmental conditions, and animal demographics (abundances and densities). The basis for the methodology used

Table 4. Pre-operational estimates of the marine mammal stocks potentially affected in the North Philippine Sea mission area for three SURTASS LFA sonar missions (ESA-listed species highlighted).

North Philippine Sea LFA Mission Area (3 Missions)						
Marine Mammal Species	Stock Name[6]	Number Animals in Stock	Percent Stock Affected (with Mitigation) at 120 to 180 dB	Number Animals Affected (with Mitigation) at 120 to 180 dB	Percent Stock Affected (with Mitigation) ≥180 dB	Number Animals Affected (with Mitigation) ≥180 dB
Bryde's whale	WNP	20,501	0.10	21	0.00	0
Common minke whale	WNP "O"	25,049	1.21	304	0.00	0
North Pacific right whale	WNP	922	0.02	1	0.00	0
Sperm whale	NP	102,112	0.14	143	0.00	0
Kogia spp.	WNP	350,553	0.08	281	0.00	0
Cuvier's beaked whale	WNP	90,725	0.16	146	0.00	0
Blainville's beaked whale	WNP	8,032	0.17	14	0.00	0
Ginkgo-toothed beaked whale	NP	22,799	0.06	14	0.00	0
Killer whale	WNP	12,256	0.11	14	0.00	0
False killer whale	WNP	16,668	0.64	107	0.00	0
Pygmy killer whale	WNP	30,214	0.25	76	0.00	0
Melon-headed whale	WNP	36,770	0.12	45	0.00	0
Short-finned pilot whale	WNP	53,608	1.54	826	0.00	0
Risso's dolphin	WNP	83,289	1.00	833	0.00	0
Common dolphin	WNP	3,286,163	0.05	1,644	0.00	0
Common bottlenose dolphin	WNP	168,791	0.16	271	0.00	0
Spinner dolphin	WNP	1,015,059	0.00	0	0.00	0
Pantropical spotted dolphin	WNP	438,064	0.13	570	0.00	0
Striped dolphin	WNP	570,038	0.24	1369	0.00	0
Rough-toothed dolphin	WNP	145,729	0.33	481	0.00	0
Fraser's dolphin	WNP	220,789	0.12	265	0.00	0
Pacific white-sided dolphin	WNP	931,000	0.05	466	0.00	0

6 NP = North Pacific Stock; WNP = Western North Pacific Stock; CNP = Central North Pacific

Table 5. Pre-operational estimates of the marine mammal stocks potentially affected in the West Philippine Sea operating area for three SURTASS LFA sonar missions (ESA-listed species highlighted).

West Philippine Sea LFA Mission Area (3 Missions)						
Marine Mammal Species	Stock Name[6]	Number Animals in Stock	Percent Stock Affected (with Mitigation) 120 to 180 dB	Number Animals Affected (with Mitigation) at 120 to 180 dB	Percent Stock Affected (with Mitigation) ≥180 dB	Number Animals Affected (with Mitigation) ≥180 dB
Fin whale	WNP	9,250	0.15	14	0.00	0
Bryde's whale	WNP	20,501	0.20	42	0.00	0
Common minke whale	WNP "O"	25,049	0.56	141	0.00	0
Humpback whale (winter only)	WNP	1,107	0.11	2	0.00	0
Sperm whale	NP	102,112	0.03	31	0.00	0
Kogia spp.	WNP	350,553	0.03	106	0.00	0
Cuvier's beaked whale	WNP	90,725	0.01	10	0.00	0
Blainville's beaked whale	WNP	8,032	0.24	20	0.00	0
Ginkgo-toothed beaked whale	NP	22,799	0.08	19	0.00	0
False killer whale	WNP	16,668	0.78	131	0.00	0
Pygmy killer whale	WNP	30,214	0.31	94	0.00	0
Melon-headed whale	WNP	36,770	0.15	56	0.00	0
Short-finned pilot whale	WNP	53,608	0.40	215	0.00	0
Risso's dolphin	WNP	83,289	0.69	575	0.00	0
Common dolphin	WNP	3,286,163	0.10	3,287	0.00	0
Common bottlenose dolphin	WNP	168,791	0.28	473	0.00	0
Spinner dolphin	WNP	1,015,059	0.00	0	0.00	0
Pantropical spotted dolphin	WNP	438,064	0.07	307	0.00	0
Striped dolphin	WNP	570,038	0.06	343	0.00	0
Rough-toothed dolphin	WNP	145,729	0.23	336	0.00	0
Fraser's dolphin	WNP	220,789	0.09	20	0.00	0
Pacific white-sided dolphin	WNP	931,000	0.06	559	0.00	0

Table 6. Pre-operational estimates of the marine mammal stocks potentially affected in the operating area offshore of Guam for three SURTASS LFA sonar missions (ESA-listed species highlighted).

OFFSHORE GUAM LFA MISSION AREA (3 MISSIONS)						
MARINE MAMMAL SPECIES	STOCK NAME[6]	NUMBER ANIMALS IN STOCK	PERCENT STOCK AFFECTED (WITH MITIGATION) 120 TO 180 DB	NUMBER ANIMALS AFFECTED (WITH MITIGATION) 120 TO 180 DB	PERCENT STOCK AFFECTED (WITH MITIGATION) ≥180 DB	NUMBER ANIMALS AFFECTED (WITH MITIGATION) ≥180 DB
Blue whale	CNP	9,250	0.03	3	0.00	0
Fin whale	WNP	9,250	0.11	11	0.00	0
Sei whale	NP	8,600	0.10	9	0.00	0
Bryde's whale	WNP	20,501	0.06	13	0.00	0
Common minke whale	WNP "O"	25,049	0.03	8	0.00	0
Humpback whale (winter only)	CNP	10,103	5.74	580	0.00	0
Sperm whale	NP	102,112	0.03	31	0.00	0
Kogia spp.	WNP	350,553	0.11	386	0.00	0
Cuvier's beaked whale	WNP	90,725	0.21	191	0.00	0
Blainville's beaked whale	WNP	8,032	0.44	36	0.00	0
Ginkgo-toothed beaked whale	NP	22,799	0.07	16	0.00	0
Longman's beaked whale	CNP	1,007	1.23	13	0.00	0
False killer whale	WNP	16,668	0.21	36	0.00	0
Pygmy killer whale	WNP	30,214	0.01	4	0.00	0
Melon-headed whale	WNP	36,770	0.37	137	0.00	0
Killer whale	CNP	349	1.47	6	0.00	0
Short-finned pilot whale	WNP	53,608	0.10	54	0.00	0
Risso's dolphin	WNP	83,289	0.04	34	0.00	0
Common dolphins	WNP	3,286,163	0.00	0	0.00	0
Common bottlenose dolphin	WNP	168,791	0.00	0	0.00	0
Spinner dolphin	WNP	1,015,059	0.01	102	0.00	0
Pantropical spotted dolphin	WNP	438,064	0.13	570	0.00	0
Striped dolphin	WNP	570,038	0.03	172	0.00	0
Rough-toothed dolphin	WNP	145,729	0.01	15	0.00	0
Fraser's dolphin	CNP	10,226	1.24	127	0.00	0

Table 7. Post-operational quarterly and annual estimates of the affected marine mammal stocks and number of marine mammals resulting from three LFA sonar missions by the USNS ABLE (T-20) for the LOA reporting period 15 August 2012 through 14 August 2013 (Neg = no LFA sonar transmissions during that quarter); ESA-listed marine mammals highlighted.

			120 to 180 dB (with Mitigation)										≥180 dB (with Mitigation)	
			Quarter 1 (August to November)		Quarter 2 (November to		Quarter 3 (February to May)		Quarter 4 (May to August)		Total Annual		Quarterly and Annual	
Marine Mammal Species/Species Groups	Number Animals in Stock	Stock Name	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected
Bryde's whale	20,501	WNP	0.0071	2	Neg		0.0075	2	Neg		0.0146	4	0.0000	0
Common minke whale	25,049	WNP "O"	0.0840	22	Neg		0.0891	23	Neg		0.1731	45	0.0000	0
North Pacific right whale	922	WNP	0.0011	1	Neg		0.0012	1	Neg		0.0023	2	0.0000	0
Blainville's beaked whale	8,032	WNP	0.0117	1	Neg		0.0124	1	Neg		0.0241	2	0.0000	0
Common bottlenose dolphin	168,791	WNP offshore	0.0114	20	Neg		0.0121	21	Neg		0.0235	41	0.0000	0
Common dolphins	3,286,163	WNP	0.0035	116	Neg		0.0037	123	Neg		0.0072	239	0.0000	0
Cuvier's beaked whale	90,725	WNP	0.0112	11	Neg		0.0118	11	Neg		0.0230	22	0.0000	0
False killer whale	16,668	WNP	0.0443	8	Neg		0.0470	8	Neg		0.0913	16	0.0000	0
Fraser's dolphin	220,789	WNP	0.0086	19	Neg		0.0091	21	Neg		0.0177	40	0.0000	0
Ginkgo-toothed beaked whale	22,799	NP	0.0041	1	Neg		0.0044	1	Neg		0.0085	2	0.0000	0
Killer whale	12,256	WNP	0.0079	1	Neg		0.0084	2	Neg		0.0163	3	0.0000	0
Kogia spp.	350,553	WNP	0.0055	20	Neg		0.0059	21	Neg		0.0114	41	0.0000	0
Melon-headed whale	36,770	WNP	0.0083	4	Neg		0.0088	4	Neg		0.0171	8	0.0000	0
Pacific white-sided dolphin	931,000	WNP	0.0037	35	Neg		0.0039	37	Neg		0.0076	72	0.0000	0
Pantropical spotted dolphin	438,064	WNP	0.0090	40	Neg		0.0095	42	Neg		0.0185	82	0.0000	0
Pygmy killer whale	30,214	WNP	0.0177	6	Neg		0.0188	6	Neg		0.0365	12	0.0000	0
Risso's dolphin	83,289	WNP	0.0697	59	Neg		0.0739	62	Neg		0.1436	121	0.0000	0
Rough-toothed dolphin	145,729	WNP	0.0232	34	Neg		0.0246	36	Neg		0.0478	70	0.0000	0
Short-finned pilot whale	53,608	WNP	0.1072	58	Neg		0.1138	61	Neg		0.2210	119	0.0000	0
Sperm whale	102,112	NP	0.0095	10	Neg		0.0101	11	Neg		0.0196	21	0.0000	0
Spinner dolphin	1,015,059	WNP	0.0001	2	Neg		0.0001	2	Neg		0.0002	4	0.0000	0
Striped dolphin	570,038	WNP	0.0165	95	Neg		0.0175	100	Neg		0.0340	195	0.0000	0

Table 8. Post-operational quarterly and annual estimates of the affected marine mammal stocks and number of marine mammals resulting from four LFA sonar missions by the USNS EFFECTIVE (T-21) for the LOA reporting period 15 August 2012 through 14 August 2013 (Neg = no LFA sonar transmissions that quarter; NA = not applicable); ESA-listed marine mammals highlighted.

			120 to 180 dB (with Mitigation)										≥180 dB (with Mitigation)	
			Quarter 1 (August to November)		Quarter 2 (November to February)		Quarter 3 (February to May)		Quarter 4 (May to August)		Total Annual		Total for Quarter and Annual	
Marine Mammal Species/Species Groups	Number Animals in Stock	Stock Name	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected
Blue whale	9,250	CNP	0.0132	2	NA		NA		Neg		0.0132	2	0.0000	0
Bryde's whale	20,501	WNP	0.0249	6	0.0254	6	0.0042	1	Neg		0.0545	13	0.0000	0
Common minke whale	25,049	WNP "O"	0.0133	4	0.0731	19	0.0495	13	Neg		0.1359	36	0.0000	0
Fin whale	9,250	WNP	0.0450	5	0.0191	2	NA		Neg		0.0641	7	0.0000	0
Humpback whale	1,107	WNP	0.0000	0	0.0033	1	NA		Neg		0.0033	1	0.0000	0
North Pacific right whale	922	WNP	NA		NA		0.0007	1	Neg		0.0007	1	0.0000	0
Sei whale	8,600	NP	0.0420	4	NA		NA		Neg		0.0420	4	0.0000	0
Blainville's beaked whale	8,032	WNP	0.184	15	0.031	3	0.0069	1	Neg		0.2219	19	0.0000	0
Common bottlenose dolphin	168,791	WNP offshore	0.0011	2	0.0361	61	0.0067	12	Neg		0.0439	75	0.0000	0
Common dolphins	3,286,163	WNP	0.0008	26	0.0126	426	0.0021	6	Neg		0.0155	458	0.0000	0
Cuvier's beaked whale	90,725	WNP	0.0863	79	0.0016	2	0.0066	6	Neg		0.0945	87	0.0000	0
False killer whale	16,668	WNP	0.0560	10	0.1015	17	0.0261	5	Neg		0.1836	32	0.0000	0
Fraser's dolphin	10,226	Hawaii	0.4809	50	NA				Neg		0.4809	50	0.0000	0
Fraser's dolphin	220,789	WNP	NA		0.0110	25	0.0051	12	Neg		0.0161	37	0.0000	0
Ginkgo-toothed beaked whale	22,799	NP	0.0277	7	0.0109	3	0.0024	1	Neg		0.0410	11	0.0000	0
Killer whale	349	Hawaii	0.5563	2	NA		NA		Neg		0.5563	2	0.0000	0
Killer whale	12,256	WNP	NA		NA		0.0047	1	Neg		0.0047	1	0.0000	0
Kogia spp.	350,553	WNP	0.0401	141	0.0039	14	0.0033	12	Neg		0.0473	167	0.0000	0
Longman's beaked whale	1,007	CNP	0.5144	6	NA		NA		Neg		0.5144	6	0.0000	0
Melon-headed whale	36,770	WNP	0.0979	36	0.0190	7	0.0049	2	Neg		0.1218	45	0.0000	0
Pacific white-sided dolphin	931,000	WNP	NA		0.0082	77	0.0022	21	Neg		0.0104	98	0.0000	0
Pantropical spotted dolphin	438,064	WNP	0.0530	233	0.0090	40	0.0053	24	Neg		0.0673	297	0.0000	0
Pygmy killer whale	30,214	WNP	0.0039	2	0.0405	13	0.0104	4	Neg		0.0548	19	0.0000	0
Risso's dolphin	83,289	WNP	0.0159	14	0.0888	74	0.0410	35	Neg		0.1457	123	0.0000	0
Rough-toothed dolphin	145,729	WNP	0.0026	4	0.0299	44	0.0136	20	Neg		0.0461	68	0.0000	0
Short-finned pilot whale	53,608	WNP	0.0261	14	0.0524	29	0.0632	34	Neg		0.1417	77	0.0000	0
Sperm whale	102,112	NP	0.0132	14	0.0041	5	0.0056	6	Neg		0.0229	25	0.0000	0
Spinner dolphin	1,015,059	WNP	0.0032	33	0.0001	2	0.0001	1	Neg		0.0034	36	0.0000	0
Striped dolphin	570,038	WNP	0.0111	64	0.0082	48	0.0097	56	Neg		0.0290	168	0.0000	0

Table 9. Post-operational quarterly and annual estimates of the affected marine mammal stocks and number of marine mammals resulting from two LFA sonar missions by the USNS IMPECCABLE (T-23) for the LOA reporting period 15 August 2012 through 14 August 2013 (NA = not applicable, Neg = no LFA sonar transmissions this quarter) ; ESA-listed marine mammals highlighted.

			120 to 180 dB (with Mitigation)										≥180 dB (with Mitigation)	
			Quarter 1 (August to November)		Quarter 2 (November to February)		Quarter 3 (February to May)		Quarter 4 (May to August)		Total Annual		Total for Quarter and Annual	
Marine Mammal Species/Species Groups	Number Animals in Stock	Stock Name[3]	Percent Affected Stock	Number Affected Animals	Percent Affected Stock	Number Affected Animals	Percent Affected Stock	Number Affected Animals	Percent Affected Stock	Number Affected Animals	Percent Affected Stock	Number Affected Animals	Percent Affected Stock	Number Affected Animals
Bryde's whale	20,501	WNP	Neg		0.0228	5	0.0022	1	Neg		0.025	6	0.0000	0
Common minke whale	25,049	WNP "O"	Neg		0.0656	17	0.0265	7	Neg		0.0921	24	0.0000	0
Fin whale	9,250	WNP	Neg		0.0172	2	NA		Neg		0.0172	2	0.0000	0
Humpback whale	1,107	WNP	Neg		0.003	1	NA		Neg		0.003	1	0.0000	0
North Pacific right whale	922	WNP	Neg		NA		0.0004	1	Neg		0.0004	1	0.0000	0
Blainville's beaked whale	8,032	WNP	Neg		0.0278	3	0.0037	1	Neg		0.0315	4	0.0000	0
Common bottlenose dolphin	168,791	WNP offshore	Neg		0.0324	55	0.0036	7	Neg		0.036	62	0.0000	0
Common dolphins	3,286,163	WNP	Neg		0.0113	373	0.0011	37	Neg		0.0124	410	0.0000	0
Cuvier's beaked whale	90,725	WNP	Neg		0.0015	2	0.0035	4	Neg		0.005	6	0.0000	0
False killer whale	16,668	WNP	Neg		0.0911	16	0.0140	3	Neg		0.1051	19	0.0000	0
Fraser's dolphin	220,789	WNP	Neg		0.0099	22	0.0027	6	Neg		0.0126	28	0.0000	0
Ginkgo-toothed beaked whale	22,799	NP	Neg		0.0098	3	0.0013	1	Neg		0.0111	4	0.0000	0
Killer whale	12,256	WNP	Neg		NA		0.0025	1	Neg		0.0025	1	0.0000	0
Kogia spp	350,553	WNP	Neg		0.0035	13	0.0017	7	Neg		0.0052	20	0.0000	0
Melon-headed whale	36,770	WNP	Neg		0.0171	7	0.0026	1	Neg		0.0197	8	0.0000	0
Pacific white-sided dolphin	931,000	WNP	Neg		0.0074	69	0.0012	11	Neg		0.0086	80	0.0000	0
Pantropical spotted dolphin	438,064	WNP	Neg		0.008	36	0.0028	13	Neg		0.0108	49	0.0000	0
Pygmy killer whale	30,214	WNP	Neg		0.0364	11	0.0056	2	Neg		0.042	13	0.0000	0
Risso's dolphin	83,289	WNP	Neg		0.0798	67	0.0220	19	Neg		0.1018	86	0.0000	0
Rough-toothed dolphin	145,729	WNP	Neg		0.0269	40	0.0073	11	Neg		0.0342	51	0.0000	0
Short-finned pilot whale	53,608	WNP	Neg		0.0471	26	0.0338	19	Neg		0.0809	45	0.0000	0
Sperm whale	102,112	NP	Neg		0.0037	4	0.0030	4	Neg		0.0067	8	0.0000	0
Spinner dolphin	1,015,059	WNP	Neg		0.0001	2	0.0000	1	Neg		0.0001	3	0.0000	0
Striped dolphin	570,038	WNP	Neg		0.0074	43	0.0052	30	Neg		0.0126	73	0.0000	0

Table 10. Post-operational quarterly and annual estimates of the affected marine mammal stocks and number of marine mammals resulting from three LFA sonar missions by the USNS VICTORIOUS (T-19) for the LOA reporting period 15 August 2012 through 14 August 2013 (NA = not applicable, Neg = no LFA sonar transmissions this quarter) ; ESA-listed marine mammals highlighted.

			120 to 180 dB (with Mitigation)										≥180 dB (with Mitigation)	
			Quarter 1 (August to November)		Quarter 2 (November to February)		Quarter 3 (February to May)		Quarter 4 (May to August)		Total Annual		Total for Quarter and Annual	
Marine Mammal Species/Species Groups	Number Marine Mammals in Stock	Stock Name[3]	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected
Bryde's whale	20,501	WNP	Neg		0.0057	2	0.0629	14	Neg		0.0686	16	0.0000	0
Common minke whale	25,049	WNP "O"	Neg		0.0164	5	0.2254	57	Neg		0.2418	62	0.0000	0
Fin whale	9,250	WNP	Neg		0.0043	1	0.0437	5	Neg		0.0480	6	0.0000	0
Humpback whale	1,107	WNP	Neg		0.0008	1	0.0076	1	Neg		0.0084	2	0.0000	0
North Pacific right whale	922	WNP	Neg		NA		0.0008	1	Neg		0.0008	1	0.0000	0
Blainville's beaked whale	8,032	WNP	Neg		0.0070	1	0.0789	7	Neg		0.0859	8	0.0000	0
Common bottlenose dolphin	168,791	WNP offshore	Neg		0.0081	14	0.0903	153	Neg		0.0984	167	0.0000	0
Common dolphins	3,286,163	WNP	Neg		0.0028	94	0.0313	1030	Neg		0.0341	1124	0.0000	0
Cuvier's beaked whale	90,725	WNP	Neg		0.0004	1	0.0115	12	Neg		0.0119	13	0.0000	0
False killer whale	16,668	WNP	Neg		0.0228	4	0.2626	45	Neg		0.2854	49	0.0000	0
Fraser's dolphin	220,789	WNP	Neg		0.0025	6	0.0312	70	Neg		0.0337	76	0.0000	0
Ginkgo-toothed beaked whale	22,799	NP	Neg		0.0025	1	0.0278	7	Neg		0.0303	8	0.0000	0
Killer whale	12,256	WNP	Neg		NA		0.0055	1	Neg		0.0055	1	0.0000	0
Kogia spp.	350,553	WNP	Neg		0.0009	4	0.0127	45	Neg		0.0136	49	0.0000	0
Melon-headed whale	36,770	WNP	Neg		0.0043	2	0.0493	19	Neg		0.0536	21	0.0000	0
Pacific white-sided dolphin	931,000	WNP	Neg		0.0018	18	0.0213	199	Neg		0.0231	217	0.0000	0
Pantropical spotted dolphin	438,064	WNP	Neg		0.002	9	0.0267	118	Neg		0.0287	127	0.0000	0
Pygmy killer whale	30,214	WNP	Neg		0.0091	3	0.1049	32	Neg		0.1140	35	0.0000	0
Risso's dolphin	83,289	WNP	Neg		0.0199	17	0.2513	210	Neg		0.2712	227	0.0000	0
Rough-toothed dolphin	145,729	WNP	Neg		0.0067	10	0.0844	124	Neg		0.0911	134	0.0000	0
Short-finned pilot whale	53,608	WNP	Neg		0.0118	7	0.1943	105	Neg		0.2061	112	0.0000	0
Sperm whale	102,112	NP	Neg		0.0009	1	0.0159	17	Neg		0.0168	18	0.0000	0
Spinner dolphin	1,015,059	WNP	Neg		0.0000	1	0.0004	5	Neg		0.0004	6	0.0000	0
Striped dolphin	570,038	WNP	Neg		0.0019	11	0.0303	174	Neg		0.0322	185	0.0000	0

Table 11. Summary of annual post-operational affected percent of marine mammal stocks and number of marine mammals resulting from 12 LFA sonar missions by all SURTASS LFA sonar vessels for the LOA reporting period 15 August 2012 through 14 August 2013 (Neg = no LFA sonar transmissions; NA = not applicable); ESA-listed marine mammal species highlighted.

All Affected Marine Mammal Species/Species Groups	Number Marine Mammals in Stock	Stock Name[3]	120 to 180 dB (with Mitigation)										≥180 dB (with Mitigation)	
			Quarter 1 (August to November) All Vessels		Quarter 2 (November to February) All		Quarter 3 (February to May) All Vessels		Quarter 4 (May to August) All Vessels		Annual, All Vessels		Annual, All Vessels	
			Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected	Percent Stock Affected	Number Animals Affected
Blue whale	9,250	CNP	0.0132	2	NA		NA		Neg		0.0132	2	0.0000	0
Bryde's whale	20,501	WNP	0.0320	8	0.0539	13	0.0768	18	Neg		0.1627	39	0.0000	0
Common minke whale	25,049	WNP "O"	0.0973	26	0.1551	41	0.3905	100	Neg		0.6429	167	0.0000	0
Fin whale	9,250	WNP	0.0450	5	0.0406	5	0.0437	5	Neg		0.1293	15	0.0000	0
Humpback whale	1,107	WNP	0.0000	0	0.0071	3	0.0076	1	Neg		0.0147	4	0.0000	0
North Pacific right whale	922	WNP	0.0011	1	NA		0.0031	4	Neg		0.0042	5	0.0000	0
Sei whale	8,600	NP	0.0420	4	NA		NA		Neg		0.0420	4	0.0000	0
Blainville's beaked whale	8,032	WNP	0.1957	16	0.0658	7	0.1019	10	Neg		0.3634	33	0.0000	0
Common bottlenose dolphin	168,791	WNP offshore	0.0125	22	0.0766	130	0.1127	193	Neg		0.2018	345	0.0000	0
Common dolphins	3,286,163	WNP	0.0043	142	0.0267	893	0.0382	1196	Neg		0.0692	2,231	0.0000	0
Cuvier's beaked whale	90,725	WNP	0.0975	90	0.0035	5	0.0334	33	Neg		0.1344	128	0.0000	0
False killer whale	16,668	WNP	0.1003	18	0.2154	37	0.3497	61	Neg		0.6654	116	0.0000	0
Fraser's dolphin	10,226	Hawaii	0.4970	87	NA		NA		Neg		0.4970	87	0.0000	0
Fraser's dolphin	220,789	WNP	0.0086	19	0.0234	53	0.0481	109	Neg		0.0640	144	0.0000	0
Ginkgo-toothed beaked whale	22,799	NP	0.0318	8	0.0232	7	0.0359	10	Neg		0.0909	25	0.0000	0
Killer whale	329	Hawaii	0.5563	2	NA		NA		Neg		0.5610	3	0.0000	0
Killer whale	12,256	WNP	0.0079	1	NA		0.0211	5	Neg		0.0290	5	0.0000	0
Kogia spp.	350,553	WNP	0.0456	161	0.0083	31	0.0236	85	Neg		0.0775	277	0.0000	0
Longman's beaked whale	1,007	CNP	0.5144	6	NA		NA		Neg		0.5144	6	0.0000	0
Melon-headed whale	36,770	WNP	0.1062	40	0.0404	16	0.0656	26	Neg		0.2122	82	0.0000	0
Pacific white-sided dolphin	931,000	WNP	0.0037	35	0.0174	164	0.0286	268	Neg		0.0497	467	0.0000	0
Pantropical spotted dolphin	438,064	WNP	0.062	273	0.0190	85	0.0443	197	Neg		0.1253	555	0.0000	0
Pygmy killer whale	30,214	WNP	0.0216	8	0.0860	27	0.1397	44	Neg		0.2473	79	0.0000	0
Risso's dolphin	83,289	WNP	0.0856	73	0.1885	158	0.3882	326	Neg		0.6623	557	0.0000	0
Rough-toothed dolphin	145,729	WNP	0.0258	38	0.0635	94	0.1299	191	Neg		0.2192	323	0.0000	0
Short-finned pilot whale	53,608	WNP	0.1333	72	0.1113	62	0.4051	219	Neg		0.6497	353	0.0000	0
Sperm whale	102,112	NP	0.0227	24	0.0087	10	0.0346	38	Neg		0.0660	72	0.0000	0
Spinner dolphin	1,015,059	WNP	0.0033	35	0.0002	5	0.0006	9	Neg		0.0041	49	0.0000	0
Striped dolphin	570,038	WNP	0.0276	159	0.0175	102	0.0627	360	Neg		0.1078	621	0.0000	0

for the acoustic modeling that analyzed risk and predicted the incidental harassment estimates detailed herein may be found in the SURTASS LFA sonar Final SEIS/SOEIS (DoN, 2012).

