Stranding Response Plan for the Southern California Range Complex (SOCAL)

Strandings

Strandings, as defined by the Marine Mammal Protection Act (MMPA), have occurred throughout recorded history, although U.S. stranding programs have only been keeping consistent records in the last three decades. Strandings may result from many different causes, including, for example, infectious agents, biotoxicosis, starvation, fishery interaction, ship strike, unusual oceanographic or weather events, sound exposure, or combinations of these stressors sustained concurrently or in series. In many cases, a cause of stranding or death cannot be unequivocally determined for a number of reasons. Several marine mammal strandings have been associated with mid-frequency active sonar (MFAS), however, scientific uncertainty remains regarding the exact combination of behavior and physiological responses that link MFAS exposure to strandings (though several mechanisms have been theorized). Available evidence suggests that in some cases it may be the presence of additional specific environmental or physical conditions working in confluence with the exposure of marine mammals to MFAS that can potentially result in a stranding, The National Marine Mammal Stranding Network (created under the Marine Mammal Health and Stranding Response Program Act (MMHSRPA)) consists of over 100 organizations partnered with the National Marine Fisheries Service (NMFS) to investigate marine mammal strandings. NMFS is currently developing (with help anticipated from the Navy, the petroleum industry, and other agencies and entities) a series of studies to correlate long-term stranding patterns and pathologies with all known anthropogenic stressors, such as sound and including seismic surveys and active military sonar. Among other things, the plan discussed below is intended to contribute to the better understanding of why strandings occur.

Introduction to the Stranding Plan

Pursuant to 50 CFR Section 216.105, the plan outlined below will be included as part of (attached to) the Navy's MMPA Letter of Authorization (LOA), which indicates the conditions under which the Navy is authorized to take marine mammals pursuant to Navy training activities, involving MFAS or explosive detonations conducted off the coast of Southern California. This Stranding Response plan is specifically intended to outline the applicable requirements the authorization is conditioned upon in the event that a marine mammal stranding is reported off the Southern California Coast during a *major training exercise* (MTE) (see glossary below). As mentioned above, NMFS considers all plausible causes within the course of a stranding investigation and this plan in no way presumes that any strandings are related to, or caused by, Navy training activities. This plan is designed to address the following three issues:

- Mitigation – When marine mammals are in a situation that can be defined as a *stranding* (see glossary below), they are experiencing physiological stress. When animals are stranded, and alive, NMFS believes that exposing these compromised animals to additional known stressors would likely exacerbate the animal's distress and could potentially cause its death. Regardless of the factor(s) that may have initially contributed to the stranding, it is NMFS' goal to avoid exposing these animals to further stressors. Therefore, when live stranded cetaceans are in the water and engaged in what is classified

as an *Uncommon Stranding Event* (USE) (see glossary below), the shutdown component of this plan is intended to minimize the exposure of those animals to mid-frequency active sonar (MFAS) and explosive detonations, regardless of whether or not these activities may have initially played a role in the event.

- Monitoring – This plan will enhance the understanding of how MFAS (as well as other environmental conditions) may, or may not, be associated with marine mammal injury or strandings. Additionally, information gained from the investigations associated with this plan may be used in the adaptive management of mitigation or monitoring measures in subsequent LOAs, if appropriate. We note that detections of stranded marine mammals off the Southern California Coast are typically accomplished using passive surveillance, i.e. individuals conducting their normal activities happen to see an animal and report it to the stranding network. If surveys or expanded active detection efforts are specifically used during Navy training exercises, we expect that the number of strandings detected during training may be higher relative to other times because of the increased targeted effort.

- Compliance – The information gathered pursuant to this protocol will inform NMFS' decisions regarding compliance with Sections 101(a) (5) (B and C) of the MMPA.

