



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

May 16, 2013

In response, refer to:
2013/9545:DDL

Mitch Purdue
U.S. Department of the Navy
Navy Region Southwest
937 No. Harbor Drive
San Diego, California 92132-0058

Dear Mr. Purdue:

NOAA's National Marine Fisheries Service (NMFS) has reviewed a letter from the U.S. Department of the Navy (Navy), received March 5, 2013, initiating informal consultation on the replacement of a fuel pier and associated improvement, termed the P-151 Fuel Pier Replacement Project (project), planned for the Point Loma area in San Diego Bay, California. The purpose of this project is to upgrade the current operational capacity and meet modern safety standards (including seismic) for a fuel pier dock that has been in operation for over 100 years. NMFS has also reviewed the supporting project description and background information provided by the Navy, including a draft Environmental Assessment (EA) prepared by the Navy in October, 2012. In addition, there have been numerous direct exchanges and project briefings between Navy and NMFS staff as the proposed project has been in development since at least 2011. In response, NMFS offers the following response pursuant to section 7 of the Endangered Species Act (ESA), and comments pursuant to the Marine Mammal Protection Act (MMPA).

Proposed Project

The proposed project is a large demolition and construction project that involves a series of complex actions that are slated to occur over a period of several years. For the purposes of this consultation, the proposed action includes: (1) temporary relocation of the Navy Marine Mammal Program (MMP); (2) demolition and removal of the existing 1.63 acre fuel pier (Pier 181); (3) construction of a new 1.51 acre fuel pier immediately adjacent to the location of the existing fuel pier; and (4) dredging and sediment disposal of approximately 80,000 cubic yards (cy). These proposed activities would occur at Naval Base Point Loma (NBPL), located near the entrance into San Diego Bay in San Diego, California.

Summaries of the various project activities are provided below:

Temporary Relocation of the Navy Marine Mammal Program

Before the pier replacement activities begin, the Navy MMP would be temporarily relocated from the existing locations at Piers 159, 160, and 302 to the north of the fuel pier, and Pier F-122 to the south, to the Naval Mine and Anti-Submarine Warfare Command (NMAWC), part of NBPL located over three kilometers away from the existing fuel pier. This will be done to avoid disruption to their



to the Naval Mine and Anti-Submarine Warfare Command (NMAWC), part of NBPL located over three kilometers away from the existing fuel pier. This will be done to avoid disruption to their working dolphins and sea lions from the noise and activities of the project. Limited construction at NMAWC would involve installation of approximately 50 18" concrete piles with a diesel impact hammer. Some infrastructure including the existing marine mammal enclosures would be towed from the existing facilities to the temporary NMAWC site. The Navy expects that this relocation process will take approximately 90 days to complete. After completion of the new fuel pier, the Navy marine mammal enclosures would be moved back to their original location adjacent to the fuel pier and the temporary facilities at NMAWC would be removed.

Phased Demolition and Removal of the Existing Fuel Pier

Demolition and removal of the existing fuel pier would take place in two phases to maintain the fueling capabilities of the existing fuel pier while the new pier is being constructed. The majority of the demolition work will be conducted over water on barge-mounted equipment, including cranes and excavators. In total, over 1,400 wood and concrete piles as well as 24 steel and 34 plastic piles will be removed from the existing fuel pier structure. Pile removal will initially be attempted by dry-pulling with cranes. A vibratory hammer or pneumatic chipper may be also used to loosen piles. Jetting of piles may also occur, and as a last resort, piles that will not come free will be cut at the mudline. Debris from removing the current fuel pier, including approximately 4,280 cy of concrete, 739 creosote treated timber piles, 680 tons of steel, 4 tons of wiring, and 3,100 linear feet of plastic fender material, would be reused, recycled, or disposed of as appropriate.