5.6.1 PRE-OPERATIONAL ESTIMATES OF POTENTIALLY AFFECTED MARINE MAMMAL STOCKS

Overall planning for operations during the annual period of the LOAs was based on the determination of the best operational sites and seasons that would have the least potential for impacts on marine mammals while meeting the Navy's operational requirements. Potential mission sites within each mission area were then analyzed with regard to spatial and temporal factors and operational requirements for SURTASS LFA sonar. Marine mammal density and stock/abundance estimates were then derived for the proposed mission areas requested in the 2012 LOA application (DoN, 2012a).

Analyses for pre-operational estimates were performed at the nominal potential mission areas and provided a conservative estimate of the potential for effects on marine mammal stocks in those areas where operations were proposed in the Navy's 2012 LOA application (DoN, 2012a). These estimates were based on seven-day missions.

During the annual period of this report, the Navy conducted missions using SURTASS LFA sonar in the North and Western Philippine Sea and the North Pacific Ocean offshore of Guam for which pre-operational risk estimates of marine mammal stocks had been estimated (Tables 4 to 6) (DoN, 2012a). The pre-operational estimates of MMPA harassment (i.e., 120 to 180 dB and ≥180 dB, MMPA Level A and B, respectively) for marine mammal stocks in these LFA mission areas were well below the criteria delineated by NMFS in LOA Condition 8(j) (Appendix A) and the Final Rule (77 FR 50290) (NOAA, 2012).

5.6.2 POST-OPERATIONAL ESTIMATES OF POTENTIALLY AFFECTED MARINE MAMMAL STOCKS

Upon completion of SURTASS LFA sonar missions under the 2012 to 2013 LOAs, the estimates of marine mammals potentially affected both within and outside the 180-dB mitigation zone as a result of the LFA sonar transmitting 47.3 hr (Table 3) were refined and submitted to NMFS under the quarterly reporting requirements of the MMPA Final Rule (50 CFR § 218.236(a)) and condition 13(e) of the LOAs (Tables 7 to 10). Post-operational affected stock estimates were based on actual LFA sonar transmission hours and oceanographic conditions, whereas the pre-operational estimates were based on projected operations over the course of each annual LOA; the same analysis and modeling methodology was utilized to compute both estimates. The density and abundance estimates of the potentially affected marine mammal stocks in the three mission areas in which LFA sonar was transmitted during this LOA reporting period were derived using the best available published data and information (Appendix B; DoN, 2012, 2012a).

The highest total percentage of marine mammal stocks estimated to be affected by SURTASS LFA sonar transmissions (120 to 180 dB, with mitigation) from all vessels during the annual LOA reporting period was 0.6654% of the Western North Pacific stock of false killer whales while the highest percentage of affected ESA-listed marine mammal stocks was estimated at 0.1293% for the Western North Pacific stock of fin whales (Table 11). The highest number of any marine mammal stock estimated to be affected by SURTASS LFA sonar transmissions (120 to 180 dB, with mitigation) from all vessels during the annual LOA period was 2,231 common dolphins (Table 11). The percentage and number of animals in any marine mammal stocks affected by LFA sonar transmissions at ≥180 dB (with mitigation) from all vessels during the annual reporting period were 0% and 0 marine mammals, respectively.

5.6.3 SUMMARY OF AFFECTED MARINE MAMMAL SPECIES AND STOCKS

The post-operational incidental harassment estimates (Tables 7 through 11) indicate that there were no marine mammal exposures to received levels at or above 180 dB. The highest overall percentage of any marine mammal stock exposed at RLs of 120 to 180 dB (with mitigation) from all SURTASS LFA vessels for the annual LOA reporting period was estimated as 0.6654% for the Western North Pacific stock of false killer whales (Table 11). The post-operational estimates are, therefore, significantly below the 12%

allowed for any marine mammal stock under LOA Condition 8(j) and the Final Rule (77 FR 50290) (NOAA, 2012). These results are supported by the results from the visual, passive acoustic, and active acoustic monitoring effort already discussed. In addition, no marine mammal stranding events associated with the times and locations of SURTASS LFA sonar operations were reported during the annual LOA period. Last, no apparent avoidance reactions or acute effects to threatened or endangered species were observed in response to exposure from SURTASS LFA sonar transmissions.

5.7 MITIGATION EFFECTIVENESS

LOA Condition 13(f)(iii) requires an analysis of the effectiveness of the mitigation measures associated with the authorized operation of SURTASS LFA sonar with recommendations for improvement where applicable. During SURTASS LFA sonar transmissions, the minimum radial distance of the LFA mitigation zone was predictably 1 km (0.54 nmi), which in combination with the buffer zone, resulted in an effective 2-km (1.08-nmi) monitoring radius around the LFA vessels.

Although visual observers have been trained in accordance with Condition 9(a)(i) of the LOAs and were posted as specified in LOA Condition 9(a)(iii) and CNO executive directive during LFA sonar transmissions, no visual detections of marine mammals or sea turtles resulted from these efforts. The embarked MILDET and system engineers monitored the SURTASS passive sonar system for marine mammal vocalizations as specified in LOA Condition 9(b). The HF/M3 sonar systems were operated continuously during LFA transmissions in accordance with MMPA Final Rule requirements and LOA Conditions 8(e) and 9(c) (Appendix A). Three active acoustic (HF/M3 sonar) detections were reported with three corresponding passive acoustic detections, which were identified by the passive system as a possible Bryde's whale. The employment of the HF/M3 sonar during LFA transmissions during this reporting period resulted in an additional 20 active acoustic detections during the missions of the USNS EFFECTIVE, USNS IMPECCABLE, and USNS VICTORIOUS. No visual or passive confirmation of these detections was reported. Of these 20 detections, seven were evaluated as possible marine animals, one was considered to be an artifact because of constant range and bearing, and 12 were probably due to reverberation while testing the LFA VLA. According to operating protocol, LFA sonar transmissions were suspended 23 times for passive and active (HF/M3) detections.

During the LOA reporting period from 15 August 2012 through 14 August 2013, all mitigation monitoring measures required by the LOAs, MMPA Final Rule, and CNO directives were strictly adhered to and conducted in accordance with the protocols specified in those requirements. This strict adherence to the required mitigation monitoring measures minimized impacts on marine mammal stocks and species (in addition to sea turtle stocks and human divers). In examining the results of the mitigation monitoring procedures during this annual LOA reporting period in addition to the results of the previous ten years of SURTASS LFA sonar operations, the Navy has concluded that the mitigation monitoring measures have been implemented properly, and accordingly, have successfully minimized the potential effects of SURTASS LFA sonar to marine mammals. This conclusion is supported by documentation that no known mortality or injury to marine mammals stocks have occurred over this period.

In the 2001 FOEIS/EIS (DoN, 2001), the Navy estimated that the probability of detection for visual and passive acoustic monitoring was low, with predicted probabilities of 9% and 25%, respectively; however, detection effectiveness of the active acoustic monitoring (HF/M3) was demonstrated to be 95%. The three mitigation monitoring measures used together result in a predicted effectiveness nearing 100% within the 180-dB LFA mitigation zone (DoN, 2007 and 2011). Hence, the Navy proposes no recommendations for improvements to the mitigation monitoring measures.

5.8 ASSESSMENT OF LONG-TERM EFFECTS AND ESTIMATED CUMULATIVE IMPACTS

Since the incidental harassments that occurred during this LOA reporting period are consistent with those projected in the relevant NEPA documentation on SURTASS LFA Sonar (i.e., the 2012 DoN

FSEIS/SOEIS) and supporting documentation, the Navy's assessment of the long-term effects and estimated cumulative impacts from employment of SURTASS LFA sonar over this LOA reporting period also remain consistent. The four SURTASS LFA sonar systems do not add appreciably to the underwater sounds to which marine mammal stocks are exposed, SURTASS LFA sonar will cause no lethal takes of marine mammals, and the cumulative effects from the operation of up to four SURTASS LFA sonar systems are not a reasonably foreseeable significant adverse impact on marine mammals.

6 LONG TERM MONITORING AND RESEARCH

6.1 REPORTING REQUIREMENTS

The first component of the LTM Program for SURTASS LFA sonar consists of NMFS-directed reporting required under the MMPA Final Rule and annual LOAs. These reports provide information for assessments of whether incidental harassment of marine mammals occurred within the SURTASS LFA mitigation zone during operations, based upon data from the mitigation monitoring (visual, passive acoustic, active acoustic) records. Data analysis from the LTM Program and post-operation acoustic information are utilized to estimate the percent of marine mammal stocks potentially exposed to SURTASS LFA signals at ≥180 dB (RL) and <180 dB re 1 µPa (rms) (RL).

During routine training, testing, and military operations of SURTASS LFA sonar, technical and environmental data are collected and recorded, including data from visual and acoustic monitoring, ocean environmental measurements, and technical operational inputs. As part of the LTM Program and as stipulated in the MMPA Final Rule and LOAs, quarterly, annual, and comprehensive reports are required:

- Quarterly mission reports are submitted to NMFS for each SURTASS LFA sonar vessel, including all active-mode missions, 30 days after the end of each quarter beginning on the date the LOA's effectiveness. The quarterly reports consist of separate classified and unclassified sections.
- Annual reports are submitted to NMFS 45 days after the expiration of the LOAs and are unclassified summaries of the annual quarterly reports and include the Navy's estimates of the percentage of marine mammal stocks affected by SURTASS LFA sonar operations.
- A final comprehensive report, which is an unclassified assessment of any impacts of SURTASS LFA sonar on marine mammal stocks during the 5-year period of the MMPA regulations, is submitted to NMFS and the public at least 240 days prior to expiration of the MMPA Final Rule regulations.

6.2 INCIDENT MONITORING

The Navy monitors and reviews data on strandings from the media as well as Federal, state, and international organizations. Only one significant stranding event occurred in the western North Pacific Ocean (southern Yellow Sea) during the annual LOA period. However, this stranding event did not coincide spatially and/or temporally with active operations of the SURTASS LFA sonar vessels. Further, no dead, injured, or stranded marine mammals were reported by any of the SURTASS LFA sonar vessels during their annual missions.

6.3 RESEARCH

Provisions in the MMPA Final Rule (NOAA, 2012) on the taking of marine mammals incidental to operation of SURTASS LFA sonar require the Navy to conduct research on how marine mammals (including harbor porpoises [*Phocoena phocoena*] and beaked whales [*Mesoplodon spp.*]) respond to SURTASS LFA sonar signals and to conduct research on marine mammal vocalizations before, during, and after designated exercises with SURTASS LFA sonar. Additionally, the LOAs for SURTASS LFA sonar also include conditions related to increasing knowledge of the affected marine mammal species. Conditions 12a, 12b, and 12d relate to research that is to be conducted by the Navy, specifically to respectively assess types of research and monitoring to improve the understanding of the potential effects of low frequency active sonar transmissions on beaked whales and/or harbor porpoises, to

Table 12. Research and monitoring requirements relevant to SURTASS LFA sonar and their current status.

RESEARCH AND MONITORING REQUIREMENTS	CURRENT STATUS OF RESEARCH AND MONITORING REQUIREMENTS
Effects on Beaked Whale and Harbor Porpoise Convene a Scientific Advisory Group (SAG) to analyze different types of monitoring/research that could increase the understanding of the potential effects of low frequency active sonar transmissions on beaked whales and/or harbor porpoises and draft a plan of action outlining a strategy for implementing the SAG recommendations	The Navy convened the six-member independent SAG on 13 to 14 March 2013 to assess behavioral effects of the SURTASS-LFA/CLFA sonar systems on harbor porpoises and beaked whales and to consider various scientific and monitoring tools to gather more information and to make specific recommendations about the feasibility, efficacy, and anticipated significance of proposed research projects. Following the meeting, the SAG produced a report detailing their recommendations, and the report was submitted to the members of the Executive Oversight Group (EOG) on 6 August 2013. The Navy will convene a meeting of the EOG by the end of 2013; the EOG will be responsible for drafting an action plan to execute the most feasible of the SAG research recommendations. The Navy will meet with NMFS in early 2014 to discuss the implementation of the research strategy, pending funding availability.
Injured/Disabled Marine Animals Systematically observe SURTASS LFA sonar operations for injured or disabled marine mammals	This monitoring is ongoing based on the mitigation and reporting requirements under the 2012 MMPA Final Rule. Post-operational incidental harassment assessments demonstrated that there were no known marine mammal exposures to RLs at or above 180 dB, which may have resulted in MMPA Level A harassment to marine mammals. These findings are supported by the results from the visual, passive acoustic, and active acoustic monitoring efforts. In addition, a review of recent marine mammal strandings did not indicate any stranding events associated with the times and locations of SURTASS LFA sonar operations nor were any injured or disabled marine mammals observed at sea by any SURTASS LFA sonar vessel.
Mitigation Effectiveness Analyze the effectiveness of the three forms of mitigation (visual, passive acoustic monitoring, HF/M3 sonar) and provide recommendations for improvements where applicable	A summary of mitigation effectiveness under the current LOAs reporting period is provided in this report and a summary of the mitigation effectiveness over the complete period of SURTASS LFA sonar operation was provided in the application for LOAs renewal for 2013 to 2014 (DoN, 2013). Data collection and analyses on mitigation effectiveness continues as part of the reporting requirements for the operation of SURTASS LFA sonar.
Passive Acoustic Monitoring Conduct research on marine mammal vocalizations before, during, and after designated exercises with SURTASS LFA sonar	The Marine Mammal Monitoring (M3) program collects and analyzes vocalization data from cetaceans using the Navy's Integrated Undersea Surveillance System (IUSS) of passive underwater hydrophone arrays. M3 program analysts assess the collection of cross spectral matrix (CSM) data from the arrays to determine distributional, migrational, and population data about vocalizing cetacean species. M3 analysts also routinely assess data from the SURTASS passive system for cetacean vocalization activity and monitor CSM data during operation of LFA sonar. Over time,

Table 12. Research and monitoring requirements relevant to SURTASS LFA sonar and their current status.

RESEARCH AND MONITORING REQUIREMENTS	CURRENT STATUS OF RESEARCH AND MONITORING REQUIREMENTS
	observations from the CSM data can provide insight into cetacean behavioral reactions to anthropogenic noise sources (seismic profilers, storms, shipping, fishing activity), including operation of SURTASS LFA sonar.
Use of SURTASS HLA During Naval Exercises Continue to explore the feasibility of coordinating with other fleet assets and/or range monitoring programs to include the use of SURTASS LFA sonar towed HLA to augment the collection of marine mammal vocalizations before, during, and after designated exercises.	No Fleet exercises or range monitoring programs including SURTASS LFA sonar vessels were conducted during the LOA reporting period.
Ambient Noise Data Continue to collect ambient noise data and explore the feasibility of declassifying and archiving the ambient noise data for incorporation into appropriate ocean noise budget efforts	Oceanic ambient noise data continues to be collected as part of the Long Term Monitoring program for SURTASS LFA sonar. Pending budgetary assets, the feasibility of declassifying and archiving these data will continue to be explored.

continue assessing data from the Marine Mammal Monitoring (M3) program and ultimately publically releasing data, and to explore the feasibility of declassifying ambient noise data collected during SURTASS LFA sonar missions. To meet these research objectives, under previous as well as the current MMPA authorizations covering SURTASS LFA sonar, the Navy has conducted research and monitoring/studies pertinent to LFA sonar (Table 12).

6.3.1 NAVY-SPONSORED RESEARCH

The DoN sponsors significant research and monitoring projects for living marine resources to study the potential effects of its activities on marine mammals. In the last year for which funding details are available, fiscal year 2010, the Navy funded $32M of marine mammal research at universities, research institutions, Federal laboratories, and private companies that resulted in many peer-reviewed articles in professional scientific journals. Ongoing marine mammal research funded by the Navy includes hearing and hearing sensitivity, auditory effects, dive and behavioral response models, noise impacts, beaked whale global distribution, modeling of beaked whale hearing and response, tagging of free-ranging marine animals at-sea, and radar-based detection of marine mammals from ships.

6.3.2 MARINE MAMMAL MONITORING (M3) PROGRAM

Condition 12b of the LOAs for SURTASS LFA sonar require the Navy to continue to assess data acquired by its Marine Mammal Monitoring (M3) program and work toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances. The Navy's M3 program is conducted with the Integrated Undersea Surveillance System (IUSS) and entails the use of Navy passive acoustic systems to detect marine mammals and track their movements via their vocalizations. Navy IUSS-generated data can provide information on the acoustic occurrence, abundance, and density of cetaceans and potentially provide information on the effects of underwater anthropogenic sound on cetacean behavior.

With the goal of making the IUSS data on cetaceans accessible to appropriate scientists, the Navy is in the process of finalizing a Memorandum of Agreement (MOA) with the Bureau of Ocean Energy Management (BOEM) that will ultimately grant BOEM scientists access to IUSS-generated marine biological and underwater anthropogenic sound data. The MOA establishes a formal agreement between the Navy and BOEM regarding coordination and collaboration to ensure existing federal capabilities are utilized to the fullest extent and maximize the marine environmental stewardship efforts of the Navy and BOEM.

6.4 ADAPTIVE MANAGEMENT

Since the understanding of the potential effects of SURTASS LFA sonar on marine mammals is continuing to evolve, the MMPA Final Rule (NOAA, 2012) provided an adaptive management process that allows NMFS to modify or augment existing mitigation or monitoring measures (after consultation with the Navy) if doing so will have a reasonable likelihood of accomplishing the goals of mitigation and monitoring (50 CFR 218.241). NMFS and the Navy are required to meet annually (if deemed necessary) to discuss the monitoring reports, Navy research and development studies, current science, and to determine whether mitigation or monitoring modifications are appropriate.

The 1st Adaptive Management meeting between the Navy and NMFS was held at NMFS Headquarters in Silver Spring, MD, on 10 June 2013 and was attended by personnel from NOAA Fisheries General Council (GC), NMFS Office of Protected Resources, Navy CNO (OPNAV N2/N6 F24 including support personnel from Marine Acoustics, Inc.), Navy GC, and the Marine Mammal Commission (MMC). The meeting discussions included overviews of the Navy's quarterly monitoring reports to date and the Navy's status on meeting rulemaking requirements for employment of SURTASS LFA sonar as well as reviews of additional potential OBIAs, mass marine mammal stranding events, mitigation effectiveness, and recent marine mammal research.

6.4.1 REQUIREMENTS OF MMPA FINAL RULE FOR SURTASS LFA SONAR

The Navy (OPNAV N2/N6F24) presented an overview of Navy's efforts on meeting the requirements of NMFS' Final Rule 50 CFR § 218.235(e) through (g) as follows:

1. 50 CFR § 218.235(e) requires the Navy to assess data from the Navy's M3 program and work toward making some portion of the data, after appropriate security reviews and declassification, available. Discussion included the development of a MOA between the CNO, Intelligence, Surveillance and Reconnaissance Division and BOEM (Department of Interior) on information transfer from the Navy's IUSS.
2. 50 CFR § 218.235(f) requires the Navy to explore the feasibility of coordinating with other fleet assets and/or range monitoring programs to augment the collection of marine mammal vocalizations during exercises. The Navy discussed its efforts in reviewing the feasibility of this initiative and noted that there were no near-term opportunities to collect marine mammal vocalizations with the SURTASS towed HLAs, particularly during exercises that occur within Navy range complexes.

3. 50 CFR § 218.235(g) requires the Navy to collect ambient noise data and explore the feasibility of declassifying and archiving the ambient noise data for incorporation into appropriate ocean noise budget efforts. The Navy stated that the declassification and archiving of ambient noise data from the IUSS would occur within the context of the upcoming Navy-BOEM MOA.

6.4.2 POTENTIAL ADDITIONAL OFFSHORE BIOLOGICALLY IMPORTANT AREAS (OBIA)

NMFS presented information on several potential LFA OBIAs, in particular two areas (Southeast Shoals and Dogger Bank) that NMFS and the Navy agreed to further assess within the Adaptive Management framework as new information on these areas became available.

6.4.2.1 Southeast Shoal, Grand Bank, Canada (Northwest Atlantic Ocean)

Southeast Shoal is a region of the Grand Bank in the northwestern Atlantic Ocean that is proposed as a Canadian marine protected area for depleted fish stocks and foraging area for cetaceans (including humpback whales [*Megaptera novaeangliae*]). NMFS has not yet received recent survey and occurrence data from the Canadian government and will continue to interface with the Division of Oceans to acquire data. With no new data available, NMFS concluded that while Southeast Shoal is eligible for consideration, insufficient data and information are available at this time to support designation of the area as an LFA OBIA. The Navy does not intend to operate SURTASS LFA sonar in the northwest Atlantic Ocean under the 2nd Year LOAs.

6.4.2.2 Dogger Bank, Germany (North Sea)

An area of Dogger Bank is proposed as a Special Area of Concern for harbor porpoises (*Phocoena phocoena*), and minke whales (*Balaenoptera acutorostrata*) have been observed foraging on a specific area within Dogger Bank. Since Dogger Bank is eligible for consideration as an LFA OBIA, NMFS and the Navy will continue to acquire data on this area as it becomes available. At this time, however, NMFS concluded that there is not enough information to support designation of Dogger Bank as an LFA OBIA for marine mammals. The Navy does not intend to operate SURTASS LFA sonar in the North Sea under the 2nd Year LOAs.

6.4.2.3 Additional Areas for Future Consideration as OBIAs

NMFS presented information on seven additional areas for future consideration as potential LFA OBIAs for the 3rd Year LOAs. These areas include:

- Mississippi and DeSoto Canyons, United States, Northern Gulf of Mexico
- Challenger Bank, Bermuda, northwest Atlantic Ocean
- South Taranaki Bight, New Zealand, southwest Pacific Ocean
- Offshore New Jersey, United States, northwest Atlantic Ocean
- Expansion of Gulf of the Farallones and Cordell Bank NMSs, United States, northeast Pacific Ocean
- Central Tyrrhenian Sea, Italy, Mediterranean Sea
- Masira Bay, Oman, Arabian Sea

While these areas may be eligible for further consideration as LFA OBIAs, currently there is insufficient information to support designation. NMFS confirmed that the Navy would not operate SURTASS LFA sonar in these areas as indicated in their 2nd Year LOAs request for 2013 to 2014.

NMFS also discussed ongoing developments with NOAA's Cetacean Mapping (CETMAP) effort noting that as CETMAP information is sufficiently developed, NMFS would share information with the Navy on Bryde's whales in the Gulf of Mexico, large baleen whales in the northwest Atlantic Ocean, and humpback whales in Hawaiian waters in the central Pacific Ocean.

6.4.2.4 Marine Mammal Stranding Investigations

NMFS described the LOA requirement (13(c)) for the Navy to monitor large cetacean stranding events to determine if SURTASS LFA sonar operations temporally or spatially correlate with those strandings. New steps have been taken to monitor stranding events worldwide, including:

- creating news alerts to notify NMFS and Navy of real-time stranding events;
- monitoring Twitter feeds of domestic/international stranding organizations; and
- sharing location information via Google Earth files.

NMFS presented information on two recent global stranding events (southern Yellow Sea and the northeast Atlantic off Scotland). The Navy confirmed that SURTASS LFA sonar had not operated in the East China Sea, southern Yellow Sea, or the northeast Atlantic Ocean during periods when these stranding events occurred.

6.4.2.5 SURTASS LFA Sonar Quarterly Reports

Per the requirements of 50 CFR § 218.241(e), NMFS and the Navy must review new information to ascertain if marine mammals may have been taken in a manner not anticipated by the regulations or LOAs. The Navy presented information from the first three quarterly mission reports for each SURTASS LFA sonar vessel for the period of August 15, 2013 through May 14, 2013. The total percentages of stocks affected by Level A or Level B Harassment were below the levels authorized in the 1st Year LOAs.

6.4.2.6 Consideration and Discussion of Recent Marine Mammal Research

Per the requirements of 50 CFR § 218.241(d), NMFS and the Navy must review results from general marine mammal and sound research to assess whether NMFS and the Navy should consider modifying existing mitigation and or monitoring measures, as appropriate, following consultation with the Navy regarding practicability. The Navy presented summaries of fourteen research papers for review and discussion. The research papers related to: acoustic impacts on marine mammals, marine mammal behavior and physiological state; new monitoring methods; marine mammal mitigation techniques for naval sonar exercises and seismic survey operations; Hawaiian false killer whale (*Pseudorca crassidens*) habitat and range; and beaked whales (*Mesplodon spp.*).

The attendees agreed that only two of the papers, (CBD, 2012; and Klinck et al., 2012) warranted further discussion, as information was presented on mitigation measures used for active sonar exercises and seismic surveys as well as near-real time acoustic monitoring with a sea glider. Of the potential mitigation measures mentioned in the CBD (2012) and Klinck (2012) papers, further discussion was warranted only on the use of underwater sea gliders carrying acoustic sensors. The Navy discussed the impracticability of deploying gliders from T-AGOS vessels. NMFS also noted that since SURTASS LFA already conducts passive acoustic monitoring, there was no need for additional passive acoustic monitoring.

MMC suggested that the Navy develop a cross-summary analysis between the Navy's current mitigation measures and the mitigation measures suggested in Table 4 of CBD (2012) article to: 1) better address public concern with the efficacy of the current mitigation measures employed during SURTASS LFA sonar operations, 2) to answer questions regarding whether changes to the protective measures employed for SURTASS LFA sonar are warranted, and 3) to address the feasibility of incorporating new mitigation measures.

