

Guidance for Developing a Marine Wildlife Contingency Plan

California State Lands Commission (CSLC) staff has prepared this guidance document to help geophysical survey permittees prepare a Marine Wildlife Contingency Plan (MWCP) for CSLC staff approval. Permittees are encouraged to prepare a “generic” MWCP for CSLC staff review and comment prior to scheduling specific surveys in order to facilitate prompt review of survey-specific MWCPs and help the permittee avoid survey delays. In accordance with the Low Energy Offshore Geophysical Permit Program (OGPP) General Permit requirements, permittees must submit a MWCP at least 21 calendar days prior to each OGPP survey.¹ The goal of the MWCP is to ensure that interactions with marine wildlife are minimized by following operational protocols and implementing protective measures identified in Exhibit H (Mitigation Monitoring Program) of the General Permit. The MWCP is required to include, at a minimum, information in a descriptive narrative, on the following:

1. Acoustic safety zone radius that will be enforced by the Marine Wildlife Monitors (MWMs);
2. Methods to reduce noise levels generated by geophysical equipment;
3. Qualifications, number, location, and authority of onboard MWMs;
4. Distance, speed, and direction transiting vessels would maintain when in proximity to a marine mammal or reptile;
5. Identification of pinniped haul-out sites within or immediately adjacent to the proposed survey area; and
6. Observation recording procedures and reporting requirements in the event of an observed impact to marine wildlife.

Additional guidance on each of these topics, as well as other topics that should be discussed in the MWCP, are provided below. Note that some of these topics overlap with items to be submitted as part of the Presurvey Notice Requirements (General Permit Exhibits F and G).

Purpose and Objectives of Geophysical Survey

The MWCP should describe the purpose and objectives of the geophysical survey to allow CSLC staff to track why permittees are proposing surveys and what types of data are being collected along the California coast. In addition, the proposed survey schedule (i.e., dates, times) and layout, including spatial information related to the proposed survey track lines (either GPS coordinates or GIS files) and a map/chart of the survey area, must be included in the MWCP for review by CSLC staff.

¹ Permittees conducting geophysical surveys associated with dredging activities (in ports, harbors, and marinas) can develop and submit a general MWCP to CSLC staff to be kept on file; therefore, a MWCP does not have to be submitted prior to each survey. Please see Exhibit E (Part II) of the General Permit for more information.

Geophysical Survey Equipment

The OGPP is based on several common equipment-based factors that were determined to be less harmful to the marine environment. When equipment types or operational factors are not consistent with the OGPP, surveys cannot be performed under the General Permit. Therefore, a list of the specific make and model of all acoustic-generating geophysical equipment should be included in the MWCP and noted on the Presurvey Notification Form (General Permit Exhibit F), including specifications regarding equipment source levels (dB re 1 μ Pa [rms]) and frequencies (Hz, kHz). Additionally, permittees are required to perform routine inspection and maintenance of the equipment to ensure that it remains in proper working order (see General Permit Exhibit H, Mitigation Measure [MM] BIO-6). Permittees should brief CSLC staff regarding their internal QA/QC procedures to make sure that requirements under MM BIO-6 are met. QA/QC procedures may include: checking cables for leaks or damage; conducting board level signal and voltage checks; and running equipment through an internal systems check. Verification of the date and occurrence of such equipment inspection and maintenance must be provided on the required Presurvey Notification Form to the CSLC staff. Including these items in the MWCP will facilitate the CSLC staff's review of the proposed survey for consistency with the OGPP.

One of the most important measures the permittee can implement to avoid acoustic-related effects on marine wildlife is the identification and enforcement of safety zones (See *Safety Zone Monitoring and Geophysical Equipment Operations* on page 4 for additional information). The MWCP should identify and discuss the expected or estimated distances to the received sound pressure levels (SPLs) established by the National Oceanic and Atmospheric Administration (NOAA) for injury (190 dB for pinnipeds, 180 dB for cetaceans and sea turtles) and behavioral modification (160 dB for all marine mammals and sea turtles) and verify that the received SPLs fall within the equipment-specific safety zones as defined in **Table 1** (see General Permit Exhibit H, MM BIO-3). Modeled distances to the 190 dB, 180 dB, and 160 dB isopleths must be reported in the MWCP; permittees are also encouraged to provide distances to the 140 dB and 120 dB isopleths to assist the CSLC staff's ongoing scientific effectiveness monitoring and adaptive management programs for the OGPP.