Phased Construction of a Replacement Fuel Pier

A new, double-deck fuel pier would be constructed that would provide flexibility in fueling multiple vessel types, meet Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) requirements for seismic performance, and have a total area that is 5,315 square feet/0.12 acre (sq ft/ac) smaller than the area of the existing fuel pier. The current fuel pier has approximately 71,180 sq ft of decking. The proposed new fuel pier would have approximately 65,865 sq ft, which is an overall decrease in the shading of San Diego Bay. Approximately 554 piles are expected to be installed, including: 77 48" and 228 36" steel pipe piles; 164 24" concrete piles; and 84 16" concrete filled fiberglass piles. The exact number of 48" piles will be determined upon completion of an initial 12 pile indicator testing program that will verify the driving conditions and establish the final driving lengths prior to fabrication of the final production piles that would be used to construct the new pier. Steel piles will be initially set with a vibratory hammer, and finished with an impact hammer. Concrete piles will be jetted initially and finished with an impact hammer. Fiberglass piles will be installed with an impact hammer. The approximate productivity of the proposed project assumes an average of 2 steel and 5 concrete or fiberglass piles per day. There would be no pile driving or other in-water construction or demolition during the least tern foraging season (from April 1 through September 15) of each year that the project is ongoing. All demolition and construction activities will occur during the daylight hours. Due to these restrictions on in-water construction, pile driving for the new fuel pier could take up to three years to complete.

Dredging and Sediment Disposal

Dredging and sediment disposal are needed to deepen the existing turning basin for the existing fuel pier, so that the basin can safely accommodate current and future deep draft berthing capabilities for the new fuel pier. The new fuel pier will require a minimum 1,200 ft wide turning basin between the

navigation channel and the east side of the pier. The design depth of the turning basin is 40 ft mean lower low water (MLLW), with 2 ft of design tolerance. In order to achieve this depth, approximately 80,000 cy of material will be dredged, with an average 2,000-4,000 cy of dredging occurring per day. Dredging may occur using either a clamshell bucket or hopper dredge. Ocean disposal of dredge sediments was considered and approved by the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE), but USEPA specified beneficial reuse for nearshore replenishment as the appropriate placement. The dredged sediments would be hauled by barge to a beneficial reuse site south of the Imperial Beach pier. Under the proposed project, dredging could be done before, during, or after the pier replacement effort and could potentially occur while the Navy MMP is at its existing location, so long as pier replacement has not begun. It is anticipated that dredging would take approximately three months to complete. However, there would be no dredging during the California least tern foraging season, April 1 to September 15.

Endangered Species Act Consultation

1. Effects on Green Sea Turtles:

In the letter received March 5, 2013, requesting ESA Section 7 informal consultation with NMFS, the Navy determined that the action may affect, but was not likely to adversely affect, green sea turtles (*Chelonia mydas*). Green turtles are the only species identified by the Navy listed under the ESA and under NMFS' jurisdiction that could be expected to occur in the proposed action area and may be affected by this project. South San Diego Bay serves as important habitat for a resident population of up to about 60 juvenile and adult green turtles in this area (Eguchi *et al.* 2010). Based on genetic analyses and tracking studies conducted by NOAA's Southwest Fisheries Science Center, green turtles found in San Diego Bay likely represent the endangered population of turtles breeding on the Pacific coast of Mexico. There are no areas designated as critical habitat under the ESA in San Diego Bay.

Scientists believe that San Diego Bay may be one of the northern-most foraging areas for green turtles, with the shallow inlet providing valuable food resources such as marine algae and seagrass. While some of the San Diego Bay green turtles are year-round residents, others migrate through central and north San Diego Bay in order to reach their southern breeding grounds, located in the southern state of Michoacán, Mexico, and at the Revillagigedos Islands, offshore central Mexico. Since the early 1960s, sea turtles have been sighted aggregating in the vicinity of the South Bay Power Plant, where warm water effluent was discharged throughout the year. During the warm summer months, the turtles generally moved out of the effluent channel and into the Bay, especially when temperatures within the channel exceed 90°F. During incursions of warm equatorial currents (e.g., during El Niño events), more turtles have been found within the Bay. In December, 2010, the South Bay Power Plant shut down operations permanently, and NMFS is currently in the process of studying any response from the green sea turtles in San Diego including changes in their distribution and movement patterns within the Bay.

Green turtles are also attracted to the high concentrations of eelgrass in San Diego Bay, and the presence of this important food item and habitat for other preferred prey species likely influences sea turtle activity patterns within the Bay (Lemmons *et al.* 2011). Evidence from telemetry studies prior to the plant shut down show that they generally move back and forth between eelgrass beds and the warm effluent channel, with little time spent in between. Data generated from tag-recapture studies suggest that San Diego Bay is a productive habitat for green sea turtles, with green turtles from the Bay showing fast growth rates comparable to green turtles found in more tropical environments

(Eguchi *et al.* 2012). Surveys show that the sea turtles generally foraged and could typically be located within the confines of the South Bay, in relative proximity to the effluent channel (MacDonald *et al.* 2012). Because scientists have generally focused their studies to the south Bay, however, less is known of sea turtle movement within the central and northern areas of the Bay, including the importance of eelgrass beds in these areas to the turtles in the Bay. Recent information produced from monitoring during construction activities and a research project designed to track green turtle movements throughout the Bay have indicated some green turtle activity outside of south San Diego Bay during the winter months (Mitch Purdue, Navy, personal communication, April 11, 2013). Satellite tracking telemetry studies have revealed that individuals which are heading back to nesting beach sites in Mexico typically leave the Bay in late March and April (Jeff Seminoff, NMFS, personal communication, February 24, 2009).