6.4.2.7 Effectiveness of Mitigation Measures for SURTASS LFA Sonar

The Navy presented information on the Navy's ability to monitor marine mammals with the HF/M3 active sonar system, the detection rates of SURTASS LFA's three-part monitoring system, and the feasibility of using other monitoring platforms and technologies (detailed in an internal 2008 Navy report) for use during SURTASS LFA sonar operations.

6.4.2.8 Update on Scientific Advisory Group (SAG) Process

Per 50 CFR § 218.235(h), the Navy was to convene a SAG to identify and assess different types of monitoring/research that could increase the understanding of the potential effects of LFA sonar on beaked whales and/or harbor porpoises. See Table 12 for additional information on the SAG.

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APPENDIX A:

LETTERS OF AUTHORIZATION GOVERNING THE TAKE OF MARINE MAMMALS INCIDENTAL TO THE U.S. NAVY'S OPERATION OF SURVEILLANCE TOWED ARRAY SENSOR SYSTEM LOW FREQUENCY ACTIVE (SURTASS LFA) SONAR ON THE USNS ABLE, EFFECTIVE, IMPECCABLE, AND VICTORIOUS, OFFICE OF PROTECTED RESOURCES, NATIONAL MARINE FISHERIES SERVICE, AUGUST 15, 2012

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

LETTER OF AUTHORIZATION

The Chief of Naval Operations, Department of the Navy, 2000 Navy Pentagon, Washington, D.C. 20350-2000, and persons operating under his authority (i.e., Navy), are authorized to take marine mammals incidental to Navy operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar in accordance with 50 CFR Part 218, Subpart X– Taking of Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar subject to the provisions of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*; MMPA) and the following conditions:

1. This Authorization is valid for the period August 15, 2012, through August 14, 2013.

2. This Authorization is valid only for the unintentional taking of the species of marine mammals identified in 50 CFR § 218.230(b) and Condition 5 of this Authorization governing the taking of these animals incidental to the activity specified in Condition 3. This authorization shall be valid only for take consistent with the provisions in 50 CFR § 218.232 and the terms of this Authorization as specified in this Authorization.

3. This Authorization is valid only for activities associated with the operation of the SURTASS LFA Sonar onboard the United States Naval Ship (USNS) ABLE (T-AGOS 20). The signals transmitted by the SURTASS LFA sonar source must be between 100 and 500 Hertz (Hz) with a source level for each of the 18 projectors at no more than 215 decibels (dB) re: 1 micro Pascal (μPa) at 1 meter (m) root mean square (rms)) with a maximum duty cycle of 20 percent.

4. This Authorization, combined with Authorizations for the USNS VICTORIOUS (T-AGOS 19), USNS EFFECTIVE (T-AGOS 21), and USNS IMPECCABLE (T-AGOS 23), is valid for an estimated total of 20 nominal active sonar missions among the four SURTASS LFA sonar vessels (or equivalent shorter missions but not to exceed a total of 432 hours of transmit time per vessel during the period of effectiveness of this Authorization) within the following areas:

   (a) Up to 16 nominal missions in the northwestern Pacific Ocean which includes the following operational areas: east of Japan; the North Philippine Sea; the west Philippine Sea; offshore Guam; the Sea of Japan; the East China Sea; the South China Sea; and offshore Japan (25° to 40° N and 10° to 25° N).

(b) Up to 4 nominal missions in the Hawaii Range Complex which includes the northern and southern Hawaii operational areas.

SPECIES AUTHORIZED AND LEVEL OF TAKE

5. The incidental take of marine mammals under the activity identified in Conditions 3 and 4 of this Authorization is limited to the following species:

   (a) **Mysticetes**: blue whale (*Balaenoptera musculus*), Bryde's whale (*Balaenoptera edeni*), fin whale (*Balaenoptera physalus*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), northern Pacific right whale (*Eubalena japonica*), pygmy right whale (*Capera marginata*), sei whale (*Balaenoptera borealis*), and southern right whale (*Eubalaena australis*).

   (b) **Odontocetes**: Baird's beaked whale (*Berardius bairdii*), Blainville's beaked whale (*Mesoplodon densirostris*), common bottlenose dolphin (*Tursiops truncatus*), Cuvier's beaked whale (*Ziphius cavirostris*), Dall's porpoise (*Phocoenoides dalli*), dwarf sperm and pygmy sperm whales (*Kogia simus and K. breviceps*), false killer whale (includes Hawaii pelagic and insular stocks) (*Pseudorca crassidens*), Fraser's dolphin (*Lagenodelphis hosei*), Gervais' beaked whale (*Mesoplodon europaeus*), ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), Gray's beaked whale (*Mesoplodon grayi*), Hector's beaked whale (*Mesoplodon hectori*), Hubbs' beaked whale (*Mesoplodon carhubbsi*), Indo-Pacific bottlenose dolphin (*Tursiops aduncus*), killer whale (*Orca orcinus*), long-beaked common dolphin (*Delphinus capensis*), Longman's beaked whale (*Indopacetus pacificus*), melon-headed whale (*Peponocephala electra*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), pantropical spotted dolphin (*Stenella attenuata*), Perrin's beaked whale (*Mesoplodon perrini*), pygmy beaked whale (*Mesoplodon peruvianus*), pygmy killer whale (*Feresa attenuata*), Risso's dolphin (*Grampus griseus*), rough-toothed dolphin (*Steno bredanensis*), short-beaked common dolphin (*Delphinus delphis*), short-finned pilot whale (*Globicephala macrorhynchus*), Sowerby's beaked whale (*Mesoplodon bidens*), spade-toothed beaked whale (*Mesoplodon traversii*), sperm whale (*Physeter macrocephalus*), spinner dolphin (*Stenella longirostris*), Stejneger's beaked whale (*Mesoplodon stejnegeri*), strap-toothed beaked whale (*Mesoplodon layardii*), striped dolphin (*Stenella coeruleoalba*), and True's beaked whale (*Mesoplodon mirus*).

   (c) **Pinnipeds**: Hawaiian monk seal (*Monachus shauinslandi*)

6. The taking of marine mammals by the Holder of this Authorization is limited to the incidental taking of marine mammal species identified in Condition 5 by Level A and Level B harassment (as defined in the MMPA and 50 CFR § 216.3) within those areas authorized under Condition 4. The take, by harassment, that occurs during the year covered by this Authorization may not exceed the amount identified in Attachment 2.

7. Taking of marine mammal species not listed under Condition 5 by harassment, injury, or mortality, or the taking by mortality of any marine mammal species listed under Condition 5 is prohibited.

MITIGATION

8. The Holder of this Authorization, and any individuals operating under his authority, must conduct the activity identified in 50 CFR § 218.230 and Condition 3 of this Authorization in a manner that minimizes, to the greatest extent practicable, adverse impacts on marine mammals, their habitats, and the availability of marine mammals for subsistence. When conducting operations identified in 50 CFR § 218.230, the following mitigation measures must be implemented:

(a) The Holder of this Authorization, and any individuals operating under his authority, must not broadcast the SURTASS LFA sonar signal at a frequency greater than 500 Hz.

(b) Through mitigation described under 50 CFR § 218.234 and Condition 9 (Mitigation Monitoring) of this Authorization, the Holder of this Authorization and any individuals operating under his authority must ensure, to the greatest extent practicable, that no marine mammal is subjected to a sound pressure level of 180 dB re: 1 μPa (rms) or greater.

(c) **LFA Sonar Mitigation Zone**: Prior to commencing and during SURTASS LFA sonar transmissions, the Holder of this Authorization will use near-real-time environmental data and underwater acoustic prediction models to determine the propagation of the SURTASS LFA sonar signals in the operating area. The Holder must determine the distance from the SURTASS LFA sonar source to the 180-dB re: 1 μPa isopleth (rms) (i.e., the LFA sonar mitigation zone) in order to comply with Condition 8(b).

(i) The Holder will update these sound field estimates every 12 hours, or more frequently when meteorological or oceanographic conditions change.

(d) **Additional 1-km Buffer Zone**: The Holder of this Authorization will establish a one-kilometer (1-km) buffer zone around the LFA sonar mitigation zone.

(e) **Ramp-Up Procedures for the HF/M3 System**: The Holder of a Letter of Authorization will ramp up the High Frequency / Marine Mammal Monitoring (HF/M3) active sonar referenced in 50 CFR § 218.234 from a power level beginning at a maximum source sound pressure level of 180 dB re: 1 μPa (rms) in 10-dB increments to operating levels over a period of no less than five minutes:

(i) At least 30 minutes prior to any SURTASS LFA sonar transmission;

(ii) Prior to any SURTASS LFA sonar calibrations or testing that are not part of regular SURTASS LFA sonar transmissions described in 50 CFR § 218.230; and

(iii) Anytime after the Holder of this Authorization has powered-down the HF/M3 active sonar source for more than two minutes.

(iv) The Holder of a Letter of Authorization will not increase the HF/M3 active sonar system's sound pressure level once they detect a marine mammal. The Holder may resume a ramp-up of the HF/M3 sonar system once marine mammals are no longer detected by the HF/M3 active sonar system, passive acoustic monitoring, or visual monitoring described in Condition 9.

(f) **Suspension/Delay for SURTASS LFA Sonar Transmissions**: If the Holder of this Authorization detects a marine mammal through monitoring required under 50 CFR § 218.235 and Condition 9 within either the LFA sonar mitigation zone or the 1-km buffer zone around the surveillance vessel, the Holder will immediately suspend or delay SURTASS LFA transmissions.

(g) **Resumption of SURTASS LFA Sonar Transmissions**: The Holder of this Authorization may resume/commence SURTASS LFA sonar transmissions 15 minutes after:

(i) All marine mammals have left the LFA sonar mitigation zone and the 1-km buffer zone around the surveillance vessel; and

(ii) There is no further detection of any marine mammal within the LFA sonar mitigation zone plus the 1-km buffer zone as determined by the visual, passive or active acoustic monitoring protocols described in 50 CFR § 218.235 and Condition 9.

(h) **Geographic Restrictions**: The Holder of this Authorization will not operate SURTASS LFA sonar such that the SURTASS LFA sonar sound field exceeds 180 dB re: 1 μ Pa (rms):

(i) At a distance of less than or equal to 22 km (14 miles (mi); 22 nautical miles (nm)) from any coastline, including offshore islands.

(ii) At a distance of less than or equal to 1 km (0.62 mi; 0.54 nm) seaward of the outer perimeter of any offshore biologically important area for marine mammals designated in 50 CFR § 218.234(f)(2) and described in Condition 8(h)(iii) during the period specified.

(iii) The Offshore Biologically Important Areas (OBIA) for marine mammals (with specified periods) for SURTASS LFA sonar operations are:

OBIA	Period of Effectiveness
Georges Bank	Year-round
Roseway Basin Right Whale Conservation Area	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	March through August, annually
Silver Bank and Navidad Bank	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	June through October, annually
Patagonian Shelf Break	Year-round
Southern Right Whale Seasonal Habitat	May through December, annually
Central California NMSs	June through November, annually
Antarctic Convergence Zone	October through March, annually

Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	June through November, annually
Coastal waters off Madagascar	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	November through December, annually
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	November through April, annually
Costa Rica Dome	Year-round
Great Barrier Reef Between 16° S and 21° S	May through September, annually
Bonney Upwelling on the southern coast of Australia	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually
Abrolhos Bank	August through November

Note: See § 218.234(f)(2) and Attachment 1 for coordinate information.

(i) **Operational Exception for SURTASS LFA Sound Field in OBIAs**: During military operations, SURTASS LFA sonar transmissions may exceed 180 dB re: 1 μPa (rms) within the boundaries of an OBIA, including operating within an OBIA, when the Holder of this Authorization determines that it is: 1) operationally necessary to continue tracking an existing underwater contact; or 2) operationally necessary to detect a new underwater contact within the OBIA. This exception does not apply to routine training and testing with the SURTASS LFA sonar systems.

(j) **Mission Planning**: The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization will plan all SURTASS LFA sonar missions to ensure that no more than 12 percent of any marine mammal stock listed in 50 CFR § 218.230(b)(1) through (3) would be taken by Level B harassment annually. This annual per-stock cap of 12 percent applies regardless of the number of LFA sonar vessels operating. The Holder of this Authorization must coordinate with the Holder of the Letters of Authorization issued to the USNS VICTORIOUS, USNS EFFECTIVE, and the USNS IMPECCABLE, to ensure that this condition is met for all vessels combined.

MITIGATION MONITORING

9. The Holder of this Authorization, and any individuals operating under his authority, must:

   (a) Perform the following for visual mitigation monitoring:

      (i) Marine mammal biologists qualified in conducting at-sea marine mammal visual monitoring from surface vessels will train and qualify designated ship personnel as lookouts to conduct at-sea visual monitoring.

      (ii) Train the lookouts in the most effective means to ensure quick and effective communication within the command structure in order to facilitate implementation of protective measures if they spot marine mammals.

      (iii) Conduct visual monitoring from the ship's bridge during daylight hours (30 minutes before sunrise until 30 minutes after sunset) during operations that employ SURTASS LFA sonar in the active mode. Maintain a topside watch with standard binoculars (7x) and with the naked eye.

   (b) Perform the following for passive acoustic monitoring:

      (i) Use the low frequency, passive SURTASS sonar system to listen for vocalizing marine mammals; and

   (c) Perform the following for active acoustic monitoring:

      (i) Use the HF/M3 active sonar to locate and track marine mammals in relation to the SURTASS LFA sonar vessel and the sound field produced by the SURTASS LFA sonar source array, subject to the ramp-up requirements in § 218.234(e) and Condition 8(e).

10. Mitigation monitoring under Conditions 9(a), (b), and (c) must:

   (a) Commence at least 30 minutes before the first SURTASS LFA sonar transmission (30 minutes before sunrise for visual monitoring);

   (b) Continue between transmission pings; and

   (c) Continue for at least 15 minutes after completion of the SURTASS LFA sonar transmission exercise (30 minutes after sunset for visual monitoring), or if marine mammals are showing abnormal behavioral patterns, for a period of time until behavior patterns return to normal or conditions prevent continued observations.

MONITORING

11. The Holder of this Authorization for activities described in 50 CFR § 218.230 must:

   (a) Cooperate with the NMFS and any other federal agency for monitoring the impacts of the activity on marine mammals; and

   (b) Designate qualified on-site individuals to conduct the mitigation, monitoring and reporting activities specified in this Letter of Authorization.

12. The Holder of this Authorization will conduct all monitoring required under the Letter of Authorization to increase knowledge of the affected marine mammal species. The Holder of this Authorization must:

(a) Convene a Scientific Advisory Group (SAG) to analyze different types of monitoring/research that could increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises.

(b) Continue to assess data from the Marine Mammal Monitoring Program and work toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances. Any portions of the analyses conducted by these scientists based on these data that are determined to be unclassified after appropriate security reviews will be made publically available.

(c) Continue to explore the feasibility of coordinating with other fleet assets and/or range monitoring programs to include the use of SURTASS LFA sonar towed horizontal line arrays to augment the collection of marine mammal vocalizations before, during, and after designated exercises.

(d) Continue to collect ambient noise data and explore the feasibility of declassifying and archiving the ambient noise data for incorporation into appropriate ocean noise budget efforts.

REPORTING

13. The Holder of this Authorization must:

(a) Provide a status update to the NMFS when the Holder submits the next annual application on efforts to assess the data collected by its undersea arrays and progress toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances.

(b) Draft a plan of action outlining a strategy for implementing the Scientific Advisory Group's (SAG) recommendations for going forward with beaked whale and/or harbor porpoise research; or describe in writing why such research is not feasible/or is unlikely to increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises, to be followed by a meeting with NMFS to discuss any other potential options.

(c) Systematically observe SURTASS LFA sonar operations for injured or disabled marine mammals and monitor the principal marine mammal stranding networks and other media to correlate analysis of any whale strandings that could potentially be associated with SURTASS LFA sonar operations.

(i) The Holder will ensure that the NMFS is notified immediately or as soon as clearance procedures allow if an injured, stranded, or dead marine mammal is found during or shortly after, and in the vicinity of, any SURTASS LFA operations. The Holder will report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov.

(ii) The Holder will provide the NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

(iii) In the event that an injured, stranded, or dead marine mammal is found by the Holder that is not in the vicinity of, or found during or shortly after SURTASS LFA sonar operations, the Holder will report the same information to NMFS as listed above as soon as operationally feasible and clearance procedures allow.

(d) In the event of a ship strike by the SURTASS LFA sonar vessel, at any time or place, the Holder must:

(i) Immediately, or as soon as clearance procedures allow, report to the NMFS the species identification (if known), location (lat/long) of the animal (or the strike if the animal has disappeared), and whether the animal is alive or dead (or unknown);

(ii) Report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov;

(iii) Report to the NMFS as soon as operationally feasible the size and length of the animal, an estimate of the injury status (e.g., dead, injured but alive, injured and moving, unknown, etc.), vessel class/type and operational status;

(iv) Report to the NMFS the vessel length, speed, and heading as soon as feasible; and

(v) Provide the NMFS a photo or video, if equipment is available.

(e) Submit classified and unclassified quarterly mission reports to the Director, Office of Protected Resources, NMFS, no later than 30 days after the end of each quarter beginning on the date of effectiveness of a Letter of Authorization or as specified in the appropriate Letter of Authorization. Each quarterly mission report will include all active-mode missions completed during that quarter. At a minimum, each classified mission report must contain the following information:

(i) Dates, times, and location of each vessel during each mission;

(ii) Information on sonar transmissions during each mission and records of any delays or suspensions;

(iii) Location of the SURTASS LFA sonar mitigation and buffer zones in relation to the LFA sonar array;

(iv) Marine mammal observations including animal type and/or species, number of animals sighted, date and time of observations, type of detection (visual, passive acoustic, HF/M3 sonar), bearing and range from vessel, abnormal behavior (if any), and remarks/narrative (as necessary).

(v) The report will include the Navy's estimates of the percentages of marine mammal stocks affected (both for the quarter and cumulatively for the year

covered by the Authorization) by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(vi) In the event that no SURTASS LFA sonar missions are completed during a quarter, a report of negative activity will be provided.

(f) Submit an annual, unclassified report to the Director, Office of Protected Resources, NMFS, no later than 45 days after expiration of this Authorization. At a minimum, the annual report will contain the following:

(i) An unclassified summary of the year's quarterly reports;

(ii) The Navy's estimates of the percentages of marine mammal stocks affected by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(iii) An analysis of the effectiveness of the mitigation measures with recommendations for improvements where applicable;

(iv) An assessment of any long-term effects from SURTASS LFA sonar operations; and

(v) Any discernible or estimated cumulative impacts from SURTASS LFA sonar operations.

14. The Holder of this Authorization must comply with the Terms and Conditions of the Incidental Take Statement corresponding to the Endangered Species Act Biological Opinion issued to the Navy and the National Marine Fisheries Service's Office of Protected Resources, Permits and Conservation Division.

15. A copy of this Authorization must be in the possession of the Officer in Charge of the Military Detachment (MILDET) on board the USNS ABLE in order to conduct the activity under the authority of this Letter of Authorization and Incidental Take Statement.

AUG 15 2012

Helen M. Golde, Acting Director
Office of Protected Resources
National Marine Fisheries Service

Date

Attachment 1 – Table 1 OBIA Coordinates

Name of Area	Location of Area	Months of Importance
Georges Bank	40°00'N, 72°30'W 39°37 N, 72°09'W 39°54'N, 71°43'W 40°02 N, 71°20'W 40°08'N, 71°01'W 40°04'N, 70°44'W 40°00'N, 69°24'W 40°16'N, 68°27'W 40°34'N, 67°13'W 41°00'N, 66°24'W 41°52'N, 65°47'W 42°20'N, 66°06'W 42°18'N, 67°23'W	Year-round
Roseway Basin Right Whale Conservation Area	43°05'N, 65°40'W 43°05'N, 65°03'W 42°45'N, 65°40'W 42°45'N, 65°03'W	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	41°00.000'N, 69°05.000'W 42°09.000'N, 67°08.400'W 42°53.436'N, 67°43.873'W 44°12.541'N, 67°16.847'W 44°14.911'N, 67°08.936'W 44°21.538'N, 67°03.663'W 44°26.736'N, 67°09.596'W 44°16.805'N, 67°27.394'W 44°11.118'N, 67°56.398'W 43°59.240'N, 68°08.263'W 43°36.800'N, 68°46.496'W 43°33.925'N, 69°19.455'W 43°32.008'N, 69°44.504'W 43°21.922'N, 70°06.257'W 43°04.084'N, 70°21.418'W 42°51.982'N, 70°31.965'W 42°45.187'N, 70°23.396'W 42°39.068'N, 70°30.188'W 42°32.892'N, 70°35.873'W 42°07.748'N, 70°28.257'W 42°05.592'N, 70°02.136'W 42°03.664'N, 69°44.000'W 41°40.000'N, 69°45.000'W	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	Critical Habitat Boundaries are coastal waters between 31°15' N and 30°15'N from the coast out 15 nautical miles (nmi); and the coastal waters between 30°15' N and 28°00''N from the coast out 5 nmi. (50 CFR §226.13(c)) OBIA Boundaries are coastal waters between 31°15''N and 30°15''N from 12 to 15 nmi.	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	57°03'N, 153°00'W 57°18'N, 151°30'W 57°00'N, 151°30'W 56°45'N, 153°00'W (50 CFR §226.215)	March through August, annually

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Name of Area	Location of Area	Months of Importance
Silver Bank and Navidad Bank	Silver Bank: 20° 38.899'N, 69° 23.640'W 20° 55.706'N, 69° 57.984'W 20° 25.221'N, 70° 00.387'W 20° 12.833'N, 69° 40.604'W 20° 13.918'N, 69° 31.518'W 20° 28.680'N, 69° 31.900'W Navidad Bank: 20° 15.596'N, 68° 47.967'W 20° 11.971'N, 68° 54.810'W 19° 52.514'N, 69° 00.443'W 19° 54.957'N, 68° 51.430'W 19° 51.513'N, 68° 41.399'W	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	An exclusion zone following the 500-m isobath extending from 3°31.055'N, 9°12.226'E in the north offshore of Malabo southward to 8°57.470'S, 12°55.873'E offshore of Luanda.	June through October, annually
Patagonian Shelf Break	Between 200- and 2000-m isobaths and the following latitudes: 35°00'S, 39°00'S, 40°40'S, 42°30'S, 46°00'S, 48°50'S.	Year-round
Southern Right Whale Seasonal Habitat	Coastal waters between 42°00'S and 43°00'S from 12 to 15 nmi including the enclosed bays of Golfo Nuevo, Golfo San Jose, and San Matias. Golfos San Jose and San Nuevo are within 22 km (14 mi; 12 nmi) coastal exclusion zone.	May through December, annually
Central California National Marine Sanctuaries	Single stratum boundary created from the Cordell Bank (15 CFR 922.10), Gulf of the Farallones (15 CFR 922.80), and Monterey Bay (15 CFR 922.30) NMS legal boundaries. Monterey Bay NMS includes the Davidson Seamount Management Zone.	June through November, annually
Antarctic Convergence Zone	30°E to 80°E, 45°S 80°E to 150°E, 55°S 150°E to 50°W, 60°S 50°W to 30°E, 50°S	October through March, annually

Name of Area	Location of Area	Months of Importance
Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	54°09.436'N, 143°47.408'W 54°09.436'N, 143°17.354'W 54°01.161'N, 143°17.354'W 53°53.580'N, 143°13.398'W 53°26.963'N, 143°28.230'W 53°07.013'N, 143°35.481'W 52°48.705'N, 143°38.447'W 52°32.077'N, 143°37.788'W 52°21.605'N, 143°34.163'W 52°09.470'N, 143°26.582'W 51°57.686'N, 143°30.208'W 51°36.033'N, 143°42.794'W 51°08.082'N, 143°51.301'W 51°08.082'N, 144°16.742'W 51°24.514'N, 144°11.139'W 51°48.116'N, 144°10.809'W 52°03.194'N, 144°20.363'W 52°23.235'N, 144°10.150'W 52°28.674'N, 144°12.787'W 52°42.523'N, 144°10.150'W 53°12.972'N, 143°55.648'W 53°18.505'N, 143°56.637'W 53°23.041'N, 143°53.011'W 53°28.250'N, 143°53.341'W 53°44.039'N, 143°49.056'W 53°53.207'N, 143°50.045'W 53°59.819'N, 143°48.067'W	June through November, annually
Coastal waters off Madagascar	16°03'55.04"S, 50°27'12.59"E 16°12'23.03"S, 51°03'37.38"E 24°30'45.06"S, 48°26'00.94"E 24°15'28.07"S, 47°46'51.16"E 22°18'00.74"S, 48°14'13.52"E 20°52'24.12"S, 48°43'13.49"E 19°22'33.24"S, 49°15'45.47"E 18°29'46.08"S, 49°37'32.25"E 17°38'27.89"S, 49°44'27.17"E 17°24'39.12"S, 49°39'17.03"E 17°19'35.34"S, 49°54'23.82"E 16°45'41.71"S, 50°15'56.35"E	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	25°55'20.00"S, 44°05'15.45"E 25°46'31.36"S, 47°22'35.90"E 27°02'37.71"S, 48°03'31.08"E 35°13'51.37"S, 46°26'19.98"E 35°14'28.59"S, 42°35'49.20"E 31°36'57.96"S, 42°37'49.35"E 27°41'11.21"S, 44°30'11.01"E	November through December, annually

