



# MARINE MAMMAL COMMISSION

12 May 2020

Ms. Jolie Harrison, Chief  
Permits and Conservation Division  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by Pacific Shops, Inc. (Pacific Shops) seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA) to take small numbers of marine mammals by harassment. The taking would be incidental to improving the marina and shoreline in Alameda, California, during a two-year period. NMFS plans to issue two separate, but consecutive, one-year incidental harassment authorizations, one for activities from 1 June 2020 through 31 May 2021 and the second from 1 June 2021 through 31 May 2022. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 29 April 2020 notice (85 Fed. Reg. 23790) announcing receipt of the application and proposing to issue the authorizations, subject to certain conditions.

Pacific Shops would install and remove piles during improvements of the marina, shoreline, and other facilities and structures in Alameda. Operators would (1) remove up to 301 16-in timber piles and 12-in concrete piles using a vibratory hammer or cutting them at the mudline and (2) install up to 469<sup>1</sup> steel sheet piles, 41 16-in concrete piles, and 2 36-in steel pipe piles using a vibratory hammer and/or impact hammer during Year 1. In Year 2, operators would install up to 259 steel sheet piles, 130 wide-flange steel beams, 19 14-in concrete piles, 8 24-in concrete piles, 1 30-in steel pipe pile, and 1 36-in steel pipe pile using a vibratory and/or impact hammer. Pacific Shops' activities could occur on up to 68 days in Year 1 and 98 days in Year 2, weather permitting. It would limit pile-driving and -removal activities to daylight hours.

NMFS preliminarily has determined that, at most, the proposed activities could cause Level B harassment of small numbers of six marine mammal species. NMFS anticipates that any impact on the affected species and stocks would be negligible. NMFS also does not anticipate any take of marine mammals by death or serious injury and believes that the potential for disturbance will be at the least practicable level because of the proposed mitigation measures. The proposed mitigation, monitoring, and reporting measures include—

- conducting hydroacoustic monitoring during pile-driving activities and adjusting the Level A and B harassment zones, as necessary;

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<sup>1</sup> Which also includes the removal of 107 of those piles.

- using a sound attenuation device (i.e., a bubble curtain) during impact driving of steel beams and pipe piles and implementing various measures regarding performance standards;
- ceasing in-water heavy machinery activities if any marine mammal comes within 10 m of the equipment and reducing vessel speed to the minimum level required to maintain steerage and safe working conditions;
- using soft-start, delay, and shut-down procedures;
- using up to two land-based qualified protected species observers to monitor the Level A<sup>2</sup> and B harassment zones for 30 minutes before, during, and for 30 minutes after the proposed activities;
- using delay and shut-down procedures, if a species for which authorization has not been granted or if a species for which authorization has been granted but the authorized takes are met, approaches or is observed within the Level A and/or B harassment zone;
- reporting injured and dead marine mammals to the Office of Protected Resources and the West Coast Regional Stranding Coordinator *and* ceasing activities, if appropriate; and
- submitting a draft and final hydroacoustic<sup>3</sup> and marine mammal monitoring report.

### **Bubble curtain efficacy**

The Commission has commented numerous times on the assumptions used by NMFS regarding the efficacy of bubble curtains, please review its most recent [20 April 2020 letter](#) regarding this matter in concert with this letter. Briefly, NMFS has adopted a standard 7-dB source level reduction when bubble curtains are to be used during impact pile driving. Bubble curtains that are placed immediately around the pile do not achieve consistent reductions in sound levels because they cannot attenuate ground-borne sound<sup>4</sup>. Specifically, appreciable attenuation is not observed for the sound that resonates through the ground into the far field or for low-frequency sound in general, and a 7-dB source level reduction factor is unsubstantiated by the data currently available. As such, the Commission again recommends that NMFS (1) consult with acousticians, including those at UW-APL, regarding the appropriate source level reduction factor to use to minimize near-field (<100 m) and far-field (>100 m) effects on marine mammals<sup>5</sup> or (2) use the data NMFS has compiled regarding source level reductions at 10 m for near-field effects and assume no source level reduction for far-field effects for all relevant incidental take authorizations. The Commission has made this recommendation, with supporting justification and replies to NMFS's previous responses, since mid-December 2019—NMFS has yet to address it. Instead, NMFS has directed the Commission to its response that predated this specific recommendation<sup>6</sup> and to a *Federal Register*

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<sup>2</sup> And shut-down zones.