Potential impacts to any green turtles in the area from the project primarily arise from disturbance or injury to sea turtles as a result of demolition or construction activities, including use of cranes, boats, dredges, and other equipment as needed (e.g. vibratory pile hammer) to temporarily relocate the Navy MMP, demolish the existing fuel pier, construct the new fuel pier, and dredge the turning basin. Any turtle present in the project area could receive significant injuries if struck by a vessel or equipment being used. Any turtle that was caught inside or struck by the dredge would likely receive significant injuries that could be fatal. Other potential impacts include disturbance or degradation of any habitat that sea turtles may beneficially use as a result of this project. These types of construction activities can also be relatively loud and have the potential to disturb any animals that are in the vicinity. In particular, the installation of 36" or 48" steel piles is likely to generate substantially more sound than other construction projects in San Diego Bay that NMFS has consulted on with the Navy in the past. The anticipated underwater noise levels from impact and vibratory pile driving on these size piles, in conjunction with the proximate locations of California sea lion (*Zalophus californianus*) haulouts and the general seasonal abundance of several marine mammal species in the northern part of San Diego Bay and the adjacent ocean waters outside the entrance, have prompted the Navy to apply to NMFS for incidental harassment authorization (IHA) for marine mammals under the MMPA (refer to the Draft EA from the Navy for more detail).

NMFS is currently in the process of determining safety criteria (*i.e.*, guidelines) to protect marine mammals exposed to underwater sound. However, pending adoption of these guidelines, NMFS has preliminarily determined, based on past projects, consultations with experts, and published studies, that 180 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ (for cetaceans) and 190 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ (for pinnipeds) are the impulse sound pressure levels that can be received by marine mammals without injury. Marine mammals have shown behavioral changes when exposed to impulse sound pressure levels of 160 dB re 1 $\mu\text{Pa}_{\text{RMS}}$. For more continuous sounds, such as vibratory pile driving, 120 dB $\mu\text{Pa}_{\text{RMS}}$ has been identified as a threshold for behavioral change; for example, beyond this threshold, hauled animals flush into the water and/or move to increase their distance from construction related activities, such as noise associated with pile-driving, presence of a crane barge, the presence of workers, or unfamiliar activity in proximity to the area where they are hauled out. Based on models of sound projection that may be expected to occur as a result of this proposed action, specifically installation of large steep piles (36" and 48"), the Navy has predicted the range of influence from the project location where sound levels will exceed these thresholds. Locally, source sound levels during the driving of large steel piles are estimated to be 195 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ and 180 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ for impact and vibratory pile driving, respectively.

Currently, there are no similar guidelines for safety criteria that directly relate to sea turtle injuries or behavioral response changes resulting from sound levels. In general, NMFS and other federal

agencies have relied upon the noise criteria for marine mammals (cetaceans or pinnipeds) and the safety zones that have been employed for projects to minimize the risk of injury to these species as a conservative proxy for managing impacts of very loud sound on sea turtles. While sea turtle hearing has not been studied nearly as much as marine mammal hearing, the general consensus is that, given what is known about the relative complexity of hearing and underwater communication abilities of many marine mammal species compared to sea turtles, it is likely that most, if not all, marine mammals species are more sensitive to underwater sound than sea turtles. Regardless of the specific noise exposure that sea turtles might experience during this proposed project, it is likely that disturbance from this project will lead to turtles avoiding the immediate project area once the activity has commenced, reducing the likelihood of turtles coming in direct contact with construction equipment.