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Name of Area	Location of Area	Months of Importance
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	42°50.271'N, 06°31.883'E 42°55.603'N, 06°43.418'E 43°04.374'N, 06°52.165'E 43°12.600'N, 07°10.440'E 43°21.720'N, 07°19.380'E 43°30.600'N, 07°32.220'E 43°33.900'N, 07°49.920'E 43°36.420'N, 08°05.580'E 43°42.600'N, 08°22.140'E 43°50.880'N, 08°34.500'E 43°58.560'N, 08°47.700'E 43°59.040'N, 08°56.040'E 43°57.047'N, 09°03.540'E 43°52.260'N, 09°08.520'E 43°47.580'N, 09°13.500'E 43°36.060'N, 09°16.620'E 43°28.440'N, 09°05.820'E 43°21.360'N, 09°02.100'E 43°16.020'N, 08°57.240'E 43°04.440'N, 08°47.580'E 42°54.900'N, 08°35.400'E 42°45.900'N, 08°27.540'E 42°36.060'N, 08°22.020'E 42°22.620'N, 08°15.849'E 42°07.202'N, 08°17.174'E 41°52.800'N, 08°15.720'E 41°39.780'N, 08°05.280'E 41°28.200'N, 08°51.600'E 42°57.060'N, 06°19.860'E	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	21°10'02.179"N, 157°30'58.217"W 21°09'46.815"N, 157°30'22.367"W 21°06'39.882"N, 157°31'00.778"W 21°02'51.976"N, 157°30'30.049"W 20°59'52.725"N, 157°29'28.591"W 20°58'05.174"N, 157°27'35.919"W 20°55'49.456"N, 157°30'58.217"W 20°50'44.729"N, 157°42'42.418"W 20°51'02.654"N, 157°44'45.333"W 20°53'56.784"N, 157°46'04.716"W 20°56'32.988"N, 157°45'33.987"W 21°01'27.472"N, 157°43'10.586"W 21°05'20.499"N, 157°39'27.802"W 21°10'02.179"N, 157°30'58.217"W	November through April, annually
Costa Rica Dome	Centered at 9°N and 88°W	Year-round

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Name of Area	Location of Area	Months of Importance
Great Barrier Reef Between 16° S and 21° S	16°01.829'S, 145°38.783'E 15°52.215'S, 146°20.936'E 17°28.354'S, 146°59.392'E 20°16.228'S, 151°39.674'E 20°58.381'S, 150°30.897'E 20°17.007'S, 149°38.247'E 20°10.941'S, 149°18.247'E 20°02.403'S, 149°12.623'E 19°53.287'S, 149°03.986'E 19°49.866'S, 148°52.135'E 19°53.287'S, 148°44.302'E 19°47.965'S, 148°36.870'E 19°47.205'S, 148°26.024'E 19°19.978'S, 147°39.626'E 19°14.065'S, 147°37.014'E 19°08.913'S, 147°31.993'E 19°05.667'S, 147°24.160'E 19°07.576'S, 147°18.134'E 18°51.718'S, 146°51.219'E 18°44.258'S, 146°54.031'E 18°37.175'S, 146°51.420'E 18°31.620'S, 146°43.385'E 18°27.595'S, 146°40.573'E 17°36.676'S, 146°20.488'E 17°20.484'S, 146°16.671'E 17°07.745'S, 146°13.056'E 16°49.769'S, 146°11.047'E 16°41.835'S, 146°03.817'E 16°39.706'S, 145°54.979'E	May through September, annually
Bonney Upwelling on the west coast of Australia	37°12'20.036"S, 139°31'17.703"E 37°37'33.815"S, 139°42'42.508"E 38°10'36.144"S, 140°22'57.345"E 38°44'50.558"S, 141°33'50.342"E 39°07'04.125"S, 141°11'00.733"E 37°28'33.179"S, 139°10'52.263"E	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	20°59.735'N, 89°07.675'E 20°55.494'N, 89°09.484'E 20°52.883'N, 89°12.704'E 20°55.275'N, 89°18.133'E 21°04.558'N, 89°25.294'E 21°12.655'N, 89°25.354'E 21°13.279'N, 89°16.833'E 21°06.347'N, 89°15.011'E	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Boundaries within 23 nmi (26.5 m; 42.6 km) of the coast from 47°07' N to 48°30' N latitude 48°30'01.995"N, 125°58'38.786"W 48°16'55.605"N, 125°38'52.052"W 48°23'07.353"N, 125°17'10.935"W 48°12'38.241"N, 125°16'42.339"W 47°58'20.361"N, 125°31'14.517"W 47°58'20.361"N, 126°06'16.322"W 48°09'46.665"N, 126°25'48.758"W	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually

Name of Area	Location of Area	Months of Importance
Abrolhos Bank	16°35'34.909"38°52'30.455" 16°35'31.619"38°43'41.069" 16°40'00.131"37°23'52.492" 19°30'59.069"37°23'52.446" 19°30'59.974"39°33'38.351" 19°20'24.752"39°30'33.03" 18°52'16.884"39°32'31.789" 18°45'09.937"39°32'27.709" 18°30'59.345"39°30'59.669" 18°27'28.985"39°30'13.453" 18°17'30.429"39°26'21.073" 18°07'43.518"39°19'52.924" 18°09'24.931"39°16'24.913" 18°10'04.585"39°12'30.425" 18°10'20.682"38°39'06.185" 18°08'50.404"38°35'00.059" 18°06'05.466"38°31'41.385" 18°02'09.399"38°29'26.179" 17°58'01.372"38°28'45.409" 17°53'58.883"38°29'34.612" 16°48'58.768"38°55'23.768" 16°43'15.682"38°53'40.007"	August through November, annually

Attachment 2 – Authorized Take Estimates by Operating Region

The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization must also coordinate with the Holder of the Letter of Authorization issued to the USNS EFFECTIVE, the USNS VICTORIOUS, and the USNS IMPECCABLE, to ensure that these conditions are met for all vessels combined.

Category	Requested Take Authorization Level A harassment
Mysticetes	No more than 6 over the course of the regulations.
Odontocetes	No more than 25 over the course of the regulations.
Pinnipeds	No more than 25 over the course of the regulations.

East of Japan—Operational Area 1 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	2
Fin whale	2
Sei whale	7
Bryde's whale	7
Minke whale	16
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Baird's beaked whale	21
Cuvier's beaked whale	37
Ginkgo-toothed beaked whale	5
Hubbs' beaked whale	5
False killer whale	32
Pygmy killer whale	19
Short-finned pilot whale	118
Risso's dolphin	92
Common dolphin	658
Bottlenose dolphin	136
Spinner dolphin	0
Pantropical spotted Dolphin	88
Striped dolphin	57
Rough-toothed dolphin	44
Fraser's dolphin	45
Pacific white-sided dolphin	94

North Philippine Sea—Operational Area 2 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	21
Minke whale	304
North Pacific right whale	1
Sperm whale	143
Kogia spp.	281
Cuvier's beaked whale	146
Blainville's beaked whale	14
Ginkgo-toothed beaked whale	14
Killer whale	14
False killer whale	107
Pygmy killer whale	76
Melon-headed whale	45
Short-finned pilot whale	826
Risso's dolphin	833
Common dolphin	1644
Bottlenose dolphin	271
Spinner dolphin	0
Pantropical spotted dolphin	570
Striped dolphin	1369
Rough-toothed dolphin	481
Fraser's dolphin	265
Pacific white-sided dolphin	466

West Philippine Sea—Operational Area 3 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	14
Bryde's whale	42
Minke whale	141
Humpback whale (winter only)	2
Sperm whale	31
Kogia spp.	106
Cuvier's beaked whale	10
Blainville's beaked whale	20
Ginkgo-toothed beaked whale	19
False killer whale	131
Pygmy killer whale	94
Melon-headed whale	56
Short-finned pilot whale	215
Risso's dolphin	575
Common dolphin	3287
Bottlenose dolphin	473
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	343
Rough-toothed dolphin	336
Fraser's dolphin	20
Pacific white-sided dolphin	559

Offshore Guam—Operational Area 4 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	3
Fin whale	11
Sei whale	9
Bryde's whale	13
Minke whale	8
Humpback whale (winter only)	580
Sperm whale	31
Kogia spp.	386
Cuvier's beaked whale	191
Blainville's beaked whale	36
Ginkgo-toothed beaked whale	16
Longman's beaked whale	13
False killer whale	36
Pygmy killer whale	4
Melon-headed whale	137
Killer whale	6
Short-finned pilot whale	54
Risso's dolphin	34
Common dolphin	0
Bottlenose dolphin	0
Spinner dolphin	102
Pantropical spotted dolphin	570
Striped dolphin	172
Rough-toothed dolphin	15
Fraser's dolphin	127

Sea of Japan—Operational Area 5 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	44
Bryde's whale	5
Minke whale	16
Minke whale J stock	6
Gray whale	0
N. Pacific right whale	1
Sperm whale	41
Stejneger's beaked whale	80
Baird's beaked whale	18
Cuvier's beaked whale	245
Ginkgo-toothed beaked whale	30
False killer whale	161
Melon-headed whale	0
Short-finned pilot whale	33
Risso's dolphin	350
Common dolphin	3615
Bottlenose dolphin	32
Spinner dolphin	0
Pantropical spotted dolphin	285
Pacific white-sided dolphin	94
Dall's porpoise	1412

East China Sea—Operational Area 6 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	58
Minke whale J stock	24
Gray whale (winter only)	1
N. Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	64
Blainville's beaked whale	13
Ginkgo-toothed beaked whale	5
False killer whale	17
Pygmy killer whale	4
Melon-headed whale	63
Short-finned pilot whale	27
Risso's dolphin	150
Common dolphin	658
Bottlenose dolphin	106
Spinner dolphin	0
Pantropical spotted dolphin	154
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67
Pacific white-sided dolphin	0

South China Sea—Operational Area 7 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	43
Gray whale (winter only)	1
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	0
Blainville's beaked whale	7
Ginkgo-toothed beaked whale	7
False killer whale	19
Pygmy killer whale	4
Melon-headed whale	70
Short-finned pilot whale	22
Risso's dolphin	175
Common dolphin	658
Bottlenose dolphin	85
Spinner dolphin	3249
Pantropical spotted dolphin	132
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67

Offshore Japan 25-40° N—Operational Area 8 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	11
Fin whale	5
Sei whale	15
Bryde's whale	21
Minke whale	13
Sperm whale	11
Kogia spp.	211
Baird's beaked whale	3
Cuvier's beaked whale	37
Mesoplodon spp.	16
False killer whale	117
Pygmy killer whale	7
Melon-headed whale	41
Short-finned pilot whale	0
Risso's dolphin	34
Common dolphin	3615
Bottlenose dolphin	17
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	856
Rough-toothed dolphin	15
Pacific white-sided dolphin	102
Hawaiian monk seal	1

Offshore Japan 10-25° N—Operational Area 9 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	9
Sperm whale	0
Kogia spp.	0
Cuvier's beaked whale	19
False killer whale	34
Melon-headed whale	19
Short-finned pilot whale	22
Risso's dolphin	42
Common dolphin	1,644
Bottlenose dolphin	17
Spinner dolphin	102
Pantropical spotted dolphin	395
Striped dolphin	172
Rough-toothed dolphin	0

Hawaii North—Operational Area 10 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	8
Fin whale	6
Bryde's whale	12
Minke whale	8
Humpback whale	91
Sperm whale	73
Kogia spp.	506
Cuvier's beaked whale	205
Blainville's beaked whale	39
Longman's beaked whale	14
Killer whale	6
False killer whale (Hawaii Pelagic)	9
False killer whale (Hawaii Insular)	9
Pygmy killer whale	17
Melon-headed whale	51
Short-finned pilot whale	66
Risso's dolphin	44
Bottlenose dolphin (Hawaii Pelagic)	193
Bottlenose dolphin (Kauai/Niihau)	1
Spinner dolphin	16
Pantropical spotted dolphin	43
Striped dolphin	62
Rough-toothed dolphin	164
Fraser's dolphin	156
Hawaiian monk seal	4

Hawaii South—Operational Area 11 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	4
Fin whale	3
Bryde's whale	6
Minke whale	6
Humpback whale	0
Sperm whale	48
Kogia spp.	257
Cuvier's beaked whale	122
Blainville's beaked whale	23
Longman's beaked whale	8
Killer whale	3
False killer whale (Hawaii Pelagic)	5
False killer whale (Hawaii Insular)	5
Pygmy killer whale	9
Melon-headed whale	27
Short-finned pilot whale	63
Risso's dolphin	23
Bottlenose dolphin (Hawaii Pelagic)	25
Bottlenose dolphin (Oahu)	1
Bottlenose dolphin (4-Island)	1
Bottlenose dolphin	3
Spinner dolphin	20
Pantropical spotted dolphin	53
Striped dolphin	78
Rough-toothed dolphin	87
Fraser's dolphin	83
Hawaiian monk seal	3

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

LETTER OF AUTHORIZATION

The Chief of Naval Operations, Department of the Navy, 2000 Navy Pentagon, Washington, D.C. 20350-2000, and persons operating under his authority (i.e., Navy), are authorized to take marine mammals incidental to Navy operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar in accordance with 50 CFR Part 218, Subpart X– Taking of Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar subject to the provisions of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*; MMPA) and the following conditions:

1. This Authorization is valid for the period August 15, 2012, through August 14, 2013.

2. This Authorization is valid only for the unintentional taking of the species of marine mammals identified in 50 CFR § 218.230(b) and Condition 5 of this Authorization governing the taking of these animals incidental to the activity specified in Condition 3. This authorization shall be valid only for take consistent with the provisions in 50 CFR § 218.232 and the terms of this Authorization as specified in this Authorization.

3. This Authorization is valid only for activities associated with the operation of the SURTASS LFA Sonar onboard the United States Naval Ship (USNS) EFFECTIVE (T-AGOS 21). The signals transmitted by the SURTASS LFA sonar source must be between 100 and 500 Hertz (Hz) with a source level for each of the 18 projectors at no more than 215 decibels (dB) re: 1 micro Pascal (μPa) at 1 meter (m) root mean square (rms)) with a maximum duty cycle of 20 percent.

4. This Authorization, combined with Authorizations for the USNS VICTORIOUS (T-AGOS 19), USNS ABLE (T-AGOS 20), and USNS IMPECCABLE (T-AGOS 23), is valid for an estimated total of 20 nominal active sonar missions among the four SURTASS LFA sonar vessels (or equivalent shorter missions but not to exceed a total of 432 hours of transmit time per vessel during the period of effectiveness of this Authorization) within the following areas:

   (a) Up to 16 nominal missions in the northwestern Pacific Ocean which includes the following operational areas: east of Japan; the North Philippine Sea; the west Philippine Sea; offshore Guam; the Sea of Japan; the East China Sea; the South China Sea; and offshore Japan (25° to 40° N and 10° to 25° N).

(b) Up to 4 nominal missions in the Hawaii Range Complex which includes the northern and southern Hawaii operational areas.

SPECIES AUTHORIZED AND LEVEL OF TAKE

5. The incidental take of marine mammals under the activity identified in Conditions 3 and 4 of this Authorization is limited to the following species:

   (a) **Mysticetes**: blue whale (*Balaenoptera musculus*), Bryde's whale (*Balaenoptera edeni*), fin whale (*Balaenoptera physalus*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), northern Pacific right whale (*Eubalena japonica*), pygmy right whale (*Capera marginata*), sei whale (*Balaenoptera borealis*), and southern right whale (*Eubalaena australis*).

   (b) **Odontocetes**: Baird's beaked whale (*Berardius bairdii*), Blainville's beaked whale (*Mesoplodon densirostris*), common bottlenose dolphin (*Tursiops truncatus*), Cuvier's beaked whale (*Ziphius cavirostris*), Dall's porpoise (*Phocoenoides dalli*), dwarf sperm and pygmy sperm whales (*Kogia simus and K. breviceps*), false killer whale (includes Hawaii pelagic and insular stocks) (*Pseudorca crassidens*), Fraser's dolphin (*Lagenodelphis hosei*), Gervais' beaked whale (*Mesoplodon europaeus*), ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), Gray's beaked whale (*Mesoplodon grayi*), Hector's beaked whale (*Mesoplodon hectori*), Hubbs' beaked whale (*Mesoplodon carhubbsi*), Indo-Pacific bottlenose dolphin (*Tursiops aduncus*), killer whale (*Orca orcinus*), long-beaked common dolphin (*Delphinus capensis*), Longman's beaked whale (*Indopacetus pacificus*), melon-headed whale (*Peponocephala electra*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), pantropical spotted dolphin (*Stenella attenuata*), Perrin's beaked whale (*Mesoplodon perrini*), pygmy beaked whale (*Mesoplodon peruvianus*), pygmy killer whale (*Feresa attenuata*), Risso's dolphin (*Grampus griseus*), rough-toothed dolphin (*Steno bredanensis*), short-beaked common dolphin (*Delphinus delphis*), short-finned pilot whale (*Globicephala macrorhynchus*), Sowerby's beaked whale (*Mesoplodon bidens*), spade-toothed beaked whale (*Mesoplodon traversii*), sperm whale (*Physeter macrocephalus*), spinner dolphin (*Stenella longirostris*), Stejneger's beaked whale (*Mesoplodon stejnegeri*), strap-toothed beaked whale (*Mesoplodon layardii*), striped dolphin (*Stenella coeruleoalba*), and True's beaked whale (*Mesoplodon mirus*).

   (c) **Pinnipeds**: Hawaiian monk seal (*Monachus shauinslandi*)

6. The taking of marine mammals by the Holder of this Authorization is limited to the incidental taking of marine mammal species identified in Condition 5 by Level A and Level B harassment (as defined in the MMPA and 50 CFR § 216.3) within those areas authorized under Condition 4. The take, by harassment, that occurs during the year covered by this Authorization may not exceed the amount identified in Attachment 2.

7. Taking of marine mammal species not listed under Condition 5 by harassment, injury, or mortality, or the taking by mortality of any marine mammal species listed under Condition 5 is prohibited.

MITIGATION

8. The Holder of this Authorization, and any individuals operating under his authority, must conduct the activity identified in 50 CFR § 218.230 and Condition 3 of this Authorization in a manner that minimizes, to the greatest extent practicable, adverse impacts on marine mammals, their habitats, and the availability of marine mammals for subsistence. When conducting operations identified in 50 CFR § 218.230, the following mitigation measures must be implemented:

   (a) The Holder of this Authorization, and any individuals operating under his authority, must not broadcast the SURTASS LFA sonar signal at a frequency greater than 500 Hz.

   (b) Through mitigation described under 50 CFR § 218.234 and Condition 9 (Mitigation Monitoring) of this Authorization, the Holder of this Authorization and any individuals operating under his authority must ensure, to the greatest extent practicable, that no marine mammal is subjected to a sound pressure level of 180 dB re: 1 μPa (rms) or greater.

   (c) **LFA Sonar Mitigation Zone**: Prior to commencing and during SURTASS LFA sonar transmissions, the Holder of this Authorization will use near-real-time environmental data and underwater acoustic prediction models to determine the propagation of the SURTASS LFA sonar signals in the operating area. The Holder must determine the distance from the SURTASS LFA sonar source to the 180-dB re: 1 μPa isopleth (rms) (i.e., the LFA sonar mitigation zone) in order to comply with Condition 8(b).

      (i) The Holder will update these sound field estimates every 12 hours, or more frequently when meteorological or oceanographic conditions change.

   (d) **Additional 1-km Buffer Zone**: The Holder of this Authorization will establish a one-kilometer (1-km) buffer zone around the LFA sonar mitigation zone.

   (e) **Ramp-Up Procedures for the HF/M3 System**: The Holder of a Letter of Authorization will ramp up the High Frequency / Marine Mammal Monitoring (HF/M3) active sonar referenced in 50 CFR § 218.234 from a power level beginning at a maximum source sound pressure level of 180 dB re: 1 μPa (rms) in 10-dB increments to operating levels over a period of no less than five minutes:

      (i) At least 30 minutes prior to any SURTASS LFA sonar transmission;

      (ii) Prior to any SURTASS LFA sonar calibrations or testing that are not part of regular SURTASS LFA sonar transmissions described in 50 CFR § 218.230; and

      (iii) Anytime after the Holder of this Authorization has powered-down the HF/M3 active sonar source for more than two minutes.

      (iv) The Holder of a Letter of Authorization will not increase the HF/M3 active sonar system's sound pressure level once they detect a marine mammal. The Holder may resume a ramp-up of the HF/M3 sonar system once marine mammals are no longer detected by the HF/M3 active sonar system, passive acoustic monitoring, or visual monitoring described in Condition 9.

(f) **Suspension/Delay for SURTASS LFA Sonar Transmissions**: If the Holder of this Authorization detects a marine mammal through monitoring required under 50 CFR § 218.235 and Condition 9 within either the LFA sonar mitigation zone or the 1-km buffer zone around the surveillance vessel, the Holder will immediately suspend or delay SURTASS LFA transmissions.

(g) **Resumption of SURTASS LFA Sonar Transmissions**: The Holder of this Authorization may resume/commence SURTASS LFA sonar transmissions 15 minutes after:

(i) All marine mammals have left the LFA sonar mitigation zone and the 1-km buffer zone around the surveillance vessel; and

(ii) There is no further detection of any marine mammal within the LFA sonar mitigation zone plus the 1-km buffer zone as determined by the visual, passive or active acoustic monitoring protocols described in 50 CFR § 218.235 and Condition 9.

(h) **Geographic Restrictions**: The Holder of this Authorization will not operate SURTASS LFA sonar such that the SURTASS LFA sonar sound field exceeds 180 dB re: 1 μ Pa (rms):

(i) At a distance of less than or equal to 22 km (14 miles (mi); 22 nautical miles (nm)) from any coastline, including offshore islands.

(ii) At a distance of less than or equal to 1 km (0.62 mi; 0.54 nm) seaward of the outer perimeter of any offshore biologically important area for marine mammals designated in 50 CFR § 218.234(f)(2) and described in Condition 8(h)(iii) during the period specified.

(iii) The Offshore Biologically Important Areas (OBIA) for marine mammals (with specified periods) for SURTASS LFA sonar operations are:

OBIA	Period of Effectiveness
Georges Bank	Year-round
Roseway Basin Right Whale Conservation Area	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	March through August, annually
Silver Bank and Navidad Bank	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	June through October, annually
Patagonian Shelf Break	Year-round
Southern Right Whale Seasonal Habitat	May through December, annually
Central California NMSs	June through November, annually
Antarctic Convergence Zone	October through March, annually

Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	June through November, annually
Coastal waters off Madagascar	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	November through December, annually
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	November through April, annually
Costa Rica Dome	Year-round
Great Barrier Reef Between 16° S and 21° S	May through September, annually
Bonney Upwelling on the southern coast of Australia	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually
Abrolhos Bank	August through November

Note: See § 218.234(f)(2) and Attachment 1 for coordinate information.

(i) **Operational Exception for SURTASS LFA Sound Field in OBIAs**: During military operations, SURTASS LFA sonar transmissions may exceed 180 dB re: 1 μPa (rms) within the boundaries of an OBIA, including operating within an OBIA, when the Holder of this Authorization determines that it is: 1) operationally necessary to continue tracking an existing underwater contact; or 2) operationally necessary to detect a new underwater contact within the OBIA. This exception does not apply to routine training and testing with the SURTASS LFA sonar systems.

(j) **Mission Planning**: The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization will plan all SURTASS LFA sonar missions to ensure that no more than 12 percent of any marine mammal stock listed in 50 CFR § 218.230(b)(1) through (3) would be taken by Level B harassment annually. This annual per-stock cap of 12 percent applies regardless of the number of LFA sonar vessels operating. The Holder of this Authorization must coordinate with the Holder of the Letters of Authorization issued to the USNS VICTORIOUS, USNS ABLE, and the USNS IMPECCABLE, to ensure that this condition is met for all vessels combined.

MITIGATION MONITORING

9. The Holder of this Authorization, and any individuals operating under his authority, must:

   (a) Perform the following for visual mitigation monitoring:

      (i) Marine mammal biologists qualified in conducting at-sea marine mammal visual monitoring from surface vessels will train and qualify designated ship personnel as lookouts to conduct at-sea visual monitoring.

      (ii) Train the lookouts in the most effective means to ensure quick and effective communication within the command structure in order to facilitate implementation of protective measures if they spot marine mammals.

      (iii) Conduct visual monitoring from the ship's bridge during daylight hours (30 minutes before sunrise until 30 minutes after sunset) during operations that employ SURTASS LFA sonar in the active mode. Maintain a topside watch with standard binoculars (7x) and with the naked eye.

   (b) Perform the following for passive acoustic monitoring:

      (i) Use the low frequency, passive SURTASS sonar system to listen for vocalizing marine mammals; and

   (c) Perform the following for active acoustic monitoring:

      (i) Use the HF/M3 active sonar to locate and track marine mammals in relation to the SURTASS LFA sonar vessel and the sound field produced by the SURTASS LFA sonar source array, subject to the ramp-up requirements in § 218.234(e) and Condition 8(e).

10. Mitigation monitoring under Conditions 9(a), (b), and (c) must:

   (a) Commence at least 30 minutes before the first SURTASS LFA sonar transmission (30 minutes before sunrise for visual monitoring);

   (b) Continue between transmission pings; and

   (c) Continue for at least 15 minutes after completion of the SURTASS LFA sonar transmission exercise (30 minutes after sunset for visual monitoring), or if marine mammals are showing abnormal behavioral patterns, for a period of time until behavior patterns return to normal or conditions prevent continued observations.

MONITORING

11. The Holder of this Authorization for activities described in 50 CFR § 218.230 must:

   (a) Cooperate with the NMFS and any other federal agency for monitoring the impacts of the activity on marine mammals; and

   (b) Designate qualified on-site individuals to conduct the mitigation, monitoring and reporting activities specified in this Letter of Authorization.

12. The Holder of this Authorization will conduct all monitoring required under the Letter of Authorization to increase knowledge of the affected marine mammal species. The Holder of this Authorization must:

(a) Convene a Scientific Advisory Group (SAG) to analyze different types of monitoring/research that could increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises.

(b) Continue to assess data from the Marine Mammal Monitoring Program and work toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances. Any portions of the analyses conducted by these scientists based on these data that are determined to be unclassified after appropriate security reviews will be made publically available.

(c) Continue to explore the feasibility of coordinating with other fleet assets and/or range monitoring programs to include the use of SURTASS LFA sonar towed horizontal line arrays to augment the collection of marine mammal vocalizations before, during, and after designated exercises.

(d) Continue to collect ambient noise data and explore the feasibility of declassifying and archiving the ambient noise data for incorporation into appropriate ocean noise budget efforts.

REPORTING

13. The Holder of this Authorization must:

(a) Provide a status update to the NMFS when the Holder submits the next annual application on efforts to assess the data collected by its undersea arrays and progress toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances.

(b) Draft a plan of action outlining a strategy for implementing the Scientific Advisory Group's (SAG) recommendations for going forward with beaked whale and/or harbor porpoise research; or describe in writing why such research is not feasible/or is unlikely to increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises, to be followed by a meeting with NMFS to discuss any other potential options.

(c) Systematically observe SURTASS LFA sonar operations for injured or disabled marine mammals and monitor the principal marine mammal stranding networks and other media to correlate analysis of any whale strandings that could potentially be associated with SURTASS LFA sonar operations.