In addition to outlining the necessary procedural steps for the Navy to undertake in the event of a USE during an MTE (as required by the LOA), this document describes NMFS' planned participation in stranding responses off the Southern California Coast, as NMFS' response relates specifically to the Navy requirements described here. The NMFS Marine Mammal Health and Stranding Response Program (MMHSRP) and the participating Southwest Regional Stranding Networks have specific responsibilities regarding unusual marine mammal mortality events (UMEs) pursuant to Title IV of the MMPA. This document does not serve to replace or preclude any of the procedures currently in place for NMFS' response to UMEs or to any normal operations of the stranding network. NMFS will pursue any activities to fulfill obligations relative to UMEs any time that a trigger is reached as determined by the Working Group on Marine Mammal Unusual Mortality Events. This document highlights (or adds to) applicable existing (and in development) protocols and procedures to be used with the specific circumstances and specific subset of strandings addressed here, namely a USE off the Southern California Coast during the MTE. This document has been reviewed and approved by the NMFS staff responsible for conducting and overseeing the referenced activities and this plan will be implemented by NMFS to the degree that resources are available and logistics are feasible.

General Notification Provision

If, at any time or place, Navy personnel find a *stranded* marine mammal (see glossary below) either on the shore, near shore, or floating at sea, NMFS requests the Navy contact NMFS immediately (or as soon as clearance procedures allow) as described in the SOCAL Stranding Communication Protocol (currently under development, but subject to incorporation into this plan upon mutual agency approval). NMFS requests the Navy provide NMFS with species or description of animal (s), the condition of the animal (including carcass condition if the animal is

dead – see glossary for condition codes), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

Operational Response Plan

This section describes the specific actions the Navy must take in order to comply with the Southern California Range Complex (SOCAL) LOA if a USE is reported to the Navy off the Southern California Coast coincident to, or within 72 hours of, an MTE. This Stranding Response Plan will include an associated SOCAL Stranding Communication Protocol (currently under development, but subject to incorporation into this plan upon mutual agency approval), which will indicate, among other things, the specific individuals (NMFS Office of Protected Resources - HQ senior administrators) authorized to advise the Navy that certain actions are prescribed by the Stranding Response Plan. A glossary is included at the end of this document. Words included in the glossary are italicized in this section the first time they are used.

1. Initial Stranding Response - The NMFS regional stranding network will respond to all reports of stranded marine mammals in areas where there is geographic coverage by the stranding network, when feasible. All marine mammals will receive examination appropriate to the condition code of the animal and the feasibility of the logistics. If a *qualified* individual determines that the stranding is a *USE*, NMFS staff (or qualified individual) will initiate a Phase 1 Investigation. NMFS will immediately contact appropriate NMFS and Navy personnel (pursuant to the SOCAL Stranding Communication Protocol). NMFS and Navy will maintain a dialogue, as needed, regarding the identification of the USE and the potential need to implement shutdown procedures.

2. *Shutdown* Procedures – Shutdown procedures are not related to the investigation of the cause of the stranding and their implementation is in no way intended to imply that MFAS is the cause of the stranding. Rather, as noted above, shutdown procedures are intended to protect live, distressed cetaceans involved in a USE by minimizing their exposure to possible additional stressors (MFAS or explosive detonations), regardless of the factors that initially contributed to the USE. Only individuals specifically identified in the SOCAL Stranding Communication Protocol (NMFS Protected Resources – HQ senior administrators) will be authorized to advise the Navy of the need to implement shutdown procedures (pursuant to the Stranding Response Plan/LOA).

a) If no live (*Condition Code 1*) or freshly dead (*Condition Code 2*) cetaceans are involved in the USE, NMFS will advise the Navy that shutdown procedures need not be implemented. Aerial surveys will be conducted if feasible (see second bullet under b, below).

b) If live or freshly dead cetaceans are involved in the USE, the Navy will implement the following procedures:

- If live cetaceans involved in the USE are in the water (i.e., could be exposed to sonar), NMFS will advise the Navy of the need to implement shutdown

procedures defined in the glossary (pursuant to the Stranding Response Plan/LOA).