In their letter, received March 5, 2013, the Navy indicated they would employ avoidance and minimization measures to avoid adverse effects to green sea turtles. In conjunction with the Navy's proposed marine mammal monitoring associated with this project, qualified observers will also search for and document any occurrence of sea turtles within areas of potential effect or interaction with the project. During pile driving/extraction activities, monitoring would extend to the limit of potential behavioral effects to marine mammals from underwater sound. Specifically, monitoring would extend to the underwater 160 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ isopleth for impact pile driving and to either the underwater 120 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ isopleth or to the point at which project sound becomes indistinguishable from background noise (maximum project sound \leq median ambient sound), whichever is less, for vibratory pile driving. A 10-meter buffer zone would also be monitored during other in-water operations of equipment and vessels. Monitoring would commence at least 15 minutes prior to the activities; if a sea turtle is seen within these ranges described above prior to or during the corresponding activity, the activity would not commence until the animal has moved out of the area or at least 15 minutes has passed since the last such sighting. Prior to the start of pile driving or dredging each day, after each break of more than 30 minutes, and if any increase in the intensity is required, the Navy would use a soft start or ramp-up procedure to allow animals in the area to disperse. Specifically, the soft start procedure for pile driving requires contractors to initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a 30-second waiting period. This procedure will be repeated two additional times. If an impact hammer is used, contractors are required to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 30-second waiting period, then two subsequent 3-strike sets. The Navy believes that this will prevent adverse effects to green sea turtles.

(i) *Effects on sea turtles in the construction site (including encounters with cranes, boats, and dredges)*

In assessing the risk of this project, NMFS considers the location of project activities in relation to the probability that green turtles may be found in the vicinity. As the project area for the fuel pier replacement lies within Naval Base Point Loma in the northern part of San Diego Bay, including the MMAWC facility 3 kilometers from the existing fuel pier, the probability that vessels or construction equipment will encounter any sea turtles is low as turtles as they are not likely to spend much time, if any, present in the north part of San Diego Bay near the proposed project area. While it is possible that turtles could be transiting in/out of San Diego Bay past Point Loma, turtles are expected to be swimming in the water column and not immediately along the shore within the confines of Naval Base Point Loma and the active working waterfront, and therefore, are not likely to encounter vessels and equipment associated with the proposed project activities, including dredging. Although sound levels from pile driving which could injure sea turtles are expected to be reached in the construction

site, sea turtles are not expected to be in the zone of impact when such impact occurs for the reasons discussed herein. As proposed by the action agency, if a sea turtle is seen in the construction site prior to or during the corresponding activity, the activity would not commence until the animal has moved out of the area or at least 15 minutes has passed since the last such sighting. In addition, if any turtles are in the construction site area but avoid detection, the use of ramp-up procedures to slowly increase the intensity of pile-driving gives sea turtles an opportunity to detect the commencement of project activities and an opportunity to move away; based on our understanding of their behavior they are expected to avail themselves of this opportunity. Adequate habitat exists beyond the construction zone, with adequate carrying capacity to support any avoiding sea turtles without any reduction in their fitness. As a result, the risk of direct contact and injury or death as a result of the proposed project is discountable or insignificant.

(ii) Effects on turtles from sound beyond the immediate construction site

There is an additional consideration for the effects of the project extending beyond the immediate project area, as noise levels loud enough to produce behavioral changes to marine mammals may be generated by the driving of large steel piles extending throughout most of the northern portion of San Diego Bay out into the ocean (e.g. in excess of 160 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ during impact pile driving and 120 dB re 1 $\mu\text{Pa}_{\text{RMS}}$ during vibratory pile driving). Although these sound propagation models do not project increased sound levels into the southern part of San Diego Bay, sea turtles may occasionally be found in the northern part of San Diego. Sound pressure levels of the magnitude that are expected to be produced by this proposed project may have deleterious effects on sea turtles if they interfere with communication, foraging or resting behavior, or predator/prey detection. More significantly, acoustic overexposure to loud sounds can lead to a temporary or permanent loss of hearing (termed a temporary or permanent threshold shift). As mentioned above, NMFS has yet to establish specific noise criteria for sea turtles exposure to underwater sound. While the number of published studies on the impacts of sound on sea turtles is small, the available data does suggest that sea turtles have higher hearing thresholds at frequencies where construction sound is concentrated (Ridgeway *et al.* 1969; Lenhardt 1994; Bartol and Ketten 2003; Martin *et al.* 2012). In one test where caged green and loggerhead sea turtles were exposed to single air gun sounds, the trials showed that above a received level of 166 dB re 1 $\mu\text{Pa}_{\text{RMS}}$, the turtles noticeably increased their swimming activity compared to nonoperational periods, with swimming time increasing as air gun sound pressure levels increased during close approach. Above 175 dB re 1 $\mu\text{Pa}_{\text{RMS}}$, behavior became more erratic, possibly indicating the turtles were in an agitated state (McCauley *et al.* 2000). Assuming the levels identified in that study are reasonable indications of the sound levels that may affect sea turtles, the monitoring program that has been proposed as part of this project to protect marine mammals should be sufficient to minimize the risk of adverse effects from loud noise produced by construction to sea turtles to the point at which no reduction in individual fitness is expected to occur. The duration of any exposure to high sound levels is expected to be minimal, as sound sources will cease shortly after detection of a turtle, and that turtle will most likely head out of the area before or shortly after noise levels get loud. Given that green sea turtles are not likely to spend much time in north San Diego Bay to begin with, avoidance of this portion of San Diego Bay for any period of time is not likely to limit their ability to forage or have any detectable effect on health. While some eelgrass is located in the north part of San Diego Bay, most all of the sizeable eelgrass beds are located in other portions of San Diego Bay that should not be affected by the proposed project. Additionally, pile driving activity will only occur during the daytime hours, and will not occur from April 1 through September 15 for the duration of this project. As a result, sea turtles should have adequate periods of time where they are free to transit in and out of San Diego without any risk of exposure to loud sound, including April when they might be expected to head south for mating and nesting. Therefore, the potential