(i) The Holder will ensure that the NMFS is notified immediately or as soon as clearance procedures allow if an injured, stranded, or dead marine mammal is found during or shortly after, and in the vicinity of, any SURTASS LFA operations. The Holder will report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov.

(ii) The Holder will provide the NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

(iii) In the event that an injured, stranded, or dead marine mammal is found by the Holder that is not in the vicinity of, or found during or shortly after SURTASS LFA sonar operations, the Holder will report the same information to NMFS as listed above as soon as operationally feasible and clearance procedures allow.

(d) In the event of a ship strike by the SURTASS LFA sonar vessel, at any time or place, the Holder must:

(i) Immediately, or as soon as clearance procedures allow, report to the NMFS the species identification (if known), location (lat/long) of the animal (or the strike if the animal has disappeared), and whether the animal is alive or dead (or unknown);

(ii) Report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov;

(iii) Report to the NMFS as soon as operationally feasible the size and length of the animal, an estimate of the injury status (e.g., dead, injured but alive, injured and moving, unknown, etc.), vessel class/type and operational status;

(iv) Report to the NMFS the vessel length, speed, and heading as soon as feasible; and

(v) Provide the NMFS a photo or video, if equipment is available.

(e) Submit classified and unclassified quarterly mission reports to the Director, Office of Protected Resources, NMFS, no later than 30 days after the end of each quarter beginning on the date of effectiveness of a Letter of Authorization or as specified in the appropriate Letter of Authorization. Each quarterly mission report will include all active-mode missions completed during that quarter. At a minimum, each classified mission report must contain the following information:

(i) Dates, times, and location of each vessel during each mission;

(ii) Information on sonar transmissions during each mission and records of any delays or suspensions;

(iii) Location of the SURTASS LFA sonar mitigation and buffer zones in relation to the LFA sonar array;

(iv) Marine mammal observations including animal type and/or species, number of animals sighted, date and time of observations, type of detection (visual, passive acoustic, HF/M3 sonar), bearing and range from vessel, abnormal behavior (if any), and remarks/narrative (as necessary).

(v) The report will include the Navy's estimates of the percentages of marine mammal stocks affected (both for the quarter and cumulatively for the year

covered by the Authorization) by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(vi) In the event that no SURTASS LFA sonar missions are completed during a quarter, a report of negative activity will be provided.

(f) Submit an annual, unclassified report to the Director, Office of Protected Resources, NMFS, no later than 45 days after expiration of this Authorization. At a minimum, the annual report will contain the following:

(i) An unclassified summary of the year's quarterly reports;

(ii) The Navy's estimates of the percentages of marine mammal stocks affected by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(iii) An analysis of the effectiveness of the mitigation measures with recommendations for improvements where applicable;

(iv) An assessment of any long-term effects from SURTASS LFA sonar operations; and

(v) Any discernible or estimated cumulative impacts from SURTASS LFA sonar operations.

14. The Holder of this Authorization must comply with the Terms and Conditions of the Incidental Take Statement corresponding to the Endangered Species Act Biological Opinion issued to the Navy and the National Marine Fisheries Service's Office of Protected Resources, Permits and Conservation Division.

15. A copy of this Authorization must be in the possession of the Officer in Charge of the Military Detachment (MILDET) on board the USNS EFFECTIVE in order to conduct the activity under the authority of this Letter of Authorization and Incidental Take Statement.

AUG 15 2012

Helen M. Golde, Acting Director
Office of Protected Resources
National Marine Fisheries Service

Date

Attachment 1 – Table 1 OBIA Coordinates

Name of Area	Location of Area	Months of Importance
Georges Bank	40°00'N, 72°30'W 39°37 N, 72°09'W 39°54'N, 71°43'W 40°02 N, 71°20'W 40°08'N, 71°01'W 40°04'N, 70°44'W 40°00'N, 69°24'W 40°16'N, 68°27'W 40°34'N, 67°13'W 41°00'N, 66°24'W 41°52'N, 65°47'W 42°20'N, 66°06'W 42°18'N, 67°23'W	Year-round
Roseway Basin Right Whale Conservation Area	43°05'N, 65°40'W 43°05'N, 65°03'W 42°45'N, 65°40'W 42°45'N, 65°03'W	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	41°00.000'N, 69°05.000'W 42°09.000'N, 67°08.400'W 42°53.436'N, 67°43.873'W 44°12.541'N, 67°16.847'W 44°14.911'N, 67°08.936'W 44°21.538'N, 67°03.663'W 44°26.736'N, 67°09.596'W 44°16.805'N, 67°27.394'W 44°11.118'N, 67°56.398'W 43°59.240'N, 68°08.263'W 43°36.800'N, 68°46.496'W 43°33.925'N, 69°19.455'W 43°32.008'N, 69°44.504'W 43°21.922'N, 70°06.257'W 43°04.084'N, 70°21.418'W 42°51.982'N, 70°31.965'W 42°45.187'N, 70°23.396'W 42°39.068'N, 70°30.188'W 42°32.892'N, 70°35.873'W 42°07.748'N, 70°28.257'W 42°05.592'N, 70°02.136'W 42°03.664'N, 69°44.000'W 41°40.000'N, 69°45.000'W	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	Critical Habitat Boundaries are coastal waters between 31°15' N and 30°15'N from the coast out 15 nautical miles (nmi); and the coastal waters between 30°15' N and 28°00''N from the coast out 5 nmi. (50 CFR §226.13(c)) OBIA Boundaries are coastal waters between 31°15''N and 30°15''N from 12 to 15 nmi.	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	57°03'N, 153°00'W 57°18'N, 151°30'W 57°00'N, 151°30'W 56°45'N, 153°00'W (50 CFR §226.215)	March through August, annually

10 USNS EFFECTIVE

Name of Area	Location of Area	Months of Importance
Silver Bank and Navidad Bank	Silver Bank: 20° 38.899'N, 69° 23.640'W 20° 55.706'N, 69° 57.984'W 20° 25.221'N, 70° 00.387'W 20° 12.833'N, 69° 40.604'W 20° 13.918'N, 69° 31.518'W 20° 28.680'N, 69° 31.900'W Navidad Bank: 20° 15.596'N, 68° 47.967'W 20° 11.971'N, 68° 54.810'W 19° 52.514'N, 69° 00.443'W 19° 54.957'N, 68° 51.430'W 19° 51.513'N, 68° 41.399'W	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	An exclusion zone following the 500-m isobath extending from 3°31.055'N, 9°12.226'E in the north offshore of Malabo southward to 8°57.470'S, 12°55.873'E offshore of Luanda.	June through October, annually
Patagonian Shelf Break	Between 200- and 2000-m isobaths and the following latitudes: 35°00'S, 39°00'S, 40°40'S, 42°30'S, 46°00'S, 48°50'S.	Year-round
Southern Right Whale Seasonal Habitat	Coastal waters between 42°00'S and 43°00'S from 12 to 15 nmi including the enclosed bays of Golfo Nuevo, Golfo San Jose, and San Matias. Golfos San Jose and San Nuevo are within 22 km (14 mi; 12 nmi) coastal exclusion zone.	May through December, annually
Central California National Marine Sanctuaries	Single stratum boundary created from the Cordell Bank (15 CFR 922.10), Gulf of the Farallones (15 CFR 922.80), and Monterey Bay (15 CFR 922.30) NMS legal boundaries. Monterey Bay NMS includes the Davidson Seamount Management Zone.	June through November, annually
Antarctic Convergence Zone	30°E to 80°E, 45°S 80°E to 150°E, 55°S 150°E to 50°W, 60°S 50°W to 30°E, 50°S	October through March, annually

Name of Area	Location of Area	Months of Importance
Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	54°09.436'N, 143°47.408'W 54°09.436'N, 143°17.354'W 54°01.161'N, 143°17.354'W 53°53.580'N, 143°13.398'W 53°26.963'N, 143°28.230'W 53°07.013'N, 143°35.481'W 52°48.705'N, 143°38.447'W 52°32.077'N, 143°37.788'W 52°21.605'N, 143°34.163'W 52°09.470'N, 143°26.582'W 51°57.686'N, 143°30.208'W 51°36.033'N, 143°42.794'W 51°08.082'N, 143°51.301'W 51°08.082'N, 144°16.742'W 51°24.514'N, 144°11.139'W 51°48.116'N, 144°10.809'W 52°03.194'N, 144°20.363'W 52°23.235'N, 144°10.150'W 52°28.674'N, 144°12.787'W 52°42.523'N, 144°10.150'W 53°12.972'N, 143°55.648'W 53°18.505'N, 143°56.637'W 53°23.041'N, 143°53.011'W 53°28.250'N, 143°53.341'W 53°44.039'N, 143°49.056'W 53°53.207'N, 143°50.045'W 53°59.819'N, 143°48.067'W	June through November, annually
Coastal waters off Madagascar	16°03'55.04"S, 50°27'12.59"E 16°12'23.03"S, 51°03'37.38"E 24°30'45.06"S, 48°26'00.94"E 24°15'28.07"S, 47°46'51.16"E 22°18'00.74"S, 48°14'13.52"E 20°52'24.12"S, 48°43'13.49"E 19°22'33.24"S, 49°15'45.47"E 18°29'46.08"S, 49°37'32.25"E 17°38'27.89"S, 49°44'27.17"E 17°24'39.12"S, 49°39'17.03"E 17°19'35.34"S, 49°54'23.82"E 16°45'41.71"S, 50°15'56.35"E	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	25°55'20.00"S, 44°05'15.45"E 25°46'31.36"S, 47°22'35.90"E 27°02'37.71"S, 48°03'31.08"E 35°13'51.37"S, 46°26'19.98"E 35°14'28.59"S, 42°35'49.20"E 31°36'57.96"S, 42°37'49.35"E 27°41'11.21"S, 44°30'11.01"E	November through December, annually

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Name of Area	Location of Area	Months of Importance
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	42°50.271'N, 06°31.883'E 42°55.603'N, 06°43.418'E 43°04.374'N, 06°52.165'E 43°12.600'N, 07°10.440'E 43°21.720'N, 07°19.380'E 43°30.600'N, 07°32.220'E 43°33.900'N, 07°49.920'E 43°36.420'N, 08°05.580'E 43°42.600'N, 08°22.140'E 43°50.880'N, 08°34.500'E 43°58.560'N, 08°47.700'E 43°59.040'N, 08°56.040'E 43°57.047'N, 09°03.540'E 43°52.260'N, 09°08.520'E 43°47.580'N, 09°13.500'E 43°36.060'N, 09°16.620'E 43°28.440'N, 09°05.820'E 43°21.360'N, 09°02.100'E 43°16.020'N, 08°57.240'E 43°04.440'N, 08°47.580'E 42°54.900'N, 08°35.400'E 42°45.900'N, 08°27.540'E 42°36.060'N, 08°22.020'E 42°22.620'N, 08°15.849'E 42°07.202'N, 08°17.174'E 41°52.800'N, 08°15.720'E 41°39.780'N, 08°05.280'E 41°28.200'N, 08°51.600'E 42°57.060'N, 06°19.860'E	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	21°10'02.179"N, 157°30'58.217"W 21°09'46.815"N, 157°30'22.367"W 21°06'39.882"N, 157°31'00.778"W 21°02'51.976"N, 157°30'30.049"W 20°59'52.725"N, 157°29'28.591"W 20°58'05.174"N, 157°27'35.919"W 20°55'49.456"N, 157°30'58.217"W 20°50'44.729"N, 157°42'42.418"W 20°51'02.654"N, 157°44'45.333"W 20°53'56.784"N, 157°46'04.716"W 20°56'32.988"N, 157°45'33.987"W 21°01'27.472"N, 157°43'10.586"W 21°05'20.499"N, 157°39'27.802"W 21°10'02.179"N, 157°30'58.217"W	November through April, annually
Costa Rica Dome	Centered at 9°N and 88°W	Year-round

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USNS EFFECTIVE

Name of Area	Location of Area	Months of Importance
Great Barrier Reef Between 16° S and 21° S	16°01.829'S, 145°38.783'E 15°52.215'S, 146°20.936'E 17°28.354'S, 146°59.392'E 20°16.228'S, 151°39.674'E 20°58.381'S, 150°30.897'E 20°17.007'S, 149°38.247'E 20°10.941'S, 149°18.247'E 20°02.403'S, 149°12.623'E 19°53.287'S, 149°03.986'E 19°49.866'S, 148°52.135'E 19°53.287'S, 148°44.302'E 19°47.965'S, 148°36.870'E 19°47.205'S, 148°26.024'E 19°19.978'S, 147°39.626'E 19°14.065'S, 147°37.014'E 19°08.913'S, 147°31.993'E 19°05.667'S, 147°24.160'E 19°07.576'S, 147°18.134'E 18°51.718'S, 146°51.219'E 18°44.258'S, 146°54.031'E 18°37.175'S, 146°51.420'E 18°31.620'S, 146°43.385'E 18°27.595'S, 146°40.573'E 17°36.676'S, 146°20.488'E 17°20.484'S, 146°16.671'E 17°07.745'S, 146°13.056'E 16°49.769'S, 146°11.047'E 16°41.835'S, 146°03.817'E 16°39.706'S, 145°54.979'E	May through September, annually
Bonney Upwelling on the west coast of Australia	37°12'20.036"S, 139°31'17.703"E 37°37'33.815"S, 139°42'42.508"E 38°10'36.144"S, 140°22'57.345"E 38°44'50.558"S, 141°33'50.342"E 39°07'04.125"S, 141°11'00.733"E 37°28'33.179"S, 139°10'52.263"E	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	20°59.735'N, 89°07.675'E 20°55.494'N, 89°09.484'E 20°52.883'N, 89°12.704'E 20°55.275'N, 89°18.133'E 21°04.558'N, 89°25.294'E 21°12.655'N, 89°25.354'E 21°13.279'N, 89°16.833'E 21°06.347'N, 89°15.011'E	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Boundaries within 23 nmi (26.5 m; 42.6 km) of the coast from 47°07' N to 48°30' N latitude 48°30'01.995"N, 125°58'38.786"W 48°16'55.605"N, 125°38'52.052"W 48°23'07.353"N, 125°17'10.935"W 48°12'38.241"N, 125°16'42.339"W 47°58'20.361"N, 125°31'14.517"W 47°58'20.361"N, 126°06'16.322"W 48°09'46.665"N, 126°25'48.758"W	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually

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Name of Area	Location of Area	Months of Importance
Abrolhos Bank	16°35'34.909"38°52'30.455" 16°35'31.619"38°43'41.069" 16°40'00.131"37°23'52.492" 19°30'59.069"37°23'52.446" 19°30'59.974"39°33'38.351" 19°20'24.752"39°30'33.03" 18°52'16.884"39°32'31.789" 18°45'09.937"39°32'27.709" 18°30'59.345"39°30'59.669" 18°27'28.985"39°30'13.453" 18°17'30.429"39°26'21.073" 18°07'43.518"39°19'52.924" 18°09'24.931"39°16'24.913" 18°10'04.585"39°12'30.425" 18°10'20.682"38°39'06.185" 18°08'50.404"38°35'00.059" 18°06'05.466"38°31'41.385" 18°02'09.399"38°29'26.179" 17°58'01.372"38°28'45.409" 17°53'58.883"38°29'34.612" 16°48'58.768"38°55'23.768" 16°43'15.682"38°53'40.007"	August through November, annually

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USNS EFFECTIVE

Attachment 2 – Authorized Take Estimates by Operating Region

The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization must also coordinate with the Holder of the Letter of Authorization issued to the USNS ABLE, the USNS VICTORIOUS, and the USNS IMPECCABLE, to ensure that these conditions are met for all vessels combined.

Category	Requested Take Authorization Level A harassment
Mysticetes	No more than 6 over the course of the regulations.
Odontocetes	No more than 25 over the course of the regulations.
Pinnipeds	No more than 25 over the course of the regulations.

East of Japan—Operational Area 1 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	2
Fin whale	2
Sei whale	7
Bryde's whale	7
Minke whale	16
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Baird's beaked whale	21
Cuvier's beaked whale	37
Ginkgo-toothed beaked whale	5
Hubbs' beaked whale	5
False killer whale	32
Pygmy killer whale	19
Short-finned pilot whale	118
Risso's dolphin	92
Common dolphin	658
Bottlenose dolphin	136
Spinner dolphin	0
Pantropical spotted Dolphin	88
Striped dolphin	57
Rough-toothed dolphin	44
Fraser's dolphin	45
Pacific white-sided dolphin	94

North Philippine Sea—Operational Area 2 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	21
Minke whale	304
North Pacific right whale	1
Sperm whale	143
Kogia spp.	281
Cuvier's beaked whale	146
Blainville's beaked whale	14
Ginkgo-toothed beaked whale	14
Killer whale	14
False killer whale	107
Pygmy killer whale	76
Melon-headed whale	45
Short-finned pilot whale	826
Risso's dolphin	833
Common dolphin	1644
Bottlenose dolphin	271
Spinner dolphin	0
Pantropical spotted dolphin	570
Striped dolphin	1369
Rough-toothed dolphin	481
Fraser's dolphin	265
Pacific white-sided dolphin	466

USNS EFFECTIVE

West Philippine Sea—Operational Area 3 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	14
Bryde's whale	42
Minke whale	141
Humpback whale (winter only)	2
Sperm whale	31
Kogia spp.	106
Cuvier's beaked whale	10
Blainville's beaked whale	20
Ginkgo-toothed beaked whale	19
False killer whale	131
Pygmy killer whale	94
Melon-headed whale	56
Short-finned pilot whale	215
Risso's dolphin	575
Common dolphin	3287
Bottlenose dolphin	473
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	343
Rough-toothed dolphin	336
Fraser's dolphin	20
Pacific white-sided dolphin	559

Offshore Guam—Operational Area 4 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	3
Fin whale	11
Sei whale	9
Bryde's whale	13
Minke whale	8
Humpback whale (winter only)	580
Sperm whale	31
Kogia spp.	386
Cuvier's beaked whale	191
Blainville's beaked whale	36
Ginkgo-toothed beaked whale	16
Longman's beaked whale	13
False killer whale	36
Pygmy killer whale	4
Melon-headed whale	137
Killer whale	6
Short-finned pilot whale	54
Risso's dolphin	34
Common dolphin	0
Bottlenose dolphin	0
Spinner dolphin	102
Pantropical spotted dolphin	570
Striped dolphin	172
Rough-toothed dolphin	15
Fraser's dolphin	127

Sea of Japan—Operational Area 5 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	44
Bryde's whale	5
Minke whale	16
Minke whale J stock	6
Gray whale	0
N. Pacific right whale	1
Sperm whale	41
Stejneger's beaked whale	80
Baird's beaked whale	18
Cuvier's beaked whale	245
Ginkgo-toothed beaked whale	30
False killer whale	161
Melon-headed whale	0
Short-finned pilot whale	33
Risso's dolphin	350
Common dolphin	3615
Bottlenose dolphin	32
Spinner dolphin	0
Pantropical spotted dolphin	285
Pacific white-sided dolphin	94
Dall's porpoise	1412

East China Sea—Operational Area 6 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	58
Minke whale J stock	24
Gray whale (winter only)	1
N. Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	64
Blainville's beaked whale	13
Ginkgo-toothed beaked whale	5
False killer whale	17
Pygmy killer whale	4
Melon-headed whale	63
Short-finned pilot whale	27
Risso's dolphin	150
Common dolphin	658
Bottlenose dolphin	106
Spinner dolphin	0
Pantropical spotted dolphin	154
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67
Pacific white-sided dolphin	0

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USNS EFFECTIVE

South China Sea—Operational Area 7 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	43
Gray whale (winter only)	1
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	0
Blainville's beaked whale	7
Ginkgo-toothed beaked whale	7
False killer whale	19
Pygmy killer whale	4
Melon-headed whale	70
Short-finned pilot whale	22
Risso's dolphin	175
Common dolphin	658
Bottlenose dolphin	85
Spinner dolphin	3249
Pantropical spotted dolphin	132
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67

USNS EFFECTIVE

Offshore Japan 25-40° N—Operational Area 8 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	11
Fin whale	5
Sei whale	15
Bryde's whale	21
Minke whale	13
Sperm whale	11
Kogia spp.	211
Baird's beaked whale	3
Cuvier's beaked whale	37
Mesoplodon spp.	16
False killer whale	117
Pygmy killer whale	7
Melon-headed whale	41
Short-finned pilot whale	0
Risso's dolphin	34
Common dolphin	3615
Bottlenose dolphin	17
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	856
Rough-toothed dolphin	15
Pacific white-sided dolphin	102
Hawaiian monk seal	1

USNS EFFECTIVE

Offshore Japan 10-25° N—Operational Area 9 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	9
Sperm whale	0
Kogia spp.	0
Cuvier's beaked whale	19
False killer whale	34
Melon-headed whale	19
Short-finned pilot whale	22
Risso's dolphin	42
Common dolphin	1,644
Bottlenose dolphin	17
Spinner dolphin	102
Pantropical spotted dolphin	395
Striped dolphin	172
Rough-toothed dolphin	0

Hawaii North—Operational Area 10 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	8
Fin whale	6
Bryde's whale	12
Minke whale	8
Humpback whale	91
Sperm whale	73
Kogia spp.	506
Cuvier's beaked whale	205
Blainville's beaked whale	39
Longman's beaked whale	14
Killer whale	6
False killer whale (Hawaii Pelagic)	9
False killer whale (Hawaii Insular)	9
Pygmy killer whale	17
Melon-headed whale	51
Short-finned pilot whale	66
Risso's dolphin	44
Bottlenose dolphin (Hawaii Pelagic)	193
Bottlenose dolphin (Kauai/Niihau)	1
Spinner dolphin	16
Pantropical spotted dolphin	43
Striped dolphin	62
Rough-toothed dolphin	164
Fraser's dolphin	156
Hawaiian monk seal	4

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USNS EFFECTIVE

Hawaii South—Operational Area 11 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	4
Fin whale	3
Bryde's whale	6
Minke whale	6
Humpback whale	0
Sperm whale	48
Kogia spp.	257
Cuvier's beaked whale	122
Blainville's beaked whale	23
Longman's beaked whale	8
Killer whale	3
False killer whale (Hawaii Pelagic)	5
False killer whale (Hawaii Insular)	5
Pygmy killer whale	9
Melon-headed whale	27
Short-finned pilot whale	63
Risso's dolphin	23
Bottlenose dolphin (Hawaii Pelagic)	25
Bottlenose dolphin (Oahu)	1
Bottlenose dolphin (4-Island)	1
Bottlenose dolphin	3
Spinner dolphin	20
Pantropical spotted dolphin	53
Striped dolphin	78
Rough-toothed dolphin	87
Fraser's dolphin	83
Hawaiian monk seal	3

USNS EFFECTIVE

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

LETTER OF AUTHORIZATION

The Chief of Naval Operations, Department of the Navy, 2000 Navy Pentagon, Washington, D.C. 20350-2000, and persons operating under his authority (i.e., Navy), are authorized to take marine mammals incidental to Navy operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar in accordance with 50 CFR Part 218, Subpart X–Taking of Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar subject to the provisions of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*; MMPA) and the following conditions:

1. This Authorization is valid for the period August 15, 2012, through August 14, 2013.

2. This Authorization is valid only for the unintentional taking of the species of marine mammals identified in 50 CFR § 218.230(b) and Condition 5 of this Authorization governing the taking of these animals incidental to the activity specified in Condition 3. This authorization shall be valid only for take consistent with the provisions in 50 CFR § 218.232 and the terms of this Authorization as specified in this Authorization.

3. This Authorization is valid only for activities associated with the operation of the SURTASS LFA Sonar onboard the United States Naval Ship (USNS) IMPECCABLE (T-AGOS 23). The signals transmitted by the SURTASS LFA sonar source must be between 100 and 500 Hertz (Hz) with a source level for each of the 18 projectors at no more than 215 decibels (dB) re: 1 micro Pascal (μPa) at 1 meter (m) root mean square (rms)) with a maximum duty cycle of 20 percent.

4. This Authorization, combined with Authorizations for the USNS VICTORIOUS (T-AGOS 19), USNS ABLE (T-AGOS 20), and USNS EFFECTIVE (T-AGOS 21), is valid for an estimated total of 20 nominal active sonar missions among the four SURTASS LFA sonar vessels (or equivalent shorter missions but not to exceed a total of 432 hours of transmit time per vessel during the period of effectiveness of this Authorization) within the following areas:

   (a) Up to 16 nominal missions in the northwestern Pacific Ocean which includes the following operational areas: east of Japan; the North Philippine Sea; the west Philippine Sea; offshore Guam; the Sea of Japan; the East China Sea; the South China Sea; and offshore Japan (25° to 40° N and 10° to 25° N).

USNS IMPECCABLE

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(b) Up to 4 nominal missions in the Hawaii Range Complex which includes the northern and southern Hawaii operational areas.

SPECIES AUTHORIZED AND LEVEL OF TAKE

5. The incidental take of marine mammals under the activity identified in Conditions 3 and 4 of this Authorization is limited to the following species:

(a) **Mysticetes**: blue whale (*Balaenoptera musculus*), Bryde's whale (*Balaenoptera edeni*), fin whale (*Balaenoptera physalus*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), northern Pacific right whale (*Eubalena japonica*), pygmy right whale (*Capera marginata*), sei whale (*Balaenoptera borealis*), and southern right whale (*Eubalaena australis*).

(b) **Odontocetes**: Baird's beaked whale (*Berardius bairdii*), Blainville's beaked whale (*Mesoplodon densirostris*), common bottlenose dolphin (*Tursiops truncatus*), Cuvier's beaked whale (*Ziphius cavirostris*), Dall's porpoise (*Phocoenoides dalli*), dwarf sperm and pygmy sperm whales (*Kogia simus and K. breviceps*), false killer whale (includes Hawaii pelagic and insular stocks) (*Pseudorca crassidens*), Fraser's dolphin (*Lagenodelphis hosei*), Gervais' beaked whale (*Mesoplodon europaeus*), ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), Gray's beaked whale (*Mesoplodon grayi*), Hector's beaked whale (*Mesoplodon hectori*), Hubbs' beaked whale (*Mesoplodon carhubbsi*), Indo-Pacific bottlenose dolphin (*Tursiops aduncus*), killer whale (*Orca orcinus*), long-beaked common dolphin (*Delphinus capensis*), Longman's beaked whale (*Indopacetus pacificus*), melon-headed whale (*Peponocephala electra*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), pantropical spotted dolphin (*Stenella attenuata*), Perrin's beaked whale (*Mesoplodon perrini*), pygmy beaked whale (*Mesoplodon peruvianus*), pygmy killer whale (*Feresa attenuata*), Risso's dolphin (*Grampus griseus*), rough-toothed dolphin (*Steno bredanensis*), short-beaked common dolphin (*Delphinus delphis*), short-finned pilot whale (*Globicephala macrorhynchus*), Sowerby's beaked whale (*Mesoplodon bidens*), spade-toothed beaked whale (*Mesoplodon traversii*), sperm whale (*Physeter macrocephalus*), spinner dolphin (*Stenella longirostris*), Stejneger's beaked whale (*Mesoplodon stejnegeri*), strap-toothed beaked whale (*Mesoplodon layardii*), striped dolphin (*Stenella coeruleoalba*), and True's beaked whale (*Mesoplodon mirus*).