Table 1. Safety Zone Monitoring by Equipment Type

| Equipment Type | Safety Zone (radius, m) |
|-------------------------|-------------------------|
| Single Beam Echosounder | 50 |
| Multibeam Echosounder | 500 |
| Side-Scan Sonar | 600 |
| Subbottom Profiler | 100 |
| Boomer | 100 |

The acoustic modeling study performed for the OGPP Mitigated Negative Declaration (MND) intended to capture the "typical survey scenario" for geophysical surveys in State waters; this scenario was developed from a variety of sources, including a review of past surveys and consultation with industry regarding representative geophysical

equipment and operating parameters. Based on the results of the acoustic modeling study, the CSLC developed the safety zone distances necessary to ensure that even in varying environmental conditions (e.g., depth, substrate, water temperature), sound levels received by marine wildlife would not exceed the NOAA thresholds. However, if a permittee proposes to use equipment or proposes to conduct a survey under conditions that are not represented under the “typical survey scenario” described in the MND, additional information and/or analysis, including, potentially, modeling of that specific equipment will need to be provided to CSLC staff to review for compliance with the proposed OGPP MND.

Marine Wildlife in California Waters

The MWCP should identify the marine mammals and reptiles that could be expected within the area being surveyed, including the protected species status, minimum population estimate, current population trend, and most likely periods of occurrence for each species/stock. This information is important for MWMs who are responsible for the visual monitoring of marine wildlife during vessel transit and survey operations, as well as for CSLC staff reviewing the Presurvey Notice Requirements, including the MWCP. This information, together with the presurvey requirement identified below under “Current Biological Information,” will assist CSLC staff, survey operators, and MWMs more effectively minimize impacts.

Marine Wildlife Monitoring and Mitigation Measures

Current Biological Information

Prior to the commencement of survey activity, permittees are required to contact the NOAA Long Beach office staff and local whale watching operations to acquire information on the current composition and relative abundance of marine wildlife offshore. Permittees are then required to convey the sightings data to the vessel operator and crew, survey party chief, and onboard MWMs prior to departure (see General Permit Exhibit H, MM BIO-1).

In the event NOAA staff and whale watching operations have limited information on the current composition and relative abundance of marine wildlife in the survey region, the information provided in the MWCP on marine wildlife in California waters (see above) can be used to inform MWMs and survey crew of the potential marine species in the area when survey activities are expected to occur.

Marine Wildlife Monitors

MWMs are responsible for the visual monitoring of marine wildlife during transit and data collection activities from the highest practical vantage point on the survey vessel (with binoculars, as appropriate) (see General Permit Exhibit H, MM BIO-3). Depending on the type of equipment used and its operational frequency, the number of MWMs required to be on the survey vessel will vary (see General Permit Exhibit H, MM BIO-2):

- Two MWMs are required for surveys operating active geophysical equipment at frequencies < 200 kHz. Active geophysical equipment produces acoustic energy, and frequencies < 200 kHz are within the known functional hearing range of marine mammals; therefore sounds produced at these frequencies can be heard by marine mammals.
- One MWM is required for surveys operating active geophysical equipment at frequencies ≥ 200 kHz. Although active geophysical equipment produces acoustic energy, frequencies ≥ 200 kHz are outside of the known functional hearing range of marine mammals; therefore, sounds produced at these frequencies cannot be heard by marine mammals. One MWM is required to prevent collisions with marine wildlife; however, captain/crew may fulfill this role, upon request, and would be responsible for monitoring for marine wildlife and recording all observations.
- One MWM is required for surveys that utilize passive (no acoustic energy) survey equipment (e.g., ROVs, magnetometers, gravity meters) to prevent collisions with marine wildlife; however, captain/crew may fulfill this role, upon request, and would be responsible for monitoring for marine wildlife and recording all observations.

Permittees are required to submit the qualifications of proposed MWMs to NOAA and CSLC staff at least 21 calendar days in advance of the survey; proposed MWMs and their qualifications can be submitted as part of the MWCP or as a stand-alone submission. Survey operations shall not commence until the CSLC staff approves the MWMs and the MWCP.