<sup>3</sup> The Commission informally noted that some of the hydroacoustic monitoring report requirements were missing in section 6(c) of the draft authorizations. Specifically, (1) the type *and* size of pile and how long the sound attenuation device is used (e.g., for the entire installation, or only a portion if issues arise) should be included in requirement 6(c)(ii), (2) root-mean-square sound pressure level should be included in section 6(c)(iii), (3) the timeframe over which the sound is averaged (e.g., 1, 5, or 30 sec) should be included in section 6(c)(iv), and (4) section 6(c)(vi) should specify “Estimated source levels referenced to 10 m, transmission loss coefficients, and estimated Level A and B harassment zones.” NMFS indicated it would revise the final authorizations accordingly.

<sup>4</sup> Bubble curtains also attenuate higher rather than lower frequency sound.

<sup>5</sup> Which also includes Level A harassment in some instances.

<sup>6</sup> In at least two instances (85 Fed. Reg. 16063 and 6921), NMFS directed the Commission to its response on 25 November 2019 (84 Fed. Reg. 64833) for a letter the Commission sent on 5 November 2019.

notice that does not pertain to NMFS<sup>7</sup>. The Commission explicitly requests a detailed response to both parts of this recommendation if NMFS does not follow or adopt it, as required under section 202(d) of the MMPA.

### **Sufficiency of shut-down zones and Level A harassment takes**

The Commission informally noted that the Level A harassment zones during impact installation of 36-in steel piles were overestimated for both Year 1 and Year 2. NMFS estimated the Level A harassment zones based on installation of three 36-in steel piles per day rather than two piles that would be installed in Year 1 and one pile that would be installed in Year 2. NMFS indicated that it would revise the Level A harassment zones for impact installation of 36-in steel piles accordingly, which would result in smaller Level A harassment and in some cases smaller shut-down zones than were originally proposed<sup>8</sup>. All of the shut-down zones encompass the Level A harassment zones<sup>9</sup>, except for HF cetaceans during impact installation of two 36-in steel piles.

Although the original Level A harassment zone was 532 m for HF cetaceans, NMFS proposed to require Pacific Shops to implement a 400-m shut-down zone citing that PSOs will be able to monitor that zone more effectively and that the smaller zone will reduce unnecessary shut downs (see footnote a in Table 12 of the *Federal Register* notice). The Commission informally noted that it was unaware of harbor porpoises approaching active pile-driving sites close enough to cause unnecessary shut downs at 532 m. Additionally, the revised Level A harassment zone during installation of two 36-in steel piles would be 410 m, just 10 m larger than NMFS's originally proposed shut-down zone. The Commission informally noted that NMFS should increase the shut-down zone to 410 m, as that minor increase would not cause unnecessary shut downs for HF cetaceans and could still be monitored effectively. NMFS indicated it would retain the 400-m shut-down zone, since it was still sufficient to prevent Level A harassment based on the duration component, which is inherent in the Level A harassment threshold. As the Commission has stated previously, PSOs are unable to determine how long and where an animal is located when they are underwater and possibly incurring permanent threshold shift. A PSO can only delineate where an animal surfaces. As such, unless implementation of a shut-down zone is impracticable<sup>10</sup>, it should encompass the extent of the associated Level A harassment zone. In this instance, a 10-m increase in the shut-down zone is practicable—both in terms of the PSOs implementing it effectively and not unnecessarily. Until NMFS revises the manner in which it estimates Level A harassment zones using its cumulative sound exposure level thresholds<sup>11</sup> and to ensure Pacific Shops is effecting the least

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<sup>7</sup> In 85 Fed. Reg. 19302, NMFS directed the Commission to its response from 29 November 2019 (84 Fed. Reg. 64483). None of NMFS's notices from 29 November 2019 pertain to incidental taking authorizations, and 84 Fed. Reg. 64483 involves the Under Secretary of Defense for Research and Engineering's notice of adoption of the personnel demonstration project flexibilities by the U.S. Army Research Institute for the Behavioral and Social Sciences.