(c) **Pinnipeds**: Hawaiian monk seal (*Monachus shauinslandi*)

6. The taking of marine mammals by the Holder of this Authorization is limited to the incidental taking of marine mammal species identified in Condition 5 by Level A and Level B harassment (as defined in the MMPA and 50 CFR § 216.3) within those areas authorized under Condition 4. The take, by harassment, that occurs during the year covered by this Authorization may not exceed the amount identified in Attachment 2.

7. Taking of marine mammal species not listed under Condition 5 by harassment, injury, or mortality, or the taking by mortality of any marine mammal species listed under Condition 5 is prohibited.

MITIGATION

8. The Holder of this Authorization, and any individuals operating under his authority, must conduct the activity identified in 50 CFR § 218.230 and Condition 3 of this Authorization in a manner that minimizes, to the greatest extent practicable, adverse impacts on marine mammals, their habitats, and the availability of marine mammals for subsistence. When conducting operations identified in 50 CFR § 218.230, the following mitigation measures must be implemented:

   (a) The Holder of this Authorization, and any individuals operating under his authority, must not broadcast the SURTASS LFA sonar signal at a frequency greater than 500 Hz.

   (b) Through mitigation described under 50 CFR § 218.234 and Condition 9 (Mitigation Monitoring) of this Authorization, the Holder of this Authorization and any individuals operating under his authority must ensure, to the greatest extent practicable, that no marine mammal is subjected to a sound pressure level of 180 dB re: 1 μPa (rms) or greater.

   (c) **LFA Sonar Mitigation Zone**: Prior to commencing and during SURTASS LFA sonar transmissions, the Holder of this Authorization will use near-real-time environmental data and underwater acoustic prediction models to determine the propagation of the SURTASS LFA sonar signals in the operating area. The Holder must determine the distance from the SURTASS LFA sonar source to the 180-dB re: 1 μPa isopleth (rms) (i.e., the LFA sonar mitigation zone) in order to comply with Condition 8(b).

      (i) The Holder will update these sound field estimates every 12 hours, or more frequently when meteorological or oceanographic conditions change.

   (d) **Additional 1-km Buffer Zone**: The Holder of this Authorization will establish a one-kilometer (1-km) buffer zone around the LFA sonar mitigation zone.

   (e) **Ramp-Up Procedures for the HF/M3 System**: The Holder of a Letter of Authorization will ramp up the High Frequency / Marine Mammal Monitoring (HF/M3) active sonar referenced in 50 CFR § 218.234 from a power level beginning at a maximum source sound pressure level of 180 dB re: 1 μPa (rms) in 10-dB increments to operating levels over a period of no less than five minutes:

      (i) At least 30 minutes prior to any SURTASS LFA sonar transmission;

      (ii) Prior to any SURTASS LFA sonar calibrations or testing that are not part of regular SURTASS LFA sonar transmissions described in 50 CFR § 218.230; and

      (iii) Anytime after the Holder of this Authorization has powered-down the HF/M3 active sonar source for more than two minutes.

      (iv) The Holder of a Letter of Authorization will not increase the HF/M3 active sonar system's sound pressure level once they detect a marine mammal. The Holder may resume a ramp-up of the HF/M3 sonar system once marine mammals are no longer detected by the HF/M3 active sonar system, passive acoustic monitoring, or visual monitoring described in Condition 9.

(f) **Suspension/Delay for SURTASS LFA Sonar Transmissions**: If the Holder of this Authorization detects a marine mammal through monitoring required under 50 CFR § 218.235 and Condition 9 within either the LFA sonar mitigation zone or the 1-km buffer zone around the surveillance vessel, the Holder will immediately suspend or delay SURTASS LFA transmissions.

(g) **Resumption of SURTASS LFA Sonar Transmissions**: The Holder of this Authorization may resume/commence SURTASS LFA sonar transmissions 15 minutes after:

(i) All marine mammals have left the LFA sonar mitigation zone and the 1-km buffer zone around the surveillance vessel; and

(ii) There is no further detection of any marine mammal within the LFA sonar mitigation zone plus the 1-km buffer zone as determined by the visual, passive or active acoustic monitoring protocols described in 50 CFR § 218.235 and Condition 9.

(h) **Geographic Restrictions**: The Holder of this Authorization will not operate SURTASS LFA sonar such that the SURTASS LFA sonar sound field exceeds 180 dB re: 1 μ Pa (rms):

(i) At a distance of less than or equal to 22 km (14 miles (mi); 22 nautical miles (nm)) from any coastline, including offshore islands.

(ii) At a distance of less than or equal to 1 km (0.62 mi; 0.54 nm) seaward of the outer perimeter of any offshore biologically important area for marine mammals designated in 50 CFR § 218.234(f)(2) and described in Condition 8(h)(iii) during the period specified.

(iii) The Offshore Biologically Important Areas (OBIA) for marine mammals (with specified periods) for SURTASS LFA sonar operations are:

OBIA	Period of Effectiveness
Georges Bank	Year-round
Roseway Basin Right Whale Conservation Area	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	March through August, annually
Silver Bank and Navidad Bank	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	June through October, annually
Patagonian Shelf Break	Year-round
Southern Right Whale Seasonal Habitat	May through December, annually
Central California NMSs	June through November, annually
Antarctic Convergence Zone	October through March, annually

Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	June through November, annually
Coastal waters off Madagascar	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	November through December, annually
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	November through April, annually
Costa Rica Dome	Year-round
Great Barrier Reef Between 16° S and 21° S	May through September, annually
Bonney Upwelling on the southern coast of Australia	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually
Abrolhos Bank	August through November

Note: See § 218.234(f)(2) and Attachment 1 for coordinate information.

(i) **Operational Exception for SURTASS LFA Sound Field in OBIAs:** During military operations, SURTASS LFA sonar transmissions may exceed 180 dB re: 1 μPa (rms) within the boundaries of an OBIA, including operating within an OBIA, when the Holder of this Authorization determines that it is: 1) operationally necessary to continue tracking an existing underwater contact; or 2) operationally necessary to detect a new underwater contact within the OBIA. This exception does not apply to routine training and testing with the SURTASS LFA sonar systems.

(j) **Mission Planning**: The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization will plan all SURTASS LFA sonar missions to ensure that no more than 12 percent of any marine mammal stock listed in 50 CFR § 218.230(b)(1) through (3) would be taken by Level B harassment annually. This annual per-stock cap of 12 percent applies regardless of the number of LFA sonar vessels operating. The Holder of this Authorization must coordinate with the Holder of the Letters of Authorization issued to the USNS VICTORIOUS, USNS ABLE, and the USNS EFFECTIVE, to ensure that this condition is met for all vessels combined.

MITIGATION MONITORING

9. The Holder of this Authorization, and any individuals operating under his authority, must:

   (a) Perform the following for visual mitigation monitoring:

      (i) Marine mammal biologists qualified in conducting at-sea marine mammal visual monitoring from surface vessels will train and qualify designated ship personnel as lookouts to conduct at-sea visual monitoring.

      (ii) Train the lookouts in the most effective means to ensure quick and effective communication within the command structure in order to facilitate implementation of protective measures if they spot marine mammals.

      (iii) Conduct visual monitoring from the ship's bridge during daylight hours (30 minutes before sunrise until 30 minutes after sunset) during operations that employ SURTASS LFA sonar in the active mode. Maintain a topside watch with standard binoculars (7x) and with the naked eye.

   (b) Perform the following for passive acoustic monitoring:

      (i) Use the low frequency, passive SURTASS sonar system to listen for vocalizing marine mammals; and

   (c) Perform the following for active acoustic monitoring:

      (i) Use the HF/M3 active sonar to locate and track marine mammals in relation to the SURTASS LFA sonar vessel and the sound field produced by the SURTASS LFA sonar source array, subject to the ramp-up requirements in § 218.234(e) and Condition 8(e).

10. Mitigation monitoring under Conditions 9(a), (b), and (c) must:

   (a) Commence at least 30 minutes before the first SURTASS LFA sonar transmission (30 minutes before sunrise for visual monitoring);

   (b) Continue between transmission pings; and

   (c) Continue for at least 15 minutes after completion of the SURTASS LFA sonar transmission exercise (30 minutes after sunset for visual monitoring), or if marine mammals are showing abnormal behavioral patterns, for a period of time until behavior patterns return to normal or conditions prevent continued observations.

MONITORING

11. The Holder of this Authorization for activities described in 50 CFR § 218.230 must:

   (a) Cooperate with the NMFS and any other federal agency for monitoring the impacts of the activity on marine mammals; and

   (b) Designate qualified on-site individuals to conduct the mitigation, monitoring and reporting activities specified in this Letter of Authorization.

12. The Holder of this Authorization will conduct all monitoring required under the Letter of Authorization to increase knowledge of the affected marine mammal species. The Holder of this Authorization must:

(a) Convene a Scientific Advisory Group (SAG) to analyze different types of monitoring/research that could increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises.

(b) Continue to assess data from the Marine Mammal Monitoring Program and work toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances. Any portions of the analyses conducted by these scientists based on these data that are determined to be unclassified after appropriate security reviews will be made publically available.

(c) Continue to explore the feasibility of coordinating with other fleet assets and/or range monitoring programs to include the use of SURTASS LFA sonar towed horizontal line arrays to augment the collection of marine mammal vocalizations before, during, and after designated exercises.

(d) Continue to collect ambient noise data and explore the feasibility of declassifying and archiving the ambient noise data for incorporation into appropriate ocean noise budget efforts.

REPORTING

13. The Holder of this Authorization must:

(a) Provide a status update to the NMFS when the Holder submits the next annual application on efforts to assess the data collected by its undersea arrays and progress toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances.

(b) Draft a plan of action outlining a strategy for implementing the Scientific Advisory Group's (SAG) recommendations for going forward with beaked whale and/or harbor porpoise research; or describe in writing why such research is not feasible/or is unlikely to increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises, to be followed by a meeting with NMFS to discuss any other potential options.

(c) Systematically observe SURTASS LFA sonar operations for injured or disabled marine mammals and monitor the principal marine mammal stranding networks and other media to correlate analysis of any whale strandings that could potentially be associated with SURTASS LFA sonar operations.

(i) The Holder will ensure that the NMFS is notified immediately or as soon as clearance procedures allow if an injured, stranded, or dead marine mammal is found during or shortly after, and in the vicinity of, any SURTASS LFA operations. The Holder will report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov.

(ii) The Holder will provide the NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

(iii) In the event that an injured, stranded, or dead marine mammal is found by the Holder that is not in the vicinity of, or found during or shortly after SURTASS LFA sonar operations, the Holder will report the same information to NMFS as listed above as soon as operationally feasible and clearance procedures allow.

(d) In the event of a ship strike by the SURTASS LFA sonar vessel, at any time or place, the Holder must:

(i) Immediately, or as soon as clearance procedures allow, report to the NMFS the species identification (if known), location (lat/long) of the animal (or the strike if the animal has disappeared), and whether the animal is alive or dead (or unknown);

(ii) Report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov;

(iii) Report to the NMFS as soon as operationally feasible the size and length of the animal, an estimate of the injury status (e.g., dead, injured but alive, injured and moving, unknown, etc.), vessel class/type and operational status;

(iv) Report to the NMFS the vessel length, speed, and heading as soon as feasible; and

(v) Provide the NMFS a photo or video, if equipment is available.

(e) Submit classified and unclassified quarterly mission reports to the Director, Office of Protected Resources, NMFS, no later than 30 days after the end of each quarter beginning on the date of effectiveness of a Letter of Authorization or as specified in the appropriate Letter of Authorization. Each quarterly mission report will include all active-mode missions completed during that quarter. At a minimum, each classified mission report must contain the following information:

(i) Dates, times, and location of each vessel during each mission;

(ii) Information on sonar transmissions during each mission and records of any delays or suspensions;

(iii) Location of the SURTASS LFA sonar mitigation and buffer zones in relation to the LFA sonar array;

(iv) Marine mammal observations including animal type and/or species, number of animals sighted, date and time of observations, type of detection (visual, passive acoustic, HF/M3 sonar), bearing and range from vessel, abnormal behavior (if any), and remarks/narrative (as necessary).

(v) The report will include the Navy's estimates of the percentages of marine mammal stocks affected (both for the quarter and cumulatively for the year

covered by the Authorization) by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(vi) In the event that no SURTASS LFA sonar missions are completed during a quarter, a report of negative activity will be provided.

(f) Submit an annual, unclassified report to the Director, Office of Protected Resources, NMFS, no later than 45 days after expiration of this Authorization. At a minimum, the annual report will contain the following:

(i) An unclassified summary of the year's quarterly reports;

(ii) The Navy's estimates of the percentages of marine mammal stocks affected by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(iii) An analysis of the effectiveness of the mitigation measures with recommendations for improvements where applicable;

(iv) An assessment of any long-term effects from SURTASS LFA sonar operations; and

(v) Any discernible or estimated cumulative impacts from SURTASS LFA sonar operations.

14. The Holder of this Authorization must comply with the Terms and Conditions of the Incidental Take Statement corresponding to the Endangered Species Act Biological Opinion issued to the Navy and the National Marine Fisheries Service's Office of Protected Resources, Permits and Conservation Division.

15. A copy of this Authorization must be in the possession of the Officer in Charge of the Military Detachment (MILDET) on board the USNS IMPECCABLE in order to conduct the activity under the authority of this Letter of Authorization and Incidental Take Statement.

AUG 15 2012

Helen M. Golde, Acting Director
Office of Protected Resources
National Marine Fisheries Service

Date

Attachment 1 – Table 1 OBIA Coordinates

Name of Area	Location of Area	Months of Importance
Georges Bank	40°00'N, 72°30'W 39°37 N, 72°09'W 39°54'N, 71°43'W 40°02 N, 71°20'W 40°08'N, 71°01'W 40°04'N, 70°44'W 40°00'N, 69°24'W 40°16'N, 68°27'W 40°34'N, 67°13'W 41°00'N, 66°24'W 41°52'N, 65°47'W 42°20'N, 66°06'W 42°18'N, 67°23'W	Year-round
Roseway Basin Right Whale Conservation Area	43°05'N, 65°40'W 43°05'N, 65°03'W 42°45'N, 65°40'W 42°45'N, 65°03'W	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	41°00.000'N, 69°05.000'W 42°09.000'N, 67°08.400'W 42°53.436'N, 67°43.873'W 44°12.541'N, 67°16.847'W 44°14.911'N, 67°08.936'W 44°21.538'N, 67°03.663'W 44°26.736'N, 67°09.596'W 44°16.805'N, 67°27.394'W 44°11.118'N, 67°56.398'W 43°59.240'N, 68°08.263'W 43°36.800'N, 68°46.496'W 43°33.925'N, 69°19.455'W 43°32.008'N, 69°44.504'W 43°21.922'N, 70°06.257'W 43°04.084'N, 70°21.418'W 42°51.982'N, 70°31.965'W 42°45.187'N, 70°23.396'W 42°39.068'N, 70°30.188'W 42°32.892'N, 70°35.873'W 42°07.748'N, 70°28.257'W 42°05.592'N, 70°02.136'W 42°03.664'N, 69°44.000'W 41°40.000'N, 69°45.000'W	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	Critical Habitat Boundaries are coastal waters between 31°15' N and 30°15'N from the coast out 15 nautical miles (nmi); and the coastal waters between 30°15' N and 28°00''N from the coast out 5 nmi. (50 CFR §226.13(c)) OBIA Boundaries are coastal waters between 31°15''N and 30°15''N from 12 to 15 nmi.	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	57°03'N, 153°00'W 57°18'N, 151°30'W 57°00'N, 151°30'W 56°45'N, 153°00'W (50 CFR §226.215)	March through August, annually

Name of Area	Location of Area	Months of Importance
Silver Bank and Navidad Bank	Silver Bank: 20° 38.899'N, 69° 23.640'W 20° 55.706'N, 69° 57.984'W 20° 25.221'N, 70° 00.387'W 20° 12.833'N, 69° 40.604'W 20° 13.918'N, 69° 31.518'W 20° 28.680'N, 69° 31.900'W Navidad Bank: 20° 15.596'N, 68° 47.967'W 20° 11.971'N, 68° 54.810'W 19° 52.514'N, 69° 00.443'W 19° 54.957'N, 68° 51.430'W 19° 51.513'N, 68° 41.399'W	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	An exclusion zone following the 500-m isobath extending from 3°31.055'N, 9°12.226'E in the north offshore of Malabo southward to 8°57.470'S, 12°55.873'E offshore of Luanda.	June through October, annually
Patagonian Shelf Break	Between 200- and 2000-m isobaths and the following latitudes: 35°00'S, 39°00'S, 40°40'S, 42°30'S, 46°00'S, 48°50'S.	Year-round
Southern Right Whale Seasonal Habitat	Coastal waters between 42°00'S and 43°00'S from 12 to 15 nmi including the enclosed bays of Golfo Nuevo, Golfo San Jose, and San Matias. Golfos San Jose and San Nuevo are within 22 km (14 mi; 12 nmi) coastal exclusion zone.	May through December, annually
Central California National Marine Sanctuaries	Single stratum boundary created from the Cordell Bank (15 CFR 922.10), Gulf of the Farallones (15 CFR 922.80), and Monterey Bay (15 CFR 922.30) NMS legal boundaries. Monterey Bay NMS includes the Davidson Seamount Management Zone.	June through November, annually
Antarctic Convergence Zone	30°E to 80°E, 45°S 80°E to 150°E, 55°S 150°E to 50°W, 60°S 50°W to 30°E, 50°S	October through March, annually

Name of Area	Location of Area	Months of Importance
Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	54°09.436'N, 143°47.408'W 54°09.436'N, 143°17.354'W 54°01.161'N, 143°17.354'W 53°53.580'N, 143°13.398'W 53°26.963'N, 143°28.230'W 53°07.013'N, 143°35.481'W 52°48.705'N, 143°38.447'W 52°32.077'N, 143°37.788'W 52°21.605'N, 143°34.163'W 52°09.470'N, 143°26.582'W 51°57.686'N, 143°30.208'W 51°36.033'N, 143°42.794'W 51°08.082'N, 143°51.301'W 51°08.082'N, 144°16.742'W 51°24.514'N, 144°11.139'W 51°48.116'N, 144°10.809'W 52°03.194'N, 144°20.363'W 52°23.235'N, 144°10.150'W 52°28.674'N, 144°12.787'W 52°42.523'N, 144°10.150'W 53°12.972'N, 143°55.648'W 53°18.505'N, 143°56.637'W 53°23.041'N, 143°53.011'W 53°28.250'N, 143°53.341'W 53°44.039'N, 143°49.056'W 53°53.207'N, 143°50.045'W 53°59.819'N, 143°48.067'W	June through November, annually
Coastal waters off Madagascar	16°03'55.04"S, 50°27'12.59"E 16°12'23.03"S, 51°03'37.38"E 24°30'45.06"S, 48°26'00.94"E 24°15'28.07"S, 47°46'51.16"E 22°18'00.74"S, 48°14'13.52"E 20°52'24.12"S, 48°43'13.49"E 19°22'33.24"S, 49°15'45.47"E 18°29'46.08"S, 49°37'32.25"E 17°38'27.89"S, 49°44'27.17"E 17°24'39.12"S, 49°39'17.03"E 17°19'35.34"S, 49°54'23.82"E 16°45'41.71"S, 50°15'56.35"E	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	25°55'20.00"S, 44°05'15.45"E 25°46'31.36"S, 47°22'35.90"E 27°02'37.71"S, 48°03'31.08"E 35°13'51.37"S, 46°26'19.98"E 35°14'28.59"S, 42°35'49.20"E 31°36'57.96"S, 42°37'49.35"E 27°41'11.21"S, 44°30'11.01"E	November through December, annually

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Name of Area	Location of Area	Months of Importance
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	42°50.271'N, 06°31.883'E 42°55.603'N, 06°43.418'E 43°04.374'N, 06°52.165'E 43°12.600'N, 07°10.440'E 43°21.720'N, 07°19.380'E 43°30.600'N, 07°32.220'E 43°33.900'N, 07°49.920'E 43°36.420'N, 08°05.580'E 43°42.600'N, 08°22.140'E 43°50.880'N, 08°34.500'E 43°58.560'N, 08°47.700'E 43°59.040'N, 08°56.040'E 43°57.047'N, 09°03.540'E 43°52.260'N, 09°08.520'E 43°47.580'N, 09°13.500'E 43°36.060'N, 09°16.620'E 43°28.440'N, 09°05.820'E 43°21.360'N, 09°02.100'E 43°16.020'N, 08°57.240'E 43°04.440'N, 08°47.580'E 42°54.900'N, 08°35.400'E 42°45.900'N, 08°27.540'E 42°36.060'N, 08°22.020'E 42°22.620'N, 08°15.849'E 42°07.202'N, 08°17.174'E 41°52.800'N, 08°15.720'E 41°39.780'N, 08°05.280'E 41°28.200'N, 08°51.600'E 42°57.060'N, 06°19.860'E	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	21°10'02.179"N, 157°30'58.217"W 21°09'46.815"N, 157°30'22.367"W 21°06'39.882"N, 157°31'00.778"W 21°02'51.976"N, 157°30'30.049"W 20°59'52.725"N, 157°29'28.591"W 20°58'05.174"N, 157°27'35.919"W 20°55'49.456"N, 157°30'58.217"W 20°50'44.729"N, 157°42'42.418"W 20°51'02.654"N, 157°44'45.333"W 20°53'56.784"N, 157°46'04.716"W 20°56'32.988"N, 157°45'33.987"W 21°01'27.472"N, 157°43'10.586"W 21°05'20.499"N, 157°39'27.802"W 21°10'02.179"N, 157°30'58.217"W	November through April, annually
Costa Rica Dome	Centered at 9°N and 88°W	Year-round

Name of Area	Location of Area	Months of Importance
Great Barrier Reef Between 16° S and 21° S	16°01.829'S, 145°38.783'E 15°52.215'S, 146°20.936'E 17°28.354'S, 146°59.392'E 20°16.228'S, 151°39.674'E 20°58.381'S, 150°30.897'E 20°17.007'S, 149°38.247'E 20°10.941'S, 149°18.247'E 20°02.403'S, 149°12.623'E 19°53.287'S, 149°03.986'E 19°49.866'S, 148°52.135'E 19°53.287'S, 148°44.302'E 19°47.965'S, 148°36.870'E 19°47.205'S, 148°26.024'E 19°19.978'S, 147°39.626'E 19°14.065'S, 147°37.014'E 19°08.913'S, 147°31.993'E 19°05.667'S, 147°24.160'E 19°07.576'S, 147°18.134'E 18°51.718'S, 146°51.219'E 18°44.258'S, 146°54.031'E 18°37.175'S, 146°51.420'E 18°31.620'S, 146°43.385'E 18°27.595'S, 146°40.573'E 17°36.676'S, 146°20.488'E 17°20.484'S, 146°16.671'E 17°07.745'S, 146°13.056'E 16°49.769'S, 146°11.047'E 16°41.835'S, 146°03.817'E 16°39.706'S, 145°54.979'E	May through September, annually
Bonney Upwelling on the west coast of Australia	37°12'20.036"S, 139°31'17.703"E 37°37'33.815"S, 139°42'42.508"E 38°10'36.144"S, 140°22'57.345"E 38°44'50.558"S, 141°33'50.342"E 39°07'04.125"S, 141°11'00.733"E 37°28'33.179"S, 139°10'52.263"E	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	20°59.735'N, 89°07.675'E 20°55.494'N, 89°09.484'E 20°52.883'N, 89°12.704'E 20°55.275'N, 89°18.133'E 21°04.558'N, 89°25.294'E 21°12.655'N, 89°25.354'E 21°13.279'N, 89°16.833'E 21°06.347'N, 89°15.011'E	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Boundaries within 23 nmi (26.5 m; 42.6 km) of the coast from 47°07' N to 48°30' N latitude 48°30'01.995"N, 125°58'38.786"W 48°16'55.605"N, 125°38'52.052"W 48°23'07.353"N, 125°17'10.935"W 48°12'38.241"N, 125°16'42.339"W 47°58'20.361"N, 125°31'14.517"W 47°58'20.361"N, 126°06'16.322"W 48°09'46.665"N, 126°25'48.758"W	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually

Name of Area	Location of Area	Months of Importance
Abrolhos Bank	16°35'34.909"38°52'30.455" 16°35'31.619"38°43'41.069" 16°40'00.131"37°23'52.492" 19°30'59.069"37°23'52.446" 19°30'59.974"39°33'38.351" 19°20'24.752"39°30'33.03" 18°52'16.884"39°32'31.789" 18°45'09.937"39°32'27.709" 18°30'59.345"39°30'59.669" 18°27'28.985"39°30'13.453" 18°17'30.429"39°26'21.073" 18°07'43.518"39°19'52.924" 18°09'24.931"39°16'24.913" 18°10'04.585"39°12'30.425" 18°10'20.682"38°39'06.185" 18°08'50.404"38°35'00.059" 18°06'05.466"38°31'41.385" 18°02'09.399"38°29'26.179" 17°58'01.372"38°28'45.409" 17°53'58.883"38°29'34.612" 16°48'58.768"38°55'23.768" 16°43'15.682"38°53'40.007"	August through November, annually

Attachment 2 – Authorized Take Estimates by Operating Region

The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization must also coordinate with the Holder of the Letter of Authorization issued to the USNS ABLE, the USNS VICTORIOUS, and the USNS EFFECTIVE, to ensure that these conditions are met for all vessels combined.