For surveys requiring two MWMs, permittees may request to conduct geophysical activities with one MWM if the survey is nearshore and/or using a small vessel. Requests must be submitted 21 calendar days in advance of survey commencement and describe in the MWCP how the marine mammal and reptile protection measures will be implemented and effective with only one MWM. CSLC staff will evaluate such petitions on a case-by-case basis and, in granting such authorization at its discretion, will consider factors including the timing, type, and location of the survey, the size of the survey vessel, the availability of alternate vessels, and the ability of one MWM to effectively implement the marine mammal and reptile mitigation measures.

Safety Zone Monitoring and Geophysical Equipment Operations

For surveys operating active geophysical equipment at frequencies < 200 kHz, MWMs are responsible for monitoring an equipment-specific safety zone (**Table 1**) radius centered on the sound source. For equipment operated at frequencies ≥ 200 kHz, a safety zone does not have to be monitored; however, the designated MWM should still be monitoring for marine wildlife and recording all observations and responses to the survey vessel and/or equipment.

For all surveys using active geophysical equipment (regardless of frequency), a soft-start (i.e., ramp-up) technique is required at the beginning of survey activities each day or following a shut-down to allow any marine mammal that may be in the immediate area to leave before the sound sources reach full energy. Operators are required to initiate each piece of equipment at the lowest practical sound level, increasing output in such a manner as to increase in steps not exceeding approximately 6 dBs per 5-minute period. Thirty minutes prior to ramp-up operations, the MWM(s) will begin to visually monitor the safety zone and surrounding area for marine wildlife; if a marine mammal or reptile is sighted within or about to enter the safety zone during ramp-up, a shut-down or power-down must be implemented as though the equipment was operating at full power. Initiation of ramp-up procedures from shut-down requires that the MWM(s) be able to visually observe the full safety zone (see General Permit Exhibit H, MM BIO-5).

Generally, the MWCP should also describe the following items, including how each will be carried out and enforced:

- If a safety zone is required, MWMs have the authority to stop (i.e., shut down) survey operations if a marine mammal or reptile is observed within the specified safety zone. If an animal is sighted within the safety zone, the equipment must be shut down and not ramped-up to full power until the animal is sighted outside of the safety zone or has not been observed for 15 minutes.
- If an animal's actions are observed to be irregular, MWMs have the authority to recommend that the equipment be shut down until the animal moves further away from the sound source.
- In addition to marine mammals and reptiles, MWMs will observe the area around the survey vessel for seabird activity and have the authority to stop or delay survey operations if unusual densities of diving birds/seabirds are identified.
- MWMs have the authority to recommend cessation (or continuation) of operations during periods of limited visibility (e.g., fog, rain) based on the observed abundance of marine wildlife and their ability to view the safety zone (if a safety zone is required). Periodic reevaluation of weather conditions and reassessment of the continuation/cessation recommendation shall be completed by the MWMs.

Avoidance of Pinniped Haul-Out Sites

The MWCP developed and implemented for each survey is required to include identification of haul-out sites within or immediately adjacent to the proposed survey area (see General Permit Exhibit H, MM BIO-7). For surveys within 300 meters (m) of a pinniped haul-out site, the MWCP must require that:

- The survey vessel shall not approach within 91 m of a haul-out site, consistent with National Marine Fisheries Service (NMFS) guidelines;
- Survey activity close to haul-out sites shall be conducted in an expedited manner to minimize the potential for disturbance of pinnipeds on land; and

- MWMs shall monitor pinniped activity onshore as the vessel approaches, observing and reporting on the number of pinnipeds potentially disturbed (e.g., via head lifting, flushing into the water).

The purpose of such reporting is to provide CSLC and California Department of Fish and Wildlife (CDFW) with information regarding potential disturbance associated with OGPP surveys.

Additional Marine Wildlife Monitoring Guidelines

Permittees are encouraged to consider the following, or similar, operational protocols to reduce the likelihood of collision or disturbance. The MWCP should describe procedures for implementing each proposed protocol

- Onboard MWMs will notify the vessel operator if a marine mammal or reptile is observed in the path of the transiting vessel. In response, the vessel operator will slow the vessel and/or change course to avoid contact with the animal, unless those actions would jeopardize the safety of the vessel or crew.
- When whales or other cetaceans (i.e., dolphins) are observed, the operator of the survey vessel will observe the following guidelines to reduce the potential for collision or disruption during vessel transit and survey operations:
 - Maintain a minimum distance of 100 yards (300 feet) from sighted whales;
 - Do not cross directly in front of or across the path of sighted whales;
 - Transit parallel to whales and maintain a constant speed that is not faster than the whale's speed;
 - Do not position the vessel in such a manner to separate female whales from their calf(ves);
 - Do not use the vessel to herd or drive whales; and
 - If a whale engages in evasive or defensive action, slow the vessel and move away from the area until the animal calms or moves out of the area.