- NMFS will coordinate internally, with the Navy, and with other agencies and entities with the intent of obtaining aerial survey arrangements. If an aircraft is available, a survey will be conducted within 10 miles (on the shore and in the water) to look for additional animals that meet the USE criteria. NMFS will request that the Navy assist with aerial surveys, as resources are available.

    - If no additional animals that meet the USE criteria are found (including if no aircraft were available to conduct a survey), and the originally detected animals are not in the water, and will not be put back in the water for rehabilitation or release purposes, or are dead, NMFS will advise the Navy that shutdown procedures need not be implemented at any additional locations.

    - If additional cetacean(s) meeting the USE criteria are detected by surveys, the shutdown procedures will be followed for the newly detected animal(s) beginning at 2(a) above.

- If a qualified individual determines that it is appropriate to put live animals that were initially on the beach back in the water for rehabilitation or release purposes, NMFS will advise the Navy of the need to implement shutdown procedures pursuant to the Stranding Response Plan/LOA.

c) If the Navy finds an injured (or entangled) or dead marine mammal (other than a right whale) floating at sea during an MTE, the Navy shall notify NMFS (pursuant to SOCAL Stranding Communication Protocol) immediately or as soon as operational security considerations allow. The Navy should provide NMFS with the information outlined in the general notification provision above, as available. Based on the information provided, NMFS will determine if a modified shutdown is appropriate on a case-by-case basis.

d) In the event, following a USE, that: a) qualified individuals are attempting to herd animals back out to the open ocean and animals are not willing to leave, or b) animals are seen repeatedly heading for the open ocean but turning back to shore, NMFS and the Navy will coordinate (including an investigation of other potential anthropogenic stressors in the area) to determine if the proximity of MFAS operations or explosive detonations, though farther than 14 nm from the distressed animal(s), is likely decreasing the likelihood that the animals return to the open water. If so, NMFS and the Navy will further coordinate to determine what measures are necessary to further minimize that likelihood and implement those measures as appropriate. Navy and NMFS will maintain a dialogue regarding the plan to return the animal(s) to the water.

3. <u>Restart Procedures</u>

- If at any time, the subject(s) of the USE die or are euthanized, NMFS will immediately advise the Navy that the shutdown around that animal(s)' location is no longer needed,

- Shutdown procedures will remain in effect until NMFS determines that, and advises the Navy that, all live animals involved in the USE have left the area (either of their own volition or herded). Leading up to restart, NMFS will coordinate internally, with the Navy, and with other federal and state agencies with the intent of securing arrangements to track the movement of the animals (via aircraft, vessel, tags, etc.) following the dispersal of the USE. If the Navy has restarted operations in the vicinity of the animals, NMFS and the Navy will further coordinate to determine (based on location and behavior of tracked animals and location/nature of Navy activities) if the proximity of MFAS operations is likely increasing the likelihood that the animals re-strand. If so, NMFS and the Navy will further coordinate to determine what measures are necessary to minimize that likelihood and implement those measures as appropriate.

4. Information - Within 72 hours of the notification of the USE the Navy will provide available information to NMFS (per the SOCAL Stranding Communication Protocol) regarding the location, number and types of acoustic/explosive sources, direction and speed of units using MFAS, and marine mammal sightings information associated with training activities occurring within 80 nm and 72 hours prior to the USE event. Information not initially available regarding the 80 nm, 72 hours, period prior to the event will be provided as soon as it becomes available. The Navy will provide NMFS investigative teams with additional relevant unclassified information as requested, if available.