<sup>8</sup> NMFS also plans to revise the Level A harassment zones during vibratory installation of 36-in steel piles, which would result in smaller Level A harassment zones but the same shut-down zones as originally proposed.

<sup>9</sup> Based on the relevant parameters noted in Table 9 of the *Federal Register* notice, the Commission also informally noted that the Level A harassment zones were incorrect for high-frequency (HF) cetaceans during vibratory removal of 16-in timber piles and for the various functional hearing groups during vibratory installation of sheet piles in Table 10. NMFS indicated that the Level A harassment zones would be increased accordingly in the final authorizations.

<sup>10</sup> Or Level A harassment takes are proposed for authorization.

<sup>11</sup> Which currently includes the number of strikes per pile or time necessary to install/remove a pile and the number of piles installed/removed in a given day.

practicable adverse impact on the stock, the Commission recommends that NMFS increase the shut-down zone from 400 to 410 m for HF cetaceans during impact installation of 36-in steel piles.

In addition, the Commission informally noted that Pacific Shops' activities would occur in a marina with many visual obstructions and a harbor seal could inadvertently surface within a shut-down zone before activities can cease. The shut-down zones would be 140 m during impact installation of wide-flange steel beams on 33 days and 120 m during impact installation of 36-in steel piles on one day in Year 2. Any seal that surfaces in the Level A harassment zone<sup>12</sup> would be enumerated as a Level A harassment take. Since Pacific Shops did not request and NMFS did not propose to authorize Level A harassment takes of any species, Pacific Shops would be in violation of its authorization should a seal occur within one of those zones before activities cease. Given the size of the Level A harassment zones, the inability of PSOs to monitor how long and where seals are located while underwater, and the visual obstructions (e.g., barges, piers, boats, etc.) present in the marina that limit observation of the full extent of the zones, the Commission recommends that NMFS authorize up to five Level A harassment takes of harbor seals during Year 2.

### **Sufficiency of Level B harassment takes**

NMFS proposed to authorize up to 14 Level B harassment takes of California sea lions in Year 1 and 20 Level B harassment takes in Year 2 based on the assumption that a single sea lion would be observed every five days. In June 2019, Pacific Shops conducted marine mammal monitoring at the project site and observed a single sea lion during the four days it monitored for marine mammals. The Commission informally noted that NMFS should have proposed to authorize one sea lion take every four days rather than five days based on Pacific Shops' in-situ monitoring data. NMFS indicated it needed more time to deliberate. Although scant marine mammal data are available for the project site, the data that are available indicate that NMFS underestimated the number of takes of California sea lions. It is imperative that NMFS authorize a sufficient number of Level B harassment takes to minimize any unnecessary shut downs should the allotted number of takes be met in either year. This will be especially important when Pacific Shops extrapolates the observed takes to the total number of animals taken. As such, the Commission recommends that NMFS authorize at least 17 rather than 14 Level B harassment takes of California sea lions in Year 1 and 25 rather than 20 Level B harassment takes in Year 2. The Commission would not be opposed to NMFS authorizing a single California sea lion take for each of the 68 days of activities in Year 1 and 98 days of activities in Year 2, since sea lions have the potential to occur within the project area and were the only species observed during Pacific Shops' in-situ monitoring in 2019.