Category	Requested Take Authorization Level A harassment
Mysticetes	No more than 6 over the course of the regulations.
Odontocetes	No more than 25 over the course of the regulations.
Pinnipeds	No more than 25 over the course of the regulations.

East of Japan—Operational Area 1 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	2
Fin whale	2
Sei whale	7
Bryde's whale	7
Minke whale	16
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Baird's beaked whale	21
Cuvier's beaked whale	37
Ginkgo-toothed beaked whale	5
Hubbs' beaked whale	5
False killer whale	32
Pygmy killer whale	19
Short-finned pilot whale	118
Risso's dolphin	92
Common dolphin	658
Bottlenose dolphin	136
Spinner dolphin	0
Pantropical spotted Dolphin	88
Striped dolphin	57
Rough-toothed dolphin	44
Fraser's dolphin	45
Pacific white-sided dolphin	94

North Philippine Sea—Operational Area 2 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	21
Minke whale	304
North Pacific right whale	1
Sperm whale	143
Kogia spp.	281
Cuvier's beaked whale	146
Blainville's beaked whale	14
Ginkgo-toothed beaked whale	14
Killer whale	14
False killer whale	107
Pygmy killer whale	76
Melon-headed whale	45
Short-finned pilot whale	826
Risso's dolphin	833
Common dolphin	1644
Bottlenose dolphin	271
Spinner dolphin	0
Pantropical spotted dolphin	570
Striped dolphin	1369
Rough-toothed dolphin	481
Fraser's dolphin	265
Pacific white-sided dolphin	466

West Philippine Sea—Operational Area 3 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	14
Bryde's whale	42
Minke whale	141
Humpback whale (winter only)	2
Sperm whale	31
Kogia spp.	106
Cuvier's beaked whale	10
Blainville's beaked whale	20
Ginkgo-toothed beaked whale	19
False killer whale	131
Pygmy killer whale	94
Melon-headed whale	56
Short-finned pilot whale	215
Risso's dolphin	575
Common dolphin	3287
Bottlenose dolphin	473
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	343
Rough-toothed dolphin	336
Fraser's dolphin	20
Pacific white-sided dolphin	559

Offshore Guam—Operational Area 4 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	3
Fin whale	11
Sei whale	9
Bryde's whale	13
Minke whale	8
Humpback whale (winter only)	580
Sperm whale	31
Kogia spp.	386
Cuvier's beaked whale	191
Blainville's beaked whale	36
Ginkgo-toothed beaked whale	16
Longman's beaked whale	13
False killer whale	36
Pygmy killer whale	4
Melon-headed whale	137
Killer whale	6
Short-finned pilot whale	54
Risso's dolphin	34
Common dolphin	0
Bottlenose dolphin	0
Spinner dolphin	102
Pantropical spotted dolphin	570
Striped dolphin	172
Rough-toothed dolphin	15
Fraser's dolphin	127

Sea of Japan—Operational Area 5 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	44
Bryde's whale	5
Minke whale	16
Minke whale J stock	6
Gray whale	0
N. Pacific right whale	1
Sperm whale	41
Stejneger's beaked whale	80
Baird's beaked whale	18
Cuvier's beaked whale	245
Ginkgo-toothed beaked whale	30
False killer whale	161
Melon-headed whale	0
Short-finned pilot whale	33
Risso's dolphin	350
Common dolphin	3615
Bottlenose dolphin	32
Spinner dolphin	0
Pantropical spotted dolphin	285
Pacific white-sided dolphin	94
Dall's porpoise	1412

East China Sea—Operational Area 6 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	58
Minke whale J stock	24
Gray whale (winter only)	1
N. Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	64
Blainville's beaked whale	13
Ginkgo-toothed beaked whale	5
False killer whale	17
Pygmy killer whale	4
Melon-headed whale	63
Short-finned pilot whale	27
Risso's dolphin	150
Common dolphin	658
Bottlenose dolphin	106
Spinner dolphin	0
Pantropical spotted dolphin	154
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67
Pacific white-sided dolphin	0

South China Sea—Operational Area 7 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	43
Gray whale (winter only)	1
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	0
Blainville's beaked whale	7
Ginkgo-toothed beaked whale	7
False killer whale	19
Pygmy killer whale	4
Melon-headed whale	70
Short-finned pilot whale	22
Risso's dolphin	175
Common dolphin	658
Bottlenose dolphin	85
Spinner dolphin	3249
Pantropical spotted dolphin	132
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67

Offshore Japan 25-40° N—Operational Area 8 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	11
Fin whale	5
Sei whale	15
Bryde's whale	21
Minke whale	13
Sperm whale	11
Kogia spp.	211
Baird's beaked whale	3
Cuvier's beaked whale	37
Mesoplodon spp.	16
False killer whale	117
Pygmy killer whale	7
Melon-headed whale	41
Short-finned pilot whale	0
Risso's dolphin	34
Common dolphin	3615
Bottlenose dolphin	17
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	856
Rough-toothed dolphin	15
Pacific white-sided dolphin	102
Hawaiian monk seal	1

Offshore Japan 10-25° N—Operational Area 9 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	9
Sperm whale	0
Kogia spp.	0
Cuvier's beaked whale	19
False killer whale	34
Melon-headed whale	19
Short-finned pilot whale	22
Risso's dolphin	42
Common dolphin	1,644
Bottlenose dolphin	17
Spinner dolphin	102
Pantropical spotted dolphin	395
Striped dolphin	172
Rough-toothed dolphin	0

Hawaii North—Operational Area 10 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	8
Fin whale	6
Bryde's whale	12
Minke whale	8
Humpback whale	91
Sperm whale	73
Kogia spp.	506
Cuvier's beaked whale	205
Blainville's beaked whale	39
Longman's beaked whale	14
Killer whale	6
False killer whale (Hawaii Pelagic)	9
False killer whale (Hawaii Insular)	9
Pygmy killer whale	17
Melon-headed whale	51
Short-finned pilot whale	66
Risso's dolphin	44
Bottlenose dolphin (Hawaii Pelagic)	193
Bottlenose dolphin (Kauai/Niihau)	1
Spinner dolphin	16
Pantropical spotted dolphin	43
Striped dolphin	62
Rough-toothed dolphin	164
Fraser's dolphin	156
Hawaiian monk seal	4

Hawaii South—Operational Area 11 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	4
Fin whale	3
Bryde's whale	6
Minke whale	6
Humpback whale	0
Sperm whale	48
Kogia spp.	257
Cuvier's beaked whale	122
Blainville's beaked whale	23
Longman's beaked whale	8
Killer whale	3
False killer whale (Hawaii Pelagic)	5
False killer whale (Hawaii Insular)	5
Pygmy killer whale	9
Melon-headed whale	27
Short-finned pilot whale	63
Risso's dolphin	23
Bottlenose dolphin (Hawaii Pelagic)	25
Bottlenose dolphin (Oahu)	1
Bottlenose dolphin (4-Island)	1
Bottlenose dolphin	3
Spinner dolphin	20
Pantropical spotted dolphin	53
Striped dolphin	78
Rough-toothed dolphin	87
Fraser's dolphin	83
Hawaiian monk seal	3

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

LETTER OF AUTHORIZATION

The Chief of Naval Operations, Department of the Navy, 2000 Navy Pentagon, Washington, D.C. 20350-2000, and persons operating under his authority (i.e., Navy), are authorized to take marine mammals incidental to Navy operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar in accordance with 50 CFR Part 218, Subpart X– Taking of Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar subject to the provisions of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*; MMPA) and the following conditions:

1. This Authorization is valid for the period August 15, 2012, through August 14, 2013.

2. This Authorization is valid only for the unintentional taking of the species of marine mammals identified in 50 CFR § 218.230(b) and Condition 5 of this Authorization governing the taking of these animals incidental to the activity specified in Condition 3. This authorization shall be valid only for take consistent with the provisions in 50 CFR § 218.232 and the terms of this Authorization as specified in this Authorization.

3. This Authorization is valid only for activities associated with the operation of the SURTASS LFA Sonar onboard the United States Naval Ship (USNS) VICTORIOUS (T-AGOS 19). The signals transmitted by the SURTASS LFA sonar source must be between 100 and 500 Hertz (Hz) with a source level for each of the 18 projectors at no more than 215 decibels (dB) re: 1 micro Pascal (μPa) at 1 meter (m) root mean square (rms)) with a maximum duty cycle of 20 percent.

4. This Authorization, combined with Authorizations for the USNS ABLE (T-AGOS 20), USNS EFFECTIVE (T-AGOS 21), and USNS IMPECCABLE (T-AGOS 23), is valid for an estimated total of 20 nominal active sonar missions among the four SURTASS LFA sonar vessels (or equivalent shorter missions but not to exceed a total of 432 hours of transmit time per vessel during the period of effectiveness of this Authorization) within the following areas:

   (a) Up to 16 nominal missions in the northwestern Pacific Ocean which includes the following operational areas: east of Japan; the North Philippine Sea; the west Philippine Sea; offshore Guam; the Sea of Japan; the East China Sea; the South China Sea; and offshore Japan (25° to 40° N and 10° to 25° N).

USNS VICTORIOUS

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(b) Up to 4 nominal missions in the Hawaii Range Complex which includes the northern and southern Hawaii operational areas.

SPECIES AUTHORIZED AND LEVEL OF TAKE

5. The incidental take of marine mammals under the activity identified in Conditions 3 and 4 of this Authorization is limited to the following species:

   (a) **Mysticetes**: blue whale (*Balaenoptera musculus*), Bryde's whale (*Balaenoptera edeni*), fin whale (*Balaenoptera physalus*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), northern Pacific right whale (*Eubalena japonica*), pygmy right whale (*Capera marginata*), sei whale (*Balaenoptera borealis*), and southern right whale (*Eubalaena australis*).

   (b) **Odontocetes**: Baird's beaked whale (*Berardius bairdii*), Blainville's beaked whale (*Mesoplodon densirostris*), common bottlenose dolphin (*Tursiops truncatus*), Cuvier's beaked whale (*Ziphius cavirostris*), Dall's porpoise (*Phocoenoides dalli*), dwarf sperm and pygmy sperm whales (*Kogia simus and K. breviceps*), false killer whale (includes Hawaii pelagic and insular stocks) (*Pseudorca crassidens*), Fraser's dolphin (*Lagenodelphis hosei*), Gervais' beaked whale (*Mesoplodon europaeus*), ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), Gray's beaked whale (*Mesoplodon grayi*), Hector's beaked whale (*Mesoplodon hectori*), Hubbs' beaked whale (*Mesoplodon carhubbsi*), Indo-Pacific bottlenose dolphin (*Tursiops aduncus*), killer whale (*Orca orcinus*), long-beaked common dolphin (*Delphinus capensis*), Longman's beaked whale (*Indopacetus pacificus*), melon-headed whale (*Peponocephala electra*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), pantropical spotted dolphin (*Stenella attenuata*), Perrin's beaked whale (*Mesoplodon perrini*), pygmy beaked whale (*Mesoplodon peruvianus*), pygmy killer whale (*Feresa attenuata*), Risso's dolphin (*Grampus griseus*), rough-toothed dolphin (*Steno bredanensis*), short-beaked common dolphin (*Delphinus delphis*), short-finned pilot whale (*Globicephala macrorhynchus*), Sowerby's beaked whale (*Mesoplodon bidens*), spade-toothed beaked whale (*Mesoplodon traversii*), sperm whale (*Physeter macrocephalus*), spinner dolphin (*Stenella longirostris*), Stejneger's beaked whale (*Mesoplodon stejnegeri*), strap-toothed beaked whale (*Mesoplodon layardii*), striped dolphin (*Stenella coeruleoalba*), and True's beaked whale (*Mesoplodon mirus*).

   (c) **Pinnipeds**: Hawaiian monk seal (*Monachus shauinslandi*)

6. The taking of marine mammals by the Holder of this Authorization is limited to the incidental taking of marine mammal species identified in Condition 5 by Level A and Level B harassment (as defined in the MMPA and 50 CFR § 216.3) within those areas authorized under Condition 4. The take, by harassment, that occurs during the year covered by this Authorization may not exceed the amount identified in Attachment 2.

7. Taking of marine mammal species not listed under Condition 5 by harassment, injury, or mortality, or the taking by mortality of any marine mammal species listed under Condition 5 is prohibited.

MITIGATION

8. The Holder of this Authorization, and any individuals operating under his authority, must conduct the activity identified in 50 CFR § 218.230 and Condition 3 of this Authorization in a manner that minimizes, to the greatest extent practicable, adverse impacts on marine mammals, their habitats, and the availability of marine mammals for subsistence. When conducting operations identified in 50 CFR § 218.230, the following mitigation measures must be implemented:

   (a) The Holder of this Authorization, and any individuals operating under his authority, must not broadcast the SURTASS LFA sonar signal at a frequency greater than 500 Hz.

   (b) Through mitigation described under 50 CFR § 218.234 and Condition 9 (Mitigation Monitoring) of this Authorization, the Holder of this Authorization and any individuals operating under his authority must ensure, to the greatest extent practicable, that no marine mammal is subjected to a sound pressure level of 180 dB re: 1 µPa (rms) or greater.

   (c) **LFA Sonar Mitigation Zone**: Prior to commencing and during SURTASS LFA sonar transmissions, the Holder of this Authorization will use near-real-time environmental data and underwater acoustic prediction models to determine the propagation of the SURTASS LFA sonar signals in the operating area. The Holder must determine the distance from the SURTASS LFA sonar source to the 180-dB re: 1 µPa isopleth (rms) (i.e., the LFA sonar mitigation zone) in order to comply with Condition 8(b).

      (i) The Holder will update these sound field estimates every 12 hours, or more frequently when meteorological or oceanographic conditions change.

   (d) **Additional 1-km Buffer Zone**: The Holder of this Authorization will establish a one-kilometer (1-km) buffer zone around the LFA sonar mitigation zone.

   (e) **Ramp-Up Procedures for the HF/M3 System**: The Holder of a Letter of Authorization will ramp up the High Frequency / Marine Mammal Monitoring (HF/M3) active sonar referenced in 50 CFR § 218.234 from a power level beginning at a maximum source sound pressure level of 180 dB re: 1 µPa (rms) in 10-dB increments to operating levels over a period of no less than five minutes:

      (i) At least 30 minutes prior to any SURTASS LFA sonar transmission;

      (ii) Prior to any SURTASS LFA sonar calibrations or testing that are not part of regular SURTASS LFA sonar transmissions described in 50 CFR § 218.230; and

      (iii) Anytime after the Holder of this Authorization has powered-down the HF/M3 active sonar source for more than two minutes.

      (iv) The Holder of a Letter of Authorization will not increase the HF/M3 active sonar system's sound pressure level once they detect a marine mammal. The Holder may resume a ramp-up of the HF/M3 sonar system once marine mammals are no longer detected by the HF/M3 active sonar system, passive acoustic monitoring, or visual monitoring described in Condition 9.

(f) **Suspension/Delay for SURTASS LFA Sonar Transmissions**: If the Holder of this Authorization detects a marine mammal through monitoring required under 50 CFR § 218.235 and Condition 9 within either the LFA sonar mitigation zone or the 1-km buffer zone around the surveillance vessel, the Holder will immediately suspend or delay SURTASS LFA transmissions.

(g) **Resumption of SURTASS LFA Sonar Transmissions**: The Holder of this Authorization may resume/commence SURTASS LFA sonar transmissions 15 minutes after:

(i) All marine mammals have left the LFA sonar mitigation zone and the 1-km buffer zone around the surveillance vessel; and

(ii) There is no further detection of any marine mammal within the LFA sonar mitigation zone plus the 1-km buffer zone as determined by the visual, passive or active acoustic monitoring protocols described in 50 CFR § 218.235 and Condition 9.

(h) **Geographic Restrictions**: The Holder of this Authorization will not operate SURTASS LFA sonar such that the SURTASS LFA sonar sound field exceeds 180 dB re: 1 μ Pa (rms):

(i) At a distance of less than or equal to 22 km (14 miles (mi); 22 nautical miles (nm)) from any coastline, including offshore islands.

(ii) At a distance of less than or equal to 1 km (0.62 mi; 0.54 nm) seaward of the outer perimeter of any offshore biologically important area for marine mammals designated in 50 CFR § 218.234(f)(2) and described in Condition 8(h)(iii) during the period specified.

(iii) The Offshore Biologically Important Areas (OBIA) for marine mammals (with specified periods) for SURTASS LFA sonar operations are:

OBIA	Period of Effectiveness
Georges Bank	Year-round
Roseway Basin Right Whale Conservation Area	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	March through August, annually
Silver Bank and Navidad Bank	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	June through October, annually
Patagonian Shelf Break	Year-round
Southern Right Whale Seasonal Habitat	May through December, annually
Central California NMSs	June through November, annually
Antarctic Convergence Zone	October through March, annually

Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	June through November, annually
Coastal waters off Madagascar	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	November through December, annually
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	November through April, annually
Costa Rica Dome	Year-round
Great Barrier Reef Between 16° S and 21° S	May through September, annually
Bonney Upwelling on the southern coast of Australia	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually
Abrolhos Bank	August through November

Note: See § 218.234(f)(2) and Attachment 1 for coordinate information.

(i) **Operational Exception for SURTASS LFA Sound Field in OBIAs**: During military operations, SURTASS LFA sonar transmissions may exceed 180 dB re: 1 μPa (rms) within the boundaries of an OBIA, including operating within an OBIA, when the Holder of this Authorization determines that it is: 1) operationally necessary to continue tracking an existing underwater contact; or 2) operationally necessary to detect a new underwater contact within the OBIA. This exception does not apply to routine training and testing with the SURTASS LFA sonar systems.

(j) **Mission Planning**: The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization will plan all SURTASS LFA sonar missions to ensure that no more than 12 percent of any marine mammal stock listed in 50 CFR § 218.230(b)(1) through (3) would be taken by Level B harassment annually. This annual per-stock cap of 12 percent applies regardless of the number of LFA sonar vessels operating. The Holder of this Authorization must coordinate with the Holder of the Letters of Authorization issued to the USNS ABLE, USNS EFFECTIVE, and the USNS IMPECCABLE, to ensure that this condition is met for all vessels combined.

MITIGATION MONITORING

9. The Holder of this Authorization, and any individuals operating under his authority, must:

   (a) Perform the following for visual mitigation monitoring:

      (i) Marine mammal biologists qualified in conducting at-sea marine mammal visual monitoring from surface vessels will train and qualify designated ship personnel as lookouts to conduct at-sea visual monitoring.

      (ii) Train the lookouts in the most effective means to ensure quick and effective communication within the command structure in order to facilitate implementation of protective measures if they spot marine mammals.

      (iii) Conduct visual monitoring from the ship's bridge during daylight hours (30 minutes before sunrise until 30 minutes after sunset) during operations that employ SURTASS LFA sonar in the active mode. Maintain a topside watch with standard binoculars (7x) and with the naked eye.

   (b) Perform the following for passive acoustic monitoring:

      (i) Use the low frequency, passive SURTASS sonar system to listen for vocalizing marine mammals; and

   (c) Perform the following for active acoustic monitoring:

      (i) Use the HF/M3 active sonar to locate and track marine mammals in relation to the SURTASS LFA sonar vessel and the sound field produced by the SURTASS LFA sonar source array, subject to the ramp-up requirements in § 218.234(e) and Condition 8(e).

10. Mitigation monitoring under Conditions 9(a), (b), and (c) must:

   (a) Commence at least 30 minutes before the first SURTASS LFA sonar transmission (30 minutes before sunrise for visual monitoring);

   (b) Continue between transmission pings; and

   (c) Continue for at least 15 minutes after completion of the SURTASS LFA sonar transmission exercise (30 minutes after sunset for visual monitoring), or if marine mammals are showing abnormal behavioral patterns, for a period of time until behavior patterns return to normal or conditions prevent continued observations.

MONITORING

11. The Holder of this Authorization for activities described in 50 CFR § 218.230 must:

   (a) Cooperate with the NMFS and any other federal agency for monitoring the impacts of the activity on marine mammals; and

   (b) Designate qualified on-site individuals to conduct the mitigation, monitoring and reporting activities specified in this Letter of Authorization.

12. The Holder of this Authorization will conduct all monitoring required under the Letter of Authorization to increase knowledge of the affected marine mammal species. The Holder of this Authorization must:

(a) Convene a Scientific Advisory Group (SAG) to analyze different types of monitoring/research that could increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises.

(b) Continue to assess data from the Marine Mammal Monitoring Program and work toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances. Any portions of the analyses conducted by these scientists based on these data that are determined to be unclassified after appropriate security reviews will be made publically available.

(c) Continue to explore the feasibility of coordinating with other fleet assets and/or range monitoring programs to include the use of SURTASS LFA sonar towed horizontal line arrays to augment the collection of marine mammal vocalizations before, during, and after designated exercises.

(d) Continue to collect ambient noise data and explore the feasibility of declassifying and archiving the ambient noise data for incorporation into appropriate ocean noise budget efforts.

REPORTING

13. The Holder of this Authorization must:

(a) Provide a status update to the NMFS when the Holder submits the next annual application on efforts to assess the data collected by its undersea arrays and progress toward making some portion of that data, after appropriate security reviews, available to scientists with appropriate clearances.

(b) Draft a plan of action outlining a strategy for implementing the Scientific Advisory Group's (SAG) recommendations for going forward with beaked whale and/or harbor porpoise research; or describe in writing why such research is not feasible/or is unlikely to increase the understanding of the potential effects of low-frequency active sonar transmissions on beaked whales and/or harbor porpoises, to be followed by a meeting with NMFS to discuss any other potential options.

(c) Systematically observe SURTASS LFA sonar operations for injured or disabled marine mammals and monitor the principal marine mammal stranding networks and other media to correlate analysis of any whale strandings that could potentially be associated with SURTASS LFA sonar operations.

(i) The Holder will ensure that the NMFS is notified immediately or as soon as clearance procedures allow if an injured, stranded, or dead marine mammal is found during or shortly after, and in the vicinity of, any SURTASS LFA operations. The Holder will report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov.

(ii) The Holder will provide the NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

(iii) In the event that an injured, stranded, or dead marine mammal is found by the Holder that is not in the vicinity of, or found during or shortly after SURTASS LFA sonar operations, the Holder will report the same information to NMFS as listed above as soon as operationally feasible and clearance procedures allow.

(d) In the event of a ship strike by the SURTASS LFA sonar vessel, at any time or place, the Holder must:

(i) Immediately, or as soon as clearance procedures allow, report to the NMFS the species identification (if known), location (lat/long) of the animal (or the strike if the animal has disappeared), and whether the animal is alive or dead (or unknown);

(ii) Report the incident to the Incidental Take Program Supervisor, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Jeannine.Cody@noaa.gov;

(iii) Report to the NMFS as soon as operationally feasible the size and length of the animal, an estimate of the injury status (e.g., dead, injured but alive, injured and moving, unknown, etc.), vessel class/type and operational status;

(iv) Report to the NMFS the vessel length, speed, and heading as soon as feasible; and

(v) Provide the NMFS a photo or video, if equipment is available.

(e) Submit classified and unclassified quarterly mission reports to the Director, Office of Protected Resources, NMFS, no later than 30 days after the end of each quarter beginning on the date of effectiveness of a Letter of Authorization or as specified in the appropriate Letter of Authorization. Each quarterly mission report will include all active-mode missions completed during that quarter. At a minimum, each classified mission report must contain the following information:

(i) Dates, times, and location of each vessel during each mission;

(ii) Information on sonar transmissions during each mission and records of any delays or suspensions;

(iii) Location of the SURTASS LFA sonar mitigation and buffer zones in relation to the LFA sonar array;

(iv) Marine mammal observations including animal type and/or species, number of animals sighted, date and time of observations, type of detection (visual, passive acoustic, HF/M3 sonar), bearing and range from vessel, abnormal behavior (if any), and remarks/narrative (as necessary).

(v) The report will include the Navy's estimates of the percentages of marine mammal stocks affected (both for the quarter and cumulatively for the year

covered by the Authorization) by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(vi) In the event that no SURTASS LFA sonar missions are completed during a quarter, a report of negative activity will be provided.

(f) Submit an annual, unclassified report to the Director, Office of Protected Resources, NMFS, no later than 45 days after expiration of this Authorization. At a minimum, the annual report will contain the following:

(i) An unclassified summary of the year's quarterly reports;

(ii) The Navy's estimates of the percentages of marine mammal stocks affected by SURTASS LFA sonar operations (both within and outside the LFA sonar mitigation zone), using predictive modeling based on operating locations, dates/times of operations, system characteristics, oceanographic environmental conditions, and animal demographics.

(iii) An analysis of the effectiveness of the mitigation measures with recommendations for improvements where applicable;

(iv) An assessment of any long-term effects from SURTASS LFA sonar operations; and

(v) Any discernible or estimated cumulative impacts from SURTASS LFA sonar operations.

14. The Holder of this Authorization must comply with the Terms and Conditions of the Incidental Take Statement corresponding to the Endangered Species Act Biological Opinion issued to the Navy and the National Marine Fisheries Service's Office of Protected Resources, Permits and Conservation Division.

15. A copy of this Authorization must be in the possession of the Officer in Charge of the Military Detachment (MILDET) on board the USNS VICTORIOUS in order to conduct the activity under the authority of this Letter of Authorization and Incidental Take Statement.