5. Phase 1 Investigation – Because of the variability of available resources across stranding network agencies in the Southwest region, NMFS cannot currently commit, in advance, to the specific degree of investigation that will be conducted for any given stranding. NMFS stranding coordinators are currently assessing available resources with the goal of setting forth a plan that realistically outlines the possible responses in a given area. Meanwhile, the ideal responses (Phase 1 and 2 Investigations) area described in the Biomonitoring Protocols and are referred to below (here and in # 7), and NMFS will respond in the indicated manner when resources are available and it is logistically feasible:

Within 4 weeks of a USE (when feasible), NMFS will conduct and complete the Phase 1 Investigation (procedures outlined in the Biomonitoring Protocols) for all USEs that occur along the Southern California Coast coincident with MTEs. Results from the Phase 1 Investigation will be categorized in one of the two ways discussed below and trigger the indicated action:

- If the results of the Phase 1 Investigation indicate that the USE was likely caused by something (such as entanglement or blunt force trauma) other than MFAS or explosive detonations authorized by the Navy's LOA, then the USE investigation will be considered complete as related to the MMPA authorization.

- If NMFS cannot conclude that the stranding was likely caused by something other than MFAS or explosive detonations authorized by the Navy LOA, rather, the results of the Phase 1 Investigation range from completely inconclusive to including potential early

indicators that acoustic trauma could have played a role, then a Phase 2 Investigation will be conducted by qualified individuals, under the direction of NMFS staff, and an individual case report will be prepared for each animal.

6. Memorandum of Agreement (MOA) - The Navy and NMFS will develop an MOA, or other mechanism consistent with federal fiscal law requirements (and all other applicable laws), that allows the Navy to assist NMFS with the Phase 1 and 2 Investigations of USEs through the provision of in-kind services, such as (but not limited to) the use of plane/boat/truck for transport of stranding responders or animals, use of Navy property for necropsies or burial, or assistance with aerial surveys to discern the extent of a USE. The Navy may assist NMFS with the Investigations by providing one or more of the in-kind services outlined in the MOA, when available and logistically feasible and which do not negatively affect Fleet operational commitments.

7. Phase 2 Investigation – Please see # 5, above. Results from the Phase 2 Investigation (procedures outlined in the Biomonitoring Protocols) will be categorized in one of the three ways discussed below and trigger the indicated action:

- If the results indicate that the USE was likely caused by something (such as entanglement or blunt force trauma) other than MFAS or explosive detonations authorized by the Navy's LOA, then the *USE* investigation will be considered complete as related to the MMPA authorization.

- If the results are inconclusive which, historically, is the most likely result (i.e. NMFS can neither conclude that the USE was likely caused by something other than acoustic trauma nor conclude that there is a high likelihood that exposure to MFAS or explosive detonations were a cause of the USE), then the USE investigation will be considered complete as related to the MMPA authorization.

- If the results of a comprehensive and detailed scientific investigation into all possible causes of the stranding event indicate that there is a high likelihood that MFAS was a cause of the USE, one of the following will occur:

    - If the total mortalities determined to be caused by MFAS or explosive detonation do not exceed the number analyzed for the 5-yr period in the regulations (10 and 0, respectively), they will be recorded (to add on to if there is another stranding) and NMFS will take no further action beyond that indicated in 8, below.

    - If the total mortalities determined to be caused by MFAS exceed the number analyzed for the 5-yr period in the regulations, NMFS will begin the process of determining whether or not suspension or withdrawal of the authorization is appropriate.

Because information provided by the Navy and relating to their actions will inform any determination by NMFS that there is a high likelihood that MFAS was a cause of a USE, the Navy will be provided at least five working days to review and provide comments on NMFS'

analysis/report, which NMFS will incorporate if appropriate, before NMFS finalizes any conclusions (i.e., that mortal take(s) can be attributed to MFAS) and/or decides to take any action involving any take authorization.