effects of noise disturbance are expected to be insignificant and discountable given the proposed mitigation and monitoring requirement that the Navy will employ, the low probability that sea turtles will be in north San Diego Bay for any length of time, and the lack of any detectable impact on health that avoidance of north San Diego Bay would have on green sea turtles.

(iii) Effects on turtles from habitat impacts

Although the northern portion of San Diego Bay does not appear to be the typical location of green turtle presence in the Bay, it is possible that green turtles may occasionally take advantage of any available eelgrass habitat in that area temporarily or while transiting out of San Diego Bay. As part of the proposed project, the Navy has conducted an Essential Fish Habitat (EFH) consultation with NMFS, which includes assessment of potential impacts to eelgrass habitat. In the project description, the Navy highlights several design features of the newly constructed fuel pier that minimize the potential for impacts to eelgrass habitat, including reducing the pier footprint nearshore and alignment of the pier to avoid current and historical areas of eelgrass presence. In total, the Navy expects that the fuel pier replacement will affect 0.1 acres of eelgrass habitat. The temporary relocation of the Navy MMP is also expected to affect eelgrass habitat, as the physical structures that house the marine mammals will be placed in an area that does currently or has historically support about 1.0 acre of eelgrass. Green sea turtles do not appear to commonly use north San Diego Bay. Accordingly, the loss of the proposed amount of eelgrass in north San Diego Bay is not expected to be noticeable by the turtles, as eelgrass beds in this area are not believed to be as important in sustaining the foraging needs of green sea turtles as those eelgrass beds in other parts of San Diego Bay. Any turtle that may occasionally visit the northern part of San Diego Bay would be expected to be a temporary visitor that was not likely to remain in the area long, even without any disturbance to the existing eelgrass habitat in that area. The remaining eelgrass habitat in north San Diego Bay is expected to be sufficient to provide the same minimal foraging needs of turtles that are passing through the area that would have been required prior to this proposed project.

Upon completion of the project, the Navy will remove the temporary MMP structures, and eelgrass may be reestablished in the impacted area shortly after the project ceases. As a result, the insignificant amount of eelgrass habitat impacts described above may only be temporary; nevertheless, as such regrowth is not reasonably certain to occur, we do not rely on regrowth for the purposes of this analysis.

Furthermore, some of the eelgrass habitat that has been created through the Navy's bank includes some limited areas within north San Diego Bay. While the loss of a small portion of eelgrass habitat in north San Diego would not be expected to have a significant effect on green sea turtles for the reasons stated above, the resultant eelgrass habitat in north San Diego Bay, in part resulting from the Navy's bank activities, is expected to adequately maintain or improve the habitat function for any turtles that do pass through the area.

Based on all of the above (except for the regrowth potential as specifically noted), NMFS concurs with the Navy's determination that the proposed action may affect, but is not likely to adversely affect, green sea turtles.

As part of ongoing research to understand the ecology of green sea turtles in San Diego Bay in cooperation with the Navy, NMFS requests that any observations of sea turtles made in the vicinity of the project area during this proposed project be communicated to NMFS regional staff at the earliest convenience. NMFS regional staff also requests to be notified when major construction

activities commence begin and end each season, in order to keep NMFS researchers and other partners in San Diego Bay abreast of changing conditions that may influence sea turtle behavior or movements in the Bay.