### **Hydroacoustic monitoring plan**

NMFS indicated that Pacific Shops intends to conduct hydroacoustic monitoring to confirm the source levels, transmission loss coefficients, and extents of the Level A and B harassment zones (85 Fed. Reg. 23810). NMFS stated that it would review the resulting data and modify the Level A and B harassment zones accordingly (85 Fed. Reg. 23810). Although NMFS indicated that Pacific Shops would follow accepted methodological standards to achieve its objectives, a proposed hydroacoustic monitoring plan is not available for review. The Commission has noted numerous

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<sup>12</sup> Which are 139 and 115 m, respectively.

issues in previously proposed hydroacoustic monitoring plans<sup>13</sup> (see the Commission's most recent [3 February 2020 letter](#) regarding this matter), as well as in hydroacoustic monitoring reports<sup>14</sup>. As such, the Commission informally inquired whether both the hydroacoustic monitoring plan and the monitoring results would be reviewed by NMFS's internal acoustics expert<sup>15</sup> before the plan is implemented and any Level A or B harassment zone is revised. NMFS indicated he would do so. However, it is unclear how many of each pile type, size, and method would be monitored by Pacific Shops and whether that number would be sufficient to revise the Level A and B harassment zones accordingly. Conducting measurements on one or two piles of a given type and size would not be sufficient, particularly for those types and sizes that have yet to be measured<sup>16</sup> or for which scant data exist<sup>17</sup>. For these reasons, the Commission recommends that NMFS (1) ensure that its internal acoustics expert reviews (a) the hydroacoustic monitoring plan before Pacific Shops implements it and (b) the hydroacoustic monitoring data and resulting Level A and B harassment zones before NMFS revises them and (2) specify in section 6(c) of the final authorizations a sufficient number of each type and size of pile and installation/removal method for which measurements would be obtained (i.e., four wide-flange steel beams installed with both impact and vibratory hammers, three 14- and three 16-in concrete piles installed with an impact hammer, five sets of sheet piles installed with a vibratory hammer, four 16-in timber piles removed with a vibratory hammer, four 12-in concrete piles removed with a vibratory hammer, etc.).

The purpose of a hydroacoustic monitoring plan is to substantiate the proposed mitigation measures to ensure that the action proponent is effecting the least practicable impact on the species or stock and to inform the numbers of animals taken to ensure NMFS has met its negligible impact and small numbers determinations. Further, hydroacoustic monitoring data add to the overall body of knowledge regarding the source levels and transmission loss coefficients that informs the acoustic analyses and necessary determinations for future authorizations. Although the MMPA may not explicitly require a hydroacoustic monitoring plan, such a plan provides necessary information similar to a marine mammal monitoring plan—which also is not explicitly required by the MMPA. As such, the Commission again recommends that NMFS require all action proponents that would be required or propose to conduct hydroacoustic monitoring to provide their proposed hydroacoustic monitoring plans prior to publication of the proposed authorization in the *Federal Register* notice.

## Location of PSOs

The Commission informally noted that it was unclear where the far-field PSO would be located. NMFS has since indicated that the far-field PSO would likely be stationed at the top of the barge at the end of Pier 5 in the existing marina. Pacific Shops indicated that the viewing platform is approximately 3.8-m above sea level and has an excellent view of the estuary channel in both directions and across to the Coast Guard Island. Although the far-field location may have a view of the estuary channel and the Coast Guard Island, it is within a few hundred meters of many of the

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<sup>13</sup> Including the appropriateness of the equipment and sampling rates, appropriate placement of the hydrophone(s) for far-field measurements, and the appropriateness of the analyses to be conducted.

<sup>14</sup> The necessary information has been omitted and the analyses have been flawed in previously submitted hydroacoustic monitoring reports.

<sup>15</sup> Dr. Shane Guan.

<sup>16</sup> i.e., wide-flange steel beams installation, 12-in concrete pile removal.

<sup>17</sup> i.e., 14- and 16-in concrete pile installation.

actual pile-driving and -removal sites (see Figures 2 through 5 in the marine mammal monitoring plan) while the Level B harassment zones during vibratory installation and removal of piles extend from 2.2 to 21.4 km<sup>18</sup> from those sites. In some instances, it would be more appropriate to have the far-field PSO positioned on the perimeter of Grand Harbor, Fortmann Marina, or Union Point Marina, along the Coast Guard Island, or at the points surrounding Encinal Basin (see Figures 2 through 5). The Commission recommends that NMFS require Pacific Shops to position its far-field PSO sufficiently in the far field and not within a few hundred meters of the pile-driving or -removal site, considering locations on the perimeter of Grand Harbor, Fortmann Marina, or Union Point Marina, along the Coast Guard Island, and at the farthest points of land surrounding Encinal Basin depending on the activity conducted. Location of the PSOs should be stipulated in the final authorizations.

