



MARINE MAMMAL COMMISSION

24 July 2019

Dr. Patrick Lemons and Mr. Christopher Putnam
U.S. Fish and Wildlife Service
Office of Marine Mammals Management
1011 East Tudor Road
Anchorage, Alaska 99503

Dear Dr. Lemons and Mr. Putnam:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by the City and Borough of Sitka (CBS) and Duck Point Development II, LLC, (DPD) seeking authorizations under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA) to take small numbers of northern sea otters by harassment. The taking would be incidental to construction projects in Sitka and Hoonah, Alaska. The Commission also has reviewed the U.S. Fish and Wildlife Service's (FWS) 10 July 2019 notice (84 Fed. Reg. 32932) announcing receipt of the applications and proposing to issue the authorizations, subject to certain conditions.

CBS plans to remove and install piles during repair of the O'Connell Bridge lightering float that was damaged during a storm in June 2017. Operators would (1) remove six 16-in steel pipe piles using direct pull and/or a vibratory hammer and (2) install six 16-in steel pipe piles using a vibratory hammer, down-the-hole (DTH) hammer, and/or impact hammer. CBS's activities could occur on up to three days, weather permitting. DPD plans to remove and install piles during construction of a second cruise ship berth and a new lightering float at Cannery Point on Chichagof Island, Alaska. Operators would (1) install and remove 62 30-in temporary steel piles using a vibratory hammer and (2) install 45 24- to 42-in permanent steel piles using a vibratory hammer, impact hammer, and/or DTH hammer. DPD's activities could occur on up to 75 days, weather permitting. All pile-driving and -removal activities would be limited to daylight hours only.

FWS preliminarily has determined that, at most, the proposed activities could cause Level B harassment of small numbers of sea otters. FWS anticipates that any impact on the affected species and stocks would be negligible. FWS 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. FWS's proposed mitigation, monitoring, and reporting measures include—

- using direct pull as the primary removal method and, if ineffective, then using a vibratory hammer¹;

¹ The Commission informally noted that details regarding the proposed mitigation and monitoring measures were scant in the preamble and lacking for the most part in the proposed authorization. FWS indicated that the full scope of the various measures would be included in the final authorizations.

- using a sound attenuation device (i.e., pile caps/cushions) during impact driving of piles¹;
- ceasing pile-driving and -removal activities if any marine mammal comes within 10 m of the equipment¹;
- using two to four qualified protected species observers (PSOs)² to monitor the Level A and B harassment zones for 30 minutes before, during, and for 30 minutes after the proposed activities¹;
- using soft-start¹, delay¹, and shut-down procedures;
- refraining from approaching individual sea otters closer than 100 m and groups of 10 or more otters closer than 500 m and reducing vessel speed if an otter approaches within 100 m;
- ceasing activities and consulting with FWS, if the numbers of authorized takes are met;
- reporting all injured or dead sea otters to FWS within 48 hours³; and
- submitting a final report.

In addition, the Indigenous People's Council for Marine Mammals, the Alaska Sea Otter and Steller Sea Lion Commission, the Hoonah Indian Association, and the Sitka Tribe of Alaska were consulted. None of the organizations expressed any concerns regarding the impact of the proposed activities on sea otters for subsistence purposes. CBS and DPD would be required to avoid areas of active or anticipated subsistence hunting. Based on the proposed activities and mitigation measures, FWS has preliminarily determined that the proposed taking would not have an unmitigable adverse impact on the availability of sea otters for subsistence use by Alaska Natives.

Inconsistencies and errors in the preamble

Source levels, other acoustic parameters, and harassment zones—In its review of the preamble, the Commission observed numerous inconsistencies and errors. Those included—

- Table 1 incorrectly noted⁴ source levels for impact driving by CBS and DPD in units of peak sound pressure level (SPL_{peak}) rather than root-mean-square SPL (SPL_{rms}); SPL_{peak} source levels are much higher⁵ than those reported in Table 1.
- Table 3 incorrectly noted source levels for impact driving of 16-, 36-, and 42-in piles in units of SPL_{peak} rather than SPL_{rms}; see previous comment regarding relevant SPL_{peak} source levels.
- Table 3 incorrectly noted that the repetition rate for impact driving of 16-in piles was 30 strikes per pile rather than 30 strikes per day based on 6 piles driven with 5 strikes each.
- Table 3 incorrectly noted that the source level for socket and anchor drilling was 189.8 dB re 1 μPa at 1 m⁶ rather than the 166.2 dB re 1 μPa at 10 m as noted in Table 3 in the CBS

² CBS would use two and DPD would use three to four PSOs.