2. Effects on WNP Gray Whales:

As mentioned previously, the Navy has applied for an IHA under the MMPA for potential harassment of marine mammals, including gray whales (*Eschrichtius robustus*), as a result of the sound pressure levels produced from the driving of large steel piles during this proposed project. There are two recognized gray whale stocks in the North Pacific, the eastern North Pacific (ENP) and the western North Pacific (WNP), which is listed as endangered under the ESA. Historically, the WNP gray whales were considered geographically isolated from the ENP stock; however, recent information is suggesting more overlap exists between these two stocks. It is also possible that WNP gray whales that migrate within the range of the ENP gray whales, specifically along the coastal waters of San Diego, could be found within the acoustic zone of influence where sound pressure levels exceed established thresholds for potential behavior change resulting from proposed project activities. Two WNP gray whales have been satellite-tracked from Russian foraging areas east along the Aleutian Islands, through the Gulf of Alaska, and south past the coasts of Washington and Oregon to the southern tip of Baja California in one case (Mate *et al.* 2011) and in the other case, where the satellite tag remained on the animal longer, back to Sakhalin Island (IWC 2012). Comparisons of ENP and WNP gray whale photo-identification catalogs have thus far identified 22-24 WNP gray whales occurring on the eastern side of the basin (IWC 2012; Weller *et al.* 2011; Burdin *et al.* 2011). During one field season off Vancouver Island, WNP gray whales were found to constitute 6 of the 74 (8.1%) of photo-identifications (Weller *et al.* 2012). In addition, two genetic matches of WNP gray whales off Santa Barbara, California have been made (Lang *et al.* 2011). Thus, a portion of the WNP gray whale population is assumed to have migrated, at least in some years, to the eastern North Pacific during the winter breeding season (Burdin *et al.* 2012; Urban *et al.* 2012).

The Navy's IHA application suggests that 1 gray whale may be exposed to sound pressure levels in excess of the thresholds for behavioral change (160 dB re 1 $\mu\text{Pa}_{\text{RMS}}$) for up to 15 days each year during the 3-year term of this project. It is expected that any gray whale that could be found within the acoustic zone of influence and exposed to loud noise during the proposed action is presumably one that is idle for a period of time around the entrance to San Diego Bay instead of continuing directly along its migratory path. The current minimum population estimate for ENP gray whales is 19,126 (Carretta *et al.* 2012). The most recent estimate of WNP gray whale abundance is 137 individuals (IWC 2012). At any given time during the migration, WNP gray whales could be part of the approximately 20,000 gray whales migrating through the Southern California Bight offshore of San Diego, but the chance that any given whale that would diverge from the migration and linger near or into San Diego Bay would be a WNP gray whale is extremely small with a probability of less than 1%, even if the entire population of WNP gray whales were part of the annual gray whale migration. While it is possible that any gray whale found near San Diego Bay could be a WNP gray whale, the likelihood remains extremely low.

NMFS also considers the likely impact of a WNP gray whale exposure to the proposed project. Under the proposed project monitoring, the Navy will be monitoring for the presence of gray whales and other marine mammals. The area where sound levels are expected to cause injury to marine mammals will be monitored and project construction activities will not be conducted while marine mammals, specifically gray whales, are present in the shutdown zone range (e.g., in excess of 190 dB re 1 $\mu\text{Pa}_{\text{RMS}}$), which is expected to be within 100 meters of pile driving operations at the most. In

addition, the Navy will be employing ramp-up mitigation measures to slowly increase the intensity of sound produced giving any gray whale in the area that was not initially observed a chance to detect the oncoming presence of construction activities and the opportunity to move further away to avoid injury. Any whales that might initially be in the zone of influence of potentially injurious sound levels should receive ramp-up sound levels that will cause them to move out of the area prior to exposure to potentially injurious sound levels. As a result, in the unlikely event that a WNP gray whale was in the project area, it would not be expected to be exposed to any injurious sound levels. NMFS also expects that any gray whales that may perceive the sound of construction activities as they approach San Diego Bay are likely to avoid entering the Bay and approaching the proposed project area, and will likely resume their migration route along the coast. Avoidance of the project area and San Diego Bay in general is not likely to cause any harm to individuals, since gray whales that are near San Diego are either on their way to mating/birthing grounds in Mexico or to summer foraging locations in Alaska and do not rely upon entering the bay for breeding, rearing, migrating, feeding, or sheltering. Consequently, it is unlikely that any effects to gray whales from this proposed action will lead to decreased fitness or survival.