### **In-water heavy machinery activities**

NMFS indicated in the *Federal Register* notice that in-water heavy machinery activities included movement of the barge to the pile location and positioning of the pile on the substrate (85 Fed. Reg. 23808). However, condition 4(a) in the draft authorizations specified that in-water heavy machinery activities included use of barge-mounted excavators or dredging as examples. The Commission has informally and formally<sup>19</sup> noted that in-water heavy machinery activities generally always include movement of a barge to the pile location and positioning of the pile on the substrate, while few activities actually involve barge-mounted excavators and dredging. As such, the Commission recommends that NMFS revise its standard condition for ceasing in-water heavy machinery activities to include, as examples, movement of the barge to the pile location, positioning of the pile on the substrate, use of barge-mounted excavators, and dredging in *all* draft and final incidental take authorizations involving pile driving and removal.

### **Tally of takes**

Although it is unclear from both the preamble and the draft authorization whether Pacific Shops will keep a running tally of the total Level B harassment takes, including observed and extrapolated takes, it is imperative that Pacific Shops do so to ensure that the takes are within the authorized limits and the authorized numbers of takes are not exceeded to implement effectively condition 4(i) in the draft authorizations. The Commission recommends that NMFS ensure that Pacific Shops keeps a running tally of the total takes, based on observed and extrapolated takes, for Level B harassment consistent with condition 4(i) of the final authorizations.

### **Proposed one-year authorization renewals**

The Commission has ongoing concerns regarding NMFS's renewal process, which can be reviewed in its [10 February 2020](#) letter. Based on those concerns, the Commission again recommends that NMFS refrain from issuing renewals for any authorization and instead use its abbreviated *Federal Register* notice process, which is similarly expeditious and fulfills NMFS's intent to maximize efficiencies. If NMFS continues to propose to issue renewals, the Commission recommends that it (1) stipulate that a renewal is a *one-time opportunity* (a) in all *Federal Register* notices

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<sup>18</sup> The zones intersect land at approximately 3.6 km to the northwest and 1.6 km in the other directions.

<sup>19</sup> See the Commission's [28 April 2020 letter](#).

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requesting comments on the possibility of a renewal, (b) on its webpage detailing the renewal process, and (c) in all draft and final authorizations that include a term and condition for a renewal and, (2) if NMFS declines to adopt this recommendation, explain fully its rationale for not doing so. The second set of recommendations has been included in numerous Commission letters since December 2019, but the recommendations have yet to be followed. Further, NMFS has not responded to those recommendations in a detailed or accurate manner, despite the directive in section 202(d) of the MMPA that NMFS provide a detailed explanation for not following any of the Commission's recommendations. This issue can be reviewed in its [28 April 2020 letter](#).

The most concerning aspect of NMFS's proposal to issue a renewal in this instance is that, if Pacific Shops is unable to complete Year 1 activities by 31 May 2021 and a renewal is necessary, the renewal authorization would overlap with the Year 2 activities that are to begin on 1 June 2021. This is the third time NMFS has proposed to issue back-to-back authorizations and the associated renewals. As noted in the Commission's [23 January 2020 letter](#) and [14 August 2019 letter](#), NMFS did not make its determinations regarding small numbers and negligible impact on the two authorizations combined, and therefore it should not issue a Year 1 renewal without issuing a coincident one-year delay for the Year 2 authorization. NMFS has previously stated that the small numbers and negligible impact determinations are made in the context of the impacts of each of the specified activities considered in *each* of the separate authorizations (85 Fed. Reg. 679). That approach is completely inappropriate for a single action proponent conducting activities in support of the same project in the same area. As such, the Commission recommends that NMFS either make its determinations regarding small numbers and negligible impact based on the total number and type of taking for each species or stock for both authorizations combined or delay the Year 2 activities until 2022 if a renewal authorization is issued for the Year 1 activities.

Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,



Peter O. Thomas, Ph.D.,  
Executive Director