³ Activities would cease immediately if a sea otter was injured or killed during the course of conducting the activities.

⁴ Table 1 also incorrectly noted the references for the source levels for (1) impact driving and vibratory driving and removal by CBS and vibratory driving and removal for DPD as Austin et al. (2016) and Denes et al. (2016) rather than just Denes et al. (2016) and (2) impact driving by DPD as Austin et al. (2016) and Denes et al. (2016) rather than just Austin et al. (2016).

⁵ For example, the SPL_{peak} source level for impact driving by CBS is 193.3 rather than 181.3 dB re 1 μPa based on Denes et al. (2016).

⁶ The Commission was not able to locate the source level that FWS specified in Table 3. It is not based on the mean or median source levels or those source levels backcalculated to 1 m based on either 15 log R or 18.9 log R based on *in-situ*

application and Table 4 in the DPD application based on Denes et al. (2016). Table 3 also incorrectly noted that socket and anchor drilling would occur for only 4 hours rather than up to 8 hours per day as stated in the DPD application (Table 2 and Appendix B). Thus, the extents of the Level A and B harassment zones in Table 4 differ from those estimated in the respective applications⁷.

- Table 3 incorrectly noted that the source level for vibratory driving of 42-in piles was 161.9 rather than 168.2 dB re 1 μ Pa at 10 m.
- Table 3 indicated that the source velocities for the various types of skiffs were 1.54 m/s rather than 5.14 m/s as noted elsewhere in the preamble, 10 knots is specified on 84 Fed. Reg. 32939.
- Table 4 specified the extents of the Level A harassment zones for the various skiffs to be 0.6 to 1.5 m, while the numerous inputs yielded ranges of 0 m⁸.

The Commission has expressed concern over errors, inconsistencies, and ambiguities in recent FWS *Federal Register* notices. The Commission and the public rely on the accuracy of the proposed authorizations in formulating comments and recommendations. Failure to identify inaccuracies and inconsistent information undermines the adequacy and meaningfulness of the public review process. Therefore, the Commission recommends that FWS address and correct all of the aforementioned issues in the final authorizations and more thoroughly review draft notices prior to submitting them to the *Federal Register* for public comment.

Appropriateness of the Level B harassment threshold

Non-impulsive, continuous sources—As with numerous other proposed authorizations, FWS used the 160- rather than 120-dB re 1 μ Pa threshold for non-impulsive, continuous sources⁹ to estimate the extent of the Level B harassment zone and the number of takes during vibratory pile driving and removal, socket and anchor drilling, and vessel use. This approach differs from the USCG authorization for its 2015 activities (79 Fed. Reg. 58798) and other authorizations issued for activities that had the potential to harass southern sea otters (82 Fed. Reg. 6631). In those instances, FWS used the 120-dB re 1 μ Pa threshold for activities involving vibratory pile driving.

The Commission continues to question¹⁰ FWS's assumption that disruption of behavioral patterns occurs only at levels that *exceed* 160 dB re 1 μ Pa. In this particular *Federal Register* notice, FWS indicated that the 160- and 120-dB re 1 μ Pa thresholds were developed from observations of mysticetes responding to airgun operations and from equating Level B harassment with noise levels capable of causing temporary threshold shift (TTS) in lab settings (84 Fed. Reg. 32936). That is in fact not the case. The 160-dB re 1 μ Pa threshold was informed by observations of migrating gray

conditions as reported in Tables 72 and 74 Denes et al. (2016). FWS's source level is higher by 3 to nearly 5 dB than those reported in Denes et al. (2016).

⁷ The Level A harassment zone would be 2.1 m rather than 8.0 m for CBS's activities and 2.6 m rather than 9.7 m for DPD's activities, and the Level B harassment zone would be 32.6 rather than 97.0 m for both CBS's and DPD's activities (see Appendices B in the applications).

⁸ Using both the correct and incorrectly specified information.

⁹ FWS indicated that it used the National Marine Fisheries Service's (NMFS) Level A harassment thresholds based on permanent threshold shift (PTS) for *non-impulsive, continuous* sources. Thus, the appropriate Level A harassment thresholds were used.

¹⁰ See the Commission's [18 April 2019 letter](#), [1 May 2018 letter](#) and [13 June 2017 letter](#) detailing this issue.

whales responding to playbacks of seismic airguns in California (Malme et al. 1983, 1984) and of migrating bowhead whales responding to seismic sources in the Beaufort Sea (Richardson et al. 1985, 1986). However, the 120-dB re 1 μ Pa threshold was based on gray whale (Malme et al. 1984, 1988) and bowhead whale (Richardson et al. 1990) responses to playbacks of drillship sounds in Alaska and a 50-percent response rate of those whales at 120 dB re 1 μ Pa. Neither threshold was based on TTS studies, nor are behavioral responses the same as TTS, which is a physiological response.