Based on the above, the likelihood that a WNP gray whale would be adversely affected by this proposed project is insignificant and discountable. As a result, NMFS concludes that the proposed action may affect, but is not likely to adversely affect, WNP gray whales.

As part of the monitoring efforts that are associated with the proposed action, NMFS requests that any photos of gray whales taken in the vicinity of the proposed action be submitted to NMFS regional staff for comparison with photo-identification catalogs that are available for WNP gray whales.

This concludes informal consultation for the proposed action. Reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered; or (3) a new species is listed or critical habitat designated that may be affected by the action. As noted above, injury or death of sea turtles or WNP gray whales are not expected from this project; evidence of such an outcome would require re-initiation under (1) of this paragraph. In such a case, the Navy should immediately cease operations and contact our regional stranding coordinator, Sarah Wilkin, at (562) 980-3230.

Please note that consultation under the ESA does not affect Navy's obligations under the MMPA with regard to the underlying action.

Marine Mammal Protection Act Comments

Marine mammals are protected under the Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1361 et. seq.). Under the MMPA, it is generally illegal to "take" a marine mammal without prior authorization from NMFS. "Take" is defined as harassing, hunting, capturing, or killing, or attempting to harass, hunt, capture, or kill any marine mammal. Except with respect to military readiness activities and certain scientific research conducted by, or on behalf of, the Federal Government. "Harassment" is defined as any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild, or has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration,

breathing, nursing, breeding, feeding, or sheltering. Please note that this letter does not provide Incidental Harassment Authorization (IHA) for any marine mammals; any authorization will come from NMFS Office of Protected Resources, in Silver Spring, Maryland. These comments are provided to facilitate direct coordination with the local NMFS Southwest Regional Office responsible for marine mammal conservation in the area of the proposed project.

California sea lions, Pacific harbor seals (*Phoca vitulina richardii*), and bottlenose dolphins (*Tursiops truncatus*) may be found in the project area, as defined by the range of sound levels that approach or exceed noise criteria for behavioral changes or physical harm that may be produced by the driving of large steel piles. Gray whales may also be found in the project area; however, for the reasons discussed above, the project is not expected to result in physical harm to such whales by the driving of large steel piles. As a result of the sound modeling on the potential impacts of the proposed action, in combination with marine mammal surveys of San Diego Bay and the surrounding waters conducted by the Navy over the last few years, the Navy has applied to NMFS for an IHA under the MMPA for incidental harassment of all four of these species over the course of this project. The IHA application is currently under review by NMFS Office of Protected Resources.

In addition to any monitoring or reporting that might be required pursuant to an IHA by NMFS Office of Protected Resources, in the unlikely event of an injury or mortality of a marine mammal due to this project, please immediately contact our regional stranding coordinator, Sarah Wilkin at (562) 980-3230. As part of the Navy's ongoing efforts to understand the sound levels generated by large construction activities in San Diego Bay in cooperation with NMFS, including pile removal and installation, NMFS is anticipating that the Navy will be collecting data on the sound attenuation associated with the driving of various types of piles. NMFS believes this information will be invaluable in understanding the impact of future projects that may occur in San Diego Bay, as well as other places. NMFS fully encourages the Navy to conduct these studies and requests that any data gathered on the sound pressure levels produced by these activities or impacts to any living marine resources resulting from this project be shared to NMFS regional staff at the earliest convenience. NMFS regional staff is available to help assist in these studies or interpretation of data as needed upon request from the Navy.

Thank you for consulting with NMFS and consideration of our comments. If you have any questions pursuant to this letter or other ESA or MMPA issues, please contact Dan Lawson at (562) 980-3209 or Dan.Lawson@noaa.gov, or Monica DeAngelis at (562) 980-3232 or Monica.DeAngelis@noaa.gov, respectively.