8. Adaptive Management - The regulations under which the Navy's LOA (and this Stranding Response Plan) are issued will contain an adaptive management component. This gives NMFS the ability to consider the results of the previous years' monitoring, research, and/or the results of stranding investigations when prescribing mitigation or monitoring requirements in subsequent years. In the event that NMFS concludes that there is a high likelihood that MFAS or explosive detonations were a cause of a USE, NMFS will review the analysis of the environmental and operational circumstances surrounding the USE. In subsequent LOAs, based on this review and through the adaptive management component of the regulations, NMFS may require the mitigation measures or Stranding Response Plan be modified or supplemented if the new data suggest that modifications would either have a reasonable likelihood of reducing the chance of future USEs resulting from a similar confluence of events or would increase the effectiveness of the stranding investigations. Further based on this review and the adaptive management component of the regulations, NMFS may modify or add to the existing monitoring requirements if the data suggest that the addition of a particular measure would likely fill a specifically important data or management gap.

Communication

Effective communication is critical to the successful implementation of this Stranding Response Plan. Very specific protocols for communication, including identification of the Navy personnel authorized to implement a shutdown and the NMFS personnel authorized to advise the Navy of the need to implement shutdown procedures (NMFS Protected Resources HQ – senior administrators) and the associated phone trees, etc. (to be included in the document entitled "SOCAL Stranding Communication Protocols") are currently in development and will be refined and finalized for SOCAL prior to the issuance of a final rule (and updated yearly).

The Stranding Response Plan is dependent upon advance notice to NMFS of the planned upcoming MTE. NMFS and the Navy will develop a mechanism (that conforms with operational security requirements) wherein the Navy can provide NMFS with necessary advance notification of MTEs.

NMFS will keep information about planned MTE's in a confidential manner and will transmit information to NMFS personnel responding to USE's to the minimum necessary to accomplish the NMFS mission under this plan.

Glossary:

Condition Code – a method for evaluating the stage of decomposition of a stranded animal or carcass. Codes range from live animals (Code 1) to skeletal remains (Code 5) (modified from Marine Mammals Ashore: A Field Guide for Strandings by J.R. Geraci and V.J. Lounsbury).

- Code 1: Live animals

- Code 2: Freshly dead. The carcass is in good condition (fresh/edible), as if it has just died.
- Code 3a: The carcass is in fair condition, with only slight decomposition or scavenger damage. There may be slight bloating and a minimal smell.
- Code 3b: The carcass is moderately decomposed with obvious bloating, some sunburn (blackening and cracking of the skin), sloughing or missing skin, and scavenger damage.
- Code 4: The carcass is in an advanced state of decomposition with a strong odor, skin may be entirely missing, and there is likely extensive scavenger damage.
- Code 5: Mummified or skeletal remains. Skin may be draped over skeletal remains and any remaining tissues are dessicated.

Major training exercise (MTE) – An MTE, within the context of this document, means

- Joint Task Force Exercise (JTFEX.) – 3-4 events annually, 10 days per event
- Composite Training Unit Exercise (Comptuex) – 3-4 events annually, 21 days per event
- Ship ASW Readiness and Evaluation Measuring (SHAREM) – 1 event annually, two weeks or less per event
- Sustainment Exercise – 1-2 events annually, shorter duration than Comptuex
- Integrated ASW Course (IAC) Phase II – 4 events per year, 2-day event

Note: Sonar is typically not in use throughout an entire event.

Exhibiting Indicators of Distress – Animals exhibiting an uncommon combination of behavioral and physiological indicators typically associated with distressed or stranded animals. This situation would be identified by a qualified individual and typically includes, but is not limited to, some combination of the following characteristics:

- Marine mammals continually circling or moving haphazardly in a tightly packed group – with or without a member occasionally breaking away and swimming towards the beach.
- Abnormal respirations including increased or decreased rate or volume of breathing, abnormal content or odor
- Presence of an individual or group of a species that has not historically been seen in a particular habitat, for example a pelagic species in a shallow bay when historic records indicate that it is a rare event.
- Abnormal behavior for that species, such as abnormal surfacing or swimming pattern, listing, and abnormal appearance

Qualified – NMFS has a rigorous set of standards and training in place to qualify stranding responders, however, since the stranding network is a largely volunteer network, there is significant variability from one area to another. In the Biomonitoring Protocol, NMFS will identify the minimum qualifications necessary for individuals to make the determinations necessary to carry out this plan. These qualifications are currently in development and will be refined and finalized for SOCAL prior to the issuance of a final rule. Not all qualified individuals (veterinarians, technicians, etc.) will be NMFS employees. However, only specific individuals (NMFS Protected Resources, HQ – senior administrators) indicated in the SOCAL Stranding Communication Protocol will be empowered to advise the Navy of the need to implement shutdown procedures.