AUG 15 2012

Helen M. Golde, Acting Director
Office of Protected Resources
National Marine Fisheries Service

Date

Attachment 1 – Table 1 OBIA Coordinates

Name of Area	Location of Area	Months of Importance
Georges Bank	40°00'N, 72°30'W 39°37 N, 72°09'W 39°54'N, 71°43'W 40°02 N, 71°20'W 40°08'N, 71°01'W 40°04'N, 70°44'W 40°00'N, 69°24'W 40°16'N, 68°27'W 40°34'N, 67°13'W 41°00'N, 66°24'W 41°52'N, 65°47'W 42°20'N, 66°06'W 42°18'N, 67°23'W	Year-round
Roseway Basin Right Whale Conservation Area	43°05'N, 65°40'W 43°05'N, 65°03'W 42°45'N, 65°40'W 42°45'N, 65°03'W	June through December, annually
Great South Channel, U.S. Gulf of Maine, and Stellwagen Bank National Marine Sanctuary (NMS)	41°00.000'N, 69°05.000'W 42°09.000'N, 67°08.400'W 42°53.436'N, 67°43.873'W 44°12.541'N, 67°16.847'W 44°14.911'N, 67°08.936'W 44°21.538'N, 67°03.663'W 44°26.736'N, 67°09.596'W 44°16.805'N, 67°27.394'W 44°11.118'N, 67°56.398'W 43°59.240'N, 68°08.263'W 43°36.800'N, 68°46.496'W 43°33.925'N, 69°19.455'W 43°32.008'N, 69°44.504'W 43°21.922'N, 70°06.257'W 43°04.084'N, 70°21.418'W 42°51.982'N, 70°31.965'W 42°45.187'N, 70°23.396'W 42°39.068'N, 70°30.188'W 42°32.892'N, 70°35.873'W 42°07.748'N, 70°28.257'W 42°05.592'N, 70°02.136'W 42°03.664'N, 69°44.000'W 41°40.000'N, 69°45.000'W	January 1 to November 14, annually
Southeastern U.S. Right Whale Seasonal Habitat	Critical Habitat Boundaries are coastal waters between 31°15' N and 30°15'N from the coast out 15 nautical miles (nmi); and the coastal waters between 30°15' N and 28°00''N from the coast out 5 nmi. (50 CFR §226.13(c)) OBIA Boundaries are coastal waters between 31°15''N and 30°15''N from 12 to 15 nmi.	November 15 to April 15, annually
North Pacific Right Whale Critical Habitat	57°03'N, 153°00'W 57°18'N, 151°30'W 57°00'N, 151°30'W 56°45'N, 153°00'W (50 CFR §226.215)	March through August, annually

Name of Area	Location of Area	Months of Importance
Silver Bank and Navidad Bank	Silver Bank: 20° 38.899'N, 69° 23.640'W 20° 55.706'N, 69° 57.984'W 20° 25.221'N, 70° 00.387'W 20° 12.833'N, 69° 40.604'W 20° 13.918'N, 69° 31.518'W 20° 28.680'N, 69° 31.900'W Navidad Bank: 20° 15.596'N, 68° 47.967'W 20° 11.971'N, 68° 54.810'W 19° 52.514'N, 69° 00.443'W 19° 54.957'N, 68° 51.430'W 19° 51.513'N, 68° 41.399'W	December through April, annually
Coastal waters of Gabon, Congo and Equatorial Guinea	An exclusion zone following the 500-m isobath extending from 3°31.055'N, 9°12.226'E in the north offshore of Malabo southward to 8°57.470'S, 12°55.873'E offshore of Luanda.	June through October, annually
Patagonian Shelf Break	Between 200- and 2000-m isobaths and the following latitudes: 35°00'S, 39°00'S, 40°40'S, 42°30'S, 46°00'S, 48°50'S.	Year-round
Southern Right Whale Seasonal Habitat	Coastal waters between 42°00'S and 43°00'S from 12 to 15 nmi including the enclosed bays of Golfo Nuevo, Golfo San Jose, and San Matias. Golfos San Jose and San Nuevo are within 22 km (14 mi; 12 nmi) coastal exclusion zone.	May through December, annually
Central California National Marine Sanctuaries	Single stratum boundary created from the Cordell Bank (15 CFR 922.10), Gulf of the Farallones (15 CFR 922.80), and Monterey Bay (15 CFR 922.30) NMS legal boundaries. Monterey Bay NMS includes the Davidson Seamount Management Zone.	June through November, annually
Antarctic Convergence Zone	30°E to 80°E, 45°S 80°E to 150°E, 55°S 150°E to 50°W, 60°S 50°W to 30°E, 50°S	October through March, annually

Name of Area	Location of Area	Months of Importance
Piltun and Chayvo offshore feeding grounds in the Sea of Okhotsk	54°09.436'N, 143°47.408'W 54°09.436'N, 143°17.354'W 54°01.161'N, 143°17.354'W 53°53.580'N, 143°13.398'W 53°26.963'N, 143°28.230'W 53°07.013'N, 143°35.481'W 52°48.705'N, 143°38.447'W 52°32.077'N, 143°37.788'W 52°21.605'N, 143°34.163'W 52°09.470'N, 143°26.582'W 51°57.686'N, 143°30.208'W 51°36.033'N, 143°42.794'W 51°08.082'N, 143°51.301'W 51°08.082'N, 144°16.742'W 51°24.514'N, 144°11.139'W 51°48.116'N, 144°10.809'W 52°03.194'N, 144°20.363'W 52°23.235'N, 144°10.150'W 52°28.674'N, 144°12.787'W 52°42.523'N, 144°10.150'W 53°12.972'N, 143°55.648'W 53°18.505'N, 143°56.637'W 53°23.041'N, 143°53.011'W 53°28.250'N, 143°53.341'W 53°44.039'N, 143°49.056'W 53°53.207'N, 143°50.045'W 53°59.819'N, 143°48.067'W	June through November, annually
Coastal waters off Madagascar	16°03'55.04"S, 50°27'12.59"E 16°12'23.03"S, 51°03'37.38"E 24°30'45.06"S, 48°26'00.94"E 24°15'28.07"S, 47°46'51.16"E 22°18'00.74"S, 48°14'13.52"E 20°52'24.12"S, 48°43'13.49"E 19°22'33.24"S, 49°15'45.47"E 18°29'46.08"S, 49°37'32.25"E 17°38'27.89"S, 49°44'27.17"E 17°24'39.12"S, 49°39'17.03"E 17°19'35.34"S, 49°54'23.82"E 16°45'41.71"S, 50°15'56.35"E	July through September, annually for humpback whale breeding and November through December, annually for migrating blue whales.
Madagascar Plateau, Madagascar Ridge, and Walters Shoal	25°55'20.00"S, 44°05'15.45"E 25°46'31.36"S, 47°22'35.90"E 27°02'37.71"S, 48°03'31.08"E 35°13'51.37"S, 46°26'19.98"E 35°14'28.59"S, 42°35'49.20"E 31°36'57.96"S, 42°37'49.35"E 27°41'11.21"S, 44°30'11.01"E	November through December, annually

Name of Area	Location of Area	Months of Importance
Ligurian-Corsican-Provencal Basin and Western Pelagos Sanctuary in the Mediterranean Sea	42°50.271'N, 06°31.883'E 42°55.603'N, 06°43.418'E 43°04.374'N, 06°52.165'E 43°12.600'N, 07°10.440'E 43°21.720'N, 07°19.380'E 43°30.600'N, 07°32.220'E 43°33.900'N, 07°49.920'E 43°36.420'N, 08°05.580'E 43°42.600'N, 08°22.140'E 43°50.880'N, 08°34.500'E 43°58.560'N, 08°47.700'E 43°59.040'N, 08°56.040'E 43°57.047'N, 09°03.540'E 43°52.260'N, 09°08.520'E 43°47.580'N, 09°13.500'E 43°36.060'N, 09°16.620'E 43°28.440'N, 09°05.820'E 43°21.360'N, 09°02.100'E 43°16.020'N, 08°57.240'E 43°04.440'N, 08°47.580'E 42°54.900'N, 08°35.400'E 42°45.900'N, 08°27.540'E 42°36.060'N, 08°22.020'E 42°22.620'N, 08°15.849'E 42°07.202'N, 08°17.174'E 41°52.800'N, 08°15.720'E 41°39.780'N, 08°05.280'E 41°28.200'N, 08°51.600'E 42°57.060'N, 06°19.860'E	July to August, annually
Hawaiian Islands Humpback Whale NMS and Penguin Bank	21°10'02.179"N, 157°30'58.217"W 21°09'46.815"N, 157°30'22.367"W 21°06'39.882"N, 157°31'00.778"W 21°02'51.976"N, 157°30'30.049"W 20°59'52.725"N, 157°29'28.591"W 20°58'05.174"N, 157°27'35.919"W 20°55'49.456"N, 157°30'58.217"W 20°50'44.729"N, 157°42'42.418"W 20°51'02.654"N, 157°44'45.333"W 20°53'56.784"N, 157°46'04.716"W 20°56'32.988"N, 157°45'33.987"W 21°01'27.472"N, 157°43'10.586"W 21°05'20.499"N, 157°39'27.802"W 21°10'02.179"N, 157°30'58.217"W	November through April, annually
Costa Rica Dome	Centered at 9°N and 88°W	Year-round

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Name of Area	Location of Area	Months of Importance
Great Barrier Reef Between 16° S and 21° S	16°01.829'S, 145°38.783'E 15°52.215'S, 146°20.936'E 17°28.354'S, 146°59.392'E 20°16.228'S, 151°39.674'E 20°58.381'S, 150°30.897'E 20°17.007'S, 149°38.247'E 20°10.941'S, 149°18.247'E 20°02.403'S, 149°12.623'E 19°53.287'S, 149°03.986'E 19°49.866'S, 148°52.135'E 19°53.287'S, 148°44.302'E 19°47.965'S, 148°36.870'E 19°47.205'S, 148°26.024'E 19°19.978'S, 147°39.626'E 19°14.065'S, 147°37.014'E 19°08.913'S, 147°31.993'E 19°05.667'S, 147°24.160'E 19°07.576'S, 147°18.134'E 18°51.718'S, 146°51.219'E 18°44.258'S, 146°54.031'E 18°37.175'S, 146°51.420'E 18°31.620'S, 146°43.385'E 18°27.595'S, 146°40.573'E 17°36.676'S, 146°20.488'E 17°20.484'S, 146°16.671'E 17°07.745'S, 146°13.056'E 16°49.769'S, 146°11.047'E 16°41.835'S, 146°03.817'E 16°39.706'S, 145°54.979'E	May through September, annually
Bonney Upwelling on the west coast of Australia	37°12'20.036"S, 139°31'17.703"E 37°37'33.815"S, 139°42'42.508"E 38°10'36.144"S, 140°22'57.345"E 38°44'50.558"S, 141°33'50.342"E 39°07'04.125"S, 141°11'00.733"E 37°28'33.179"S, 139°10'52.263"E	December through May, annually
Northern Bay of Bengal and Head of Swatch-of-No-Ground	20°59.735'N, 89°07.675'E 20°55.494'N, 89°09.484'E 20°52.883'N, 89°12.704'E 20°55.275'N, 89°18.133'E 21°04.558'N, 89°25.294'E 21°12.655'N, 89°25.354'E 21°13.279'N, 89°16.833'E 21°06.347'N, 89°15.011'E	Year-round
Olympic Coast NMS and Prairie, Barkley Canyon, and Nitnat Canyon	Boundaries within 23 nmi (26.5 m; 42.6 km) of the coast from 47°07′ N to 48°30′ N latitude 48°30'01.995"N, 125°58'38.786"W 48°16'55.605"N, 125°38'52.052"W 48°23'07.353"N, 125°17'10.935"W 48°12'38.241"N, 125°16'42.339"W 47°58'20.361"N, 125°31'14.517"W 47°58'20.361"N, 126°06'16.322"W 48°09'46.665"N, 126°25'48.758"W	Olympic NMS: December, January, March, and May, annually The Prairie, Barkley Canyon, and Nitnat Canyon: June through September, annually

Name of Area	Location of Area	Months of Importance
Abrolhos Bank	16°35'34.909"38°52'30.455" 16°35'31.619"38°43'41.069" 16°40'00.131"37°23'52.492" 19°30'59.069"37°23'52.446" 19°30'59.974"39°33'38.351" 19°20'24.752"39°30'33.03" 18°52'16.884"39°32'31.789" 18°45'09.937"39°32'27.709" 18°30'59.345"39°30'59.669" 18°27'28.985"39°30'13.453" 18°17'30.429"39°26'21.073" 18°07'43.518"39°19'52.924" 18°09'24.931"39°16'24.913" 18°10'04.585"39°12'30.425" 18°10'20.682"38°39'06.185" 18°08'50.404"38°35'00.059" 18°06'05.466"38°31'41.385" 18°02'09.399"38°29'26.179" 17°58'01.372"38°28'45.409" 17°53'58.883"38°29'34.612" 16°48'58.768"38°55'23.768" 16°43'15.682"38°53'40.007"	August through November, annually

Attachment 2 – Authorized Take Estimates by Operating Region

The Holder of this Authorization must maintain a running calculation/estimation of takes of each species over the effective period of these regulations. The Holder of this Authorization must also coordinate with the Holder of the Letter of Authorization issued to the USNS EFFECTIVE, the USNS ABLE, and the USNS IMPECCABLE, to ensure that these conditions are met for all vessels combined.

Category	Requested Take Authorization Level A harassment
Mysticetes	No more than 6 over the course of the regulations.
Odontocetes	No more than 25 over the course of the regulations.
Pinnipeds	No more than 25 over the course of the regulations.

East of Japan—Operational Area 1 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	2
Fin whale	2
Sei whale	7
Bryde's whale	7
Minke whale	16
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Baird's beaked whale	21
Cuvier's beaked whale	37
Ginkgo-toothed beaked whale	5
Hubbs' beaked whale	5
False killer whale	32
Pygmy killer whale	19
Short-finned pilot whale	118
Risso's dolphin	92
Common dolphin	658
Bottlenose dolphin	136
Spinner dolphin	0
Pantropical spotted Dolphin	88
Striped dolphin	57
Rough-toothed dolphin	44
Fraser's dolphin	45
Pacific white-sided dolphin	94

North Philippine Sea—Operational Area 2 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	21
Minke whale	304
North Pacific right whale	1
Sperm whale	143
Kogia spp.	281
Cuvier's beaked whale	146
Blainville's beaked whale	14
Ginkgo-toothed beaked whale	14
Killer whale	14
False killer whale	107
Pygmy killer whale	76
Melon-headed whale	45
Short-finned pilot whale	826
Risso's dolphin	833
Common dolphin	1644
Bottlenose dolphin	271
Spinner dolphin	0
Pantropical spotted dolphin	570
Striped dolphin	1369
Rough-toothed dolphin	481
Fraser's dolphin	265
Pacific white-sided dolphin	466

West Philippine Sea—Operational Area 3 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	14
Bryde's whale	42
Minke whale	141
Humpback whale (winter only)	2
Sperm whale	31
Kogia spp.	106
Cuvier's beaked whale	10
Blainville's beaked whale	20
Ginkgo-toothed beaked whale	19
False killer whale	131
Pygmy killer whale	94
Melon-headed whale	56
Short-finned pilot whale	215
Risso's dolphin	575
Common dolphin	3287
Bottlenose dolphin	473
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	343
Rough-toothed dolphin	336
Fraser's dolphin	20
Pacific white-sided dolphin	559

Offshore Guam—Operational Area 4 3 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	3
Fin whale	11
Sei whale	9
Bryde's whale	13
Minke whale	8
Humpback whale (winter only)	580
Sperm whale	31
Kogia spp.	386
Cuvier's beaked whale	191
Blainville's beaked whale	36
Ginkgo-toothed beaked whale	16
Longman's beaked whale	13
False killer whale	36
Pygmy killer whale	4
Melon-headed whale	137
Killer whale	6
Short-finned pilot whale	54
Risso's dolphin	34
Common dolphin	0
Bottlenose dolphin	0
Spinner dolphin	102
Pantropical spotted dolphin	570
Striped dolphin	172
Rough-toothed dolphin	15
Fraser's dolphin	127

Sea of Japan—Operational Area 5 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	44
Bryde's whale	5
Minke whale	16
Minke whale J stock	6
Gray whale	0
N. Pacific right whale	1
Sperm whale	41
Stejneger's beaked whale	80
Baird's beaked whale	18
Cuvier's beaked whale	245
Ginkgo-toothed beaked whale	30
False killer whale	161
Melon-headed whale	0
Short-finned pilot whale	33
Risso's dolphin	350
Common dolphin	3615
Bottlenose dolphin	32
Spinner dolphin	0
Pantropical spotted dolphin	285
Pacific white-sided dolphin	94
Dall's porpoise	1412

East China Sea—Operational Area 6 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	58
Minke whale J stock	24
Gray whale (winter only)	1
N. Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	64
Blainville's beaked whale	13
Ginkgo-toothed beaked whale	5
False killer whale	17
Pygmy killer whale	4
Melon-headed whale	63
Short-finned pilot whale	27
Risso's dolphin	150
Common dolphin	658
Bottlenose dolphin	106
Spinner dolphin	0
Pantropical spotted dolphin	154
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67
Pacific white-sided dolphin	0

South China Sea—Operational Area 7 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Fin whale	4
Bryde's whale	9
Minke whale	43
Gray whale (winter only)	1
North Pacific right whale	1
Sperm whale	11
Kogia spp.	36
Cuvier's beaked whale	0
Blainville's beaked whale	7
Ginkgo-toothed beaked whale	7
False killer whale	19
Pygmy killer whale	4
Melon-headed whale	70
Short-finned pilot whale	22
Risso's dolphin	175
Common dolphin	658
Bottlenose dolphin	85
Spinner dolphin	3249
Pantropical spotted dolphin	132
Striped dolphin	172
Rough-toothed dolphin	73
Fraser's dolphin	67

Offshore Japan 25-40° N—Operational Area 8 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	11
Fin whale	5
Sei whale	15
Bryde's whale	21
Minke whale	13
Sperm whale	11
Kogia spp.	211
Baird's beaked whale	3
Cuvier's beaked whale	37
Mesoplodon spp.	16
False killer whale	117
Pygmy killer whale	7
Melon-headed whale	41
Short-finned pilot whale	0
Risso's dolphin	34
Common dolphin	3615
Bottlenose dolphin	17
Spinner dolphin	0
Pantropical spotted dolphin	307
Striped dolphin	856
Rough-toothed dolphin	15
Pacific white-sided dolphin	102
Hawaiian monk seal	1

Offshore Japan 10-25° N—Operational Area 9 1 Mission	
Animal	**Requested Take Authorization Level B harassment**
Bryde's whale	9
Sperm whale	0
Kogia spp.	0
Cuvier's beaked whale	19
False killer whale	34
Melon-headed whale	19
Short-finned pilot whale	22
Risso's dolphin	42
Common dolphin	1,644
Bottlenose dolphin	17
Spinner dolphin	102
Pantropical spotted dolphin	395
Striped dolphin	172
Rough-toothed dolphin	0

Hawaii North—Operational Area 10 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	8
Fin whale	6
Bryde's whale	12
Minke whale	8
Humpback whale	91
Sperm whale	73
Kogia spp.	506
Cuvier's beaked whale	205
Blainville's beaked whale	39
Longman's beaked whale	14
Killer whale	6
False killer whale (Hawaii Pelagic)	9
False killer whale (Hawaii Insular)	9
Pygmy killer whale	17
Melon-headed whale	51
Short-finned pilot whale	66
Risso's dolphin	44
Bottlenose dolphin (Hawaii Pelagic)	193
Bottlenose dolphin (Kauai/Niihau)	1
Spinner dolphin	16
Pantropical spotted dolphin	43
Striped dolphin	62
Rough-toothed dolphin	164
Fraser's dolphin	156
Hawaiian monk seal	4

Hawaii South—Operational Area 11 2 Missions	
Animal	**Requested Take Authorization Level B harassment**
Blue whale	4
Fin whale	3
Bryde's whale	6
Minke whale	6
Humpback whale	0
Sperm whale	48
Kogia spp.	257
Cuvier's beaked whale	122
Blainville's beaked whale	23
Longman's beaked whale	8
Killer whale	3
False killer whale (Hawaii Pelagic)	5
False killer whale (Hawaii Insular)	5
Pygmy killer whale	9
Melon-headed whale	27
Short-finned pilot whale	63
Risso's dolphin	23
Bottlenose dolphin (Hawaii Pelagic)	25
Bottlenose dolphin (Oahu)	1
Bottlenose dolphin (4-Island)	1
Bottlenose dolphin	3
Spinner dolphin	20
Pantropical spotted dolphin	53
Striped dolphin	78
Rough-toothed dolphin	87
Fraser's dolphin	83
Hawaiian monk seal	3

APPENDIX B:

MARINE MAMMAL DENSITIES AND ABUNDANCES FOR LFA MISSION AREAS 2, 3, AND 4

Table C-1. Marine mammal species and stocks, abundance estimates, density estimates, as well as associated references for SURTASS LFA sonar mission areas 2, 3, and 4 (North Philippine Sea, West Philippine Sea, and Offshore Guam, respectively).

Marine Mammal Species Name	Stock Name[7]	Stock / Abundance (animals)	Stock / Abundance Reference(s)[8]	Density (animals per km^2)	Density reference(s)[2]
Mission Area 2: North Philippine Sea					
Bryde's whale	WNP	20,501	2	0.0006	1
Minke whale	WNP "O"	25,049	3	0.0044	3
North Pacific right whale (fall to spring)	WNP	922	4	<0.00001	
Sperm whale	NP	102,112	5	0.0028	6
Kogia spp.	NP	350,553	7, 8	0.0031	7, 8
Cuvier's beaked whale	NP	90,725	8	0.0054	8
Blainville's beaked whale	NP	8,032	7, 8	0.0005	7, 8
Ginkgo-toothed beaked whale	NP	22,799	7, 8	0.0005	7, 8
Killer whale	NP	12,256	7, 8	0.0004	7, 8
False killer whale	WNP	16,668	9	0.0029	9
Pygmy killer whale	WNP	30,214	8	0.0021	8
Melon-headed whale	WNP	36,770	7, 8	0.0012	6
Short-finned pilot whale	WNP	53,608	9	0.0153	9
Risso's dolphin	WNP	83,289	9	0.0106	9
Common dolphin	WNP	3,286,163	7, 8	0.0562	7, 8
Fraser's dolphin	WNP	220,789	7, 8	0.0040	7, 8
Bottlenose dolphin	WNP	168,791	9	0.0146	9
Pantropical spotted dolphin	WNP	438,064	9	0.0137	9
Striped dolphin	WNP	570,038	9	0.0329	9
Spinner dolphin	WNP	1,015,059	7, 8	0.0005	7, 8

7 NP=North Pacific; WNP=Western North Pacific; CNP=Central North Pacific

8 See end of this appendix table for literature references associated with the numerical values listed in table.

Table C-1. Marine mammal species and stocks, abundance estimates, density estimates, as well as associated references for SURTASS LFA sonar mission areas 2, 3, and 4 (North Philippine Sea, West Philippine Sea, and Offshore Guam, respectively).

Marine Mammal Species Name	Stock Name[7]	Stock / Abundance (animals)	Stock / Abundance Reference(s)[8]	Density (animals per km^2)	Density reference(s)[2]
Pacific white-sided dolphin	WNP	931,000	7, 8	0.0119	7, 8
Rough-toothed dolphin	WNP	145,729	7, 8	0.0059	7, 8
Mission Area 3: West Philippine Sea					
Fin whale	NP	9,250	1, 10, 11	0.0002	1, 10, 11
Bryde's whale	WNP	20,501	2	0.0006	1
Minke whale	WNP "O"	25,049	3	0.0033	3
Humpback whale (winter only)	WNP	1,107	12	0.0008	13
Sperm whale	NP	102,112	5	0.0010	14
Kogia spp.	NP	350,553	7	0.0017	8
Cuvier's beaked whale	NP	90,725	8	0.0003	8
Blainville's beaked whale	NP	8,032	7, 8	0.0005	7, 8
Ginkgo-toothed beaked whale	NP	22,799	7, 8	0.0005	7, 8
False killer whale	WNP	16,668	9	0.0029	9
Pygmy killer whale	WNP	30,214	8	0.0021	8
Melon-headed whale	WNP	36,770	7, 8	0.0012	6
Short-finned pilot whale	WNP	53,608	9	0.0076	9
Risso's dolphin	WNP	83,289	9	0.0106	9
Common dolphin	WNP	3,286,163	7, 8	0.0562	7, 8
Fraser's dolphin	WNP	220,789	7, 8	0.0040	7, 8
Bottlenose dolphin	WNP	168,791	9	0.0146	9
Pantropical spotted dolphin	WNP	438,064	9	0.0137	9
Striped dolphin	WNP	570,038	9	0.0164	9
Spinner dolphin	WNP	1,015,059	7, 8	0.0005	7, 8
Pacific white-sided dolphin	WNP	931,000	15	0.0245	7, 8

Table C-1. Marine mammal species and stocks, abundance estimates, density estimates, as well as associated references for SURTASS LFA sonar mission areas 2, 3, and 4 (North Philippine Sea, West Philippine Sea, and Offshore Guam, respectively).

Marine Mammal Species Name	Stock Name[7]	Stock / Abundance (animals)	Stock / Abundance Reference(s)[8]	Density (animals per km^2)	Density reference(s)[2]
Rough-toothed dolphin	WNP	145,729	7, 8	0.0059	7, 8
Mission Area 4: Offshore Guam					
Blue whale	CNP	9,250	10	0.0001	7, 8
Fin whale	WNP	9,250	1, 10, 11	0.0003	8
Sei whale	NP	8,600	10	0.0003	16
Bryde's whale	WNP	20,501	2	0.0004	16
Minke whale	WNP "O"	25,049	3	0.0003	7, 8
Humpback whale (October to May only)	CNP	10,103	12	0.0069	7, 8
Sperm whale	NP	102,112	5	0.0012	16
Kogia spp.	NP	350,553	8	0.0101	6
Cuvier's beaked whale	NP	90,725	8	0.0062	6
Blainville's beaked whale	NP	8,032	8	0.0012	6
Ginkgo-toothed beaked whale	NP	22,799	7, 8	0.0005	7, 8
Longman's beaked whale	CNP	1,007	6	0.0004	6
Killer whale	CNP	349	6	0.0001	6
False killer whale	WNP	16,668	9	0.0011	16
Pygmy killer whale	WNP	30,214	8	0.0001	16
Melon-headed whale	WNP	36,770	8	0.0043	16
Short-finned pilot whale	WNP	53,608	9	0.0016	16
Risso's dolphin	WNP	83289	9	0.0010	6
Common dolphin	WNP	3,286,163	7, 8	0.0021	7, 8
Fraser's dolphin	CNP	10,226	6	0.0042	6
Bottlenose dolphin	WNP	168,791	9	0.0002	16
Pantropical spotted dolphin	WNP	438,064	9	0.0226	16

Table C-1. Marine mammal species and stocks, abundance estimates, density estimates, as well as associated references for SURTASS LFA sonar mission areas 2, 3, and 4 (North Philippine Sea, West Philippine Sea, and Offshore Guam, respectively).

Marine Mammal Species Name	Stock Name[7]	Stock / Abundance (animals)	Stock / Abundance Reference(s)[8]	Density (animals per km^2)	Density reference(s)[2]
Striped dolphin	WNP	570,038	9	0.0062	16
Spinner dolphin	WNP	1,015,059	8	0.0031	16
Rough-toothed dolphin	WNP	145,729	8	0.0003	16

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