Data Collection and Reporting for Marine Wildlife Monitors

The MWCP should describe both the data that will be collected/recorded by the MWMs as well as the procedures for collecting and standardizing that data. At a minimum, onboard MWMs are responsible for recording the following information during vessel transit and survey operations, although specific survey circumstances may warrant additional items:

- Descriptions of any encounters with marine mammals, reptiles, and/or unusual concentrations of diving birds/seabirds (e.g., species, group size, age/size/sex categories [if determinable], behavior, distance and bearing from vessel) and the outcome of those encounters;

- The number of times equipment shut-downs or vessel slow-downs were ordered due to animals being observed in the safety zone or due to poor visibility conditions;
- A summary of observations of pinniped behavior at haul-out sites, if applicable, and any recommendations made related to pinniped avoidance;
- The number of collision events, if applicable, and the species and disposition of animal; and
- Any additional information relevant or necessary for compliance with the post-survey reporting requirement identified in the General Permit (Term and Condition 9.a.ii).

To ensure consistency in the documentation of marine wildlife observations during vessel transit and survey operations, MWMs should use the **Data Collection Guidelines for Marine Wildlife Monitors** prepared by CSLC staff.

This information will allow the CSLC to assess compliance with established monitoring procedures, as well as gain feedback from MWMs on the implementation and effectiveness of the established MMs to adaptively manage the OGPP.

Marine Mammal and Reptile Collision Response and Reporting

If a collision with marine mammal or reptile occurs, the vessel operator shall document the conditions under which the accident occurred, including the following (see General Permit Exhibit H, MM BIO-8):

- Vessel location (latitude, longitude) when the collision occurred;
- Date and time of collision;
- Speed and heading of the vessel at the time of collision;
- Observation conditions (e.g., wind speed and direction, swell height, visibility in miles or kilometers, and presence of rain or fog) at the time of collision;
- Species of marine wildlife contacted (if known);
- Whether an observer was monitoring marine wildlife at the time of collision; and
- Name of vessel, vessel owner/operator, and captain officer in charge of the vessel at time of collision.

After a collision, the vessel shall stop, if safe to do so; however, the vessel is not obligated to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel will then immediately communicate by radio or telephone all details to the vessel's base of operations, and shall immediately report the incident. Consistent with Marine Mammal Protection Act requirements, the vessel's base of operations or, if an onboard telephone is available, the vessel captain will immediately call the National Oceanic and Atmospheric Administration (NOAA)

Stranding Coordinator to report the collision and follow any subsequent instructions. From the report, the Stranding Coordinator will coordinate subsequent action, including enlisting the aid of marine mammal rescue organizations, if appropriate. From the vessel's base of operations, a telephone call will be placed to the Stranding Coordinator, NOAA National Marine Fisheries Service, Southwest Region, Long Beach, to obtain instructions. Although NOAA has primary responsibility for marine mammals in both State and Federal waters, The California Department of Fish and Wildlife will also be advised that an incident has occurred in State waters affecting a protected species. Reports should be communicated to the agencies listed below:

| Federal | State |
|--|--|
| Southwest Region National Marine Fisheries Service Long Beach, CA (562) 980-4017 | Enforcement Dispatch Desk California Department of Fish and Wildlife Long Beach, CA (562) 598-1032 California State Lands Commission Division of Environmental Planning and Management Sacramento, CA (916) 574-0748 slc.ogpp@slc.ca.gov |

Recording and Reporting Procedures

Permittees are required to submit a Post Survey Field Operations and Compliance Report to CSLC staff as soon as possible, but not more than 30 days after the completion of any survey activities conducted under the OGPP General Permit. Please refer to the General Permit for further instruction.

References

Deng Z.D., Southall, B.L., Carlson T.J., Xu, J., Martinez, J.J., et al. (2014) 200 kHz Commercial Sonar Systems Generate Lower Frequency Side Lobes Audible to Some Marine Mammals. PLoS ONE 9(4): e95315. doi:10.1371/journal.pone.0095315.