Stranding – an event in the wild in which a marine mammal is: 1) dead on the beach or in the water; 2) on a beach or shore and either unable to return to the water or in need of apparent medical attention; or, 3) in the water but unable to (or does not) return to its natural habitat under its own power or without assistance.

Shutdown Procedures – The act of the Navy ceasing operation of sonar or explosive detonations within a designated area for a designated time. The time is designated by the Restart Procedures (# 3, above). The designated area, for the purposes of this document, is an area within 14 nm of any live, in the water animal involved in the USE. This distance (14 nm) is the distance at which sound from the sonar source is anticipated to attenuate to approximately 140-145 dB (SPL). The risk function predicts that less than 1% of the animals exposed to sonar at this level (mysticete or odontocete) would respond in a manner that NMFS considers Level B Harassment. As indicated above in 2(d), if this distance appears too short (i.e, the proximity of sonar use may likely be deterring the animals from returning to the open water), NMFS and the Navy will further coordinate to determine what measures are necessary to further minimize that likelihood and implement those measures as appropriate.

Uncommon Stranding Event (USE) – A stranding event that takes place during an MTE and involves any one of the following:

- Two or more individuals of any cetacean species (i.e., could be two different species, but not including mother/calf pairs, unless of species of concern listed in next bullet) found dead or live on shore within a two day period and within 10 miles of one another.
- A single individual or mother/calf pair of any of the following marine mammals of concern: beaked whale of any species, kogia sp., short-finned pilot whales, humpback whales, sperm whales, blue whales, fin whales, or sei whales
- A group of 2 or more cetaceans of any species exhibiting indicators of distress.

Supplemental Documents in Development

SOCAL Stranding Communication Protocol – This document, which is currently in development, will include all of the communication protocols (phone trees, etc.) and associated contact information required for NMFS and the Navy to carry out the actions outlined in this Stranding Response Plan. This document will be completed prior to the finalization of the regulations and issuance of the final rule.

Biomonitoring Protocols for SOCAL – This document will contain protocols for the procedures that are necessary for NMFS staff to implement this Stranding Plan including:

- Qualifications necessary for individuals to implement certain parts of the Stranding Plan, such as: identifying a USE, identifying a Code 2 animal, or conducting a Phase 1 or 2 Investigation
- A protocol for the stranding responders that outlines the actions to take in the event of a USE during MTEs
- Protocols for the investigators that outline procedures for conducting the Phase 1 and Phase 2 Investigations

Memorandum of Agreement – This document will describe the agreed-upon mechanism that will allow the Navy to provide NMFS with in-kind services, when available and logistically feasible, to assist with stranding investigations. This document will include a comprehensive list of the specific ways the Navy could provide this assistance.

LOA Stranding Plans in Other Geographic Regions

The frequency and nature of strandings (naturally occurring or otherwise), the nature of military operations, and the NMFS resources and qualified staff available for stranding response, can be highly variable in different geographic regions, and sub-regions within those regions. Measures and procedures developed for and implemented in this Stranding Response Plan may not be appropriate, or even possible, in other geographic regions. As the need arises, NMFS and the Navy will work together to develop appropriate Stranding Response Plans for other geographic regions based on available information and resources. This Stranding Response Plan is not intended to serve as a template for other geographic regions, and, in fact, Stranding Plans for other areas may be significantly different.