Sincerely,



Rodney R. McInnis
Regional Administrator

cc: Jeffrey Seminoff, Southwest Fisheries Science Center
Administrative File: 151422SWR2013PR00094

References

- Bartol, S.M. and D. Ketten. 2003. Auditory brainstem responses of multiple species of sea turtles. In: Gisner, R., ed. Environmental consequences of underwater sound (ECOUS) abstracts, May 12-16, 2003. Office of Naval Research: Arlington, VA.
- Burdin, A. M., D. Weller, O. Sychenko, and A.L. Bradford. 2012. "*Western Gray Whales off Sakhalin Island, Russia: A Catalog of Photo-Identified Individuals*". 205 individuals. Period 1994-2011.
- Carretta, J.V., E. Oleson, D.W. Weller, A. Lang, K.A. Forney, J. Baker, B. Hanson, K. Martien, M.M. Muto, M.S. Lowry, J. Barlow, D. Lynch, L. Carswell, R.L. Brownell, D.K. Mattila, and M.C. Hill. 2013. U.S. Pacific Marine Mammal Stock Assessment: 2012. U.S. Department of Commerce Technical Memorandum, NOAA-TM-NMFS-SWFSC-504.
- Eguchi, T., J.A. Seminoff, R.A. LeRoux, P.H. Dutton, D.L. Dutton. 2010. Abundance and survival rates of green turtles in an urban environment: coexistence of humans and an endangered species. *Marine Biology* 157:1869-1877.
- IWC. 2012. Extracts from the IWC64 Scientific Committee report relevant to the GWAP. International Whaling Commission.
- Lang, A. R., D.W. Weller, R. LeDuc, A.M. Burdin, V.L. Pease, D. Litovka, V. Burkanov, R.L. Brownell, Jr.. 2011. Genetic analysis of stock structure and movements of gray whales in the eastern and western North Pacific. International Whaling Commission.
- Lemmons, G., R. Lewison, L. Komoroske, A. Goas, C.T. Lai, P. Dutton, T. Eguchi, R. LeRoux, and J. Seminoff. 2011. Trophic ecology of green sea turtles in a highly urbanized bay: Insights from stable isotopes and mixing models. *Journal of Experimental Marine Biology and Ecology* 405:25-32.
- Lenhardt, M.L. 1994. Auditory behavior of loggerhead sea turtle (*Caretta caretta*). In: K.A. Bjorndal, A.B. Bolten, D.A. Johnson, and P.J. Eliazar (compilers). Proceedings of the 14th Annual Symposium on Sea Turtle Biology and Conservation. NOAA Technical Memorandum NMFS-SEFSC-351.
- Martin, K.J., S.C. Alessi, J.C. Gaspard, A.D. Tucker, G.B. Bauer, and D.A. Mann. 2012. Underwater hearing in the loggerhead turtle (*Caretta caretta*): a comparison of behavioral and auditory evoked potential audiograms. *Journal of Experimental Biology* 215:3001-3009.
- Mate, B., A. Bradford, G. Tsidulko, V. Vertyankin, and V. Ilyashenko. 2011. Late-feeding season movements of a western North Pacific gray whale off Sakhalin Island, Russia and subsequent migration into the eastern North Pacific. International Whaling Commission-Scientific Committee, Tromso, Norway.
- McCauley, R. D., Fewtrell, J., Duncan, A. J., Jenner, C., Jenner, M.-N., Penrose, J. D. 2000. Marine Seismic Surveys: Analysis and Propagation of Air-gun Signals; and Effects of Air-gun Exposure on Humpback Whales, Sea Turtles, Fishes and Squid. (R99-15, pp. 198). Western Australia: Centre for Marine Science and Technology.

Ridgeway, S.H., E.G. Wever, J.G. McCormick, J. Palin, and J.H. Anderson. 1969. Hearing in the giant sea turtle, *Chelonia mydas*. Proc. Nat. Acad. Sci (USA) 64:884-890.

Weller, D. W., Klimek, A., Bradford, A.L., Calambokidis, J., Lang, A.R., Gisborne, B., Burdin A.M, Szaniszlo, W., and Brownell RL, Jr. 2011. Movements of western gray whales from the Okhotsk Sea to the eastern North Pacific. International Whaling Commission-Scientific Committee, Tromso, Norway.

Urbán J. R., D. Weller, O. Tyurneva, S. Swartz, A. Bradford, Y. Yakovlev, O. Sychenko, H. Rosales N., S. Martínez A., A. Burdin, and A. Gómez-Gallardo U. 2012. Photographic comparison of the western and Mexican gray whale catalogues: 2012. Laguna San Ignacio Ecosystem Science Program, June 2012.

Weller, D. W. A. Klimek, A.L. Bradford, J. Calambokidis, A.R. Lang, B. Gisborne, A.M. Burdin, W. Szaniszlo, J. Urbán, A. Gomez-Gallardo Unzueta, S. Swartz, and R.L. Brownell, Jr. 2012. Movements of gray whales between the western and eastern North Pacific. Endangered Species Research 18:193-199.