FWS further stated that the 160-dB re 1 μ Pa threshold provided a measure of assurance against underestimation of the possible risks to otters as compared to the weighted TTS threshold of 199 dB re 1 μ Pa²-sec (84 Fed. Reg. 32936). That supposition also is incorrect. The range to TTS would be 172.4 m¹¹ during CBS's use of the DTH hammer, which is nearly double that of the Level B harassment zone of 97 m for behavior¹². The same trend is evident for DPD's use of the DTH hammer¹³. That is, otters would be experiencing physiological effects at ranges greater than where they would be behaviorally responding to or avoiding the sound source. TTS and behavioral response are considered two different types of Level B harassment and should not be used interchangeably, as TTS is generally a more severe, detrimental effect occurring closer to the sound source.

In addition, FWS indicated that the 160-dB re 1 μ Pa threshold provides greater practicability for application of mitigation and monitoring measures (84 Fed. Reg. 32936). The Commission asserts that the appropriateness of a given threshold should not be based on practicability of mitigation and monitoring measures. Thresholds should be sufficiently precautionary to estimate *impacts* on marine mammals in an accurate manner. How best to minimize impacts should be a secondary consideration and should not be the impetus for setting a given threshold. Furthermore, NMFS will be requiring both CBS and DPD to monitor the extents of the Level B harassment zones out to the 120-dB re 1 μ Pa threshold¹⁴ for all other marine mammals. Thus, it is practicable for operators to implement mitigation and monitoring measures out to the 120-dB re 1 μ Pa threshold.

FWS further indicated that southern sea otters appeared to be relatively undisturbed by pile-driving activities in an area near a railroad¹⁵, with many showing no response (84 Fed. Reg. 32936). The Commission disagrees. During vibratory installation of sheet piles, 55 percent of the observed sea otters traveled away from the area or exhibited a startle dive in response to received levels less than 160 dB re 1 μ Pa (Table 8 in ESNERR 2011). Similarly, 50 percent of the observed sea otters¹⁶ traveled away from the area or exhibited a startle dive in response to received levels ranging from 141–144 dB re 1 μ Pa during vibratory installation of H-piles, and 33 percent of the observed sea otters traveled away from the area at received levels less than 135 dB re 1 μ Pa (Table 7 in ESNERR

¹¹ Based on FWS's source level of 189.8 dB re 1 μ Pa at 1 m, a weighting factor adjustment of 2.5 kHz, and the estimated 6 hours of use per day.

¹² The Level B harassment zone based on the 120-dB re 1 μ Pa threshold extends to 5.5 km for vibratory pile driving and removal and intersects land at 7.7 km for socket and anchor drilling (see Table 2 and Figure 2 in CBS's application).

¹³ The range to TTS is 131.6 m and the range to behavior based on the 120-dB re 1 μ Pa threshold extends to 12 km for socket drilling.

¹⁴ Which includes use of both land- and vessel-based observers.

¹⁵ Elkhorn Slough National Estuarine Research Reserve (ESNERR, 2011).

¹⁶ At 30–60 m from the source.

2011)¹⁷. Thus, the majority of otters in fact showed a behavioral response. ESNERR (2011) additionally indicated that the decreased abundance inside Parsons Slough ($p=0.08$) resulted from female-pup pairs and other individuals remaining in Yampah Marsh and avoiding passing through the construction zone to get to upstream areas of Parsons Slough. The pattern is quite clear that sea otters are disturbed by or avoid vibratory pile-driving activities at received levels well below 160 dB re 1 μ Pa. The Commission further notes that these observed responses would equate to a behavioral severity score of 6 or more (based on Southall et al. 2007)—which has a greater potential to affect sea otter foraging, reproduction, or survival—and should be adequate for FWS to derive its own thresholds¹⁸. More importantly, the observed behavioral responses and decreased abundance are some of the same responses that FWS indicated disrupt biologically significant behaviors and are considered Level B harassment (see 84 Fed. Reg. 32937-8).

Rather than incorporate data specific to sea otters, FWS relied on data from Southall et al. (2007)¹⁹. FWS indicated that avoidance and other behavioral effects were observed between 120–160 dB re 1 μ Pa, with only one of the observed reactions reported in Southall et al. (2007) sufficiently severe to meet FWS's behavioral criteria. Southall et al. (2007) included only three studies of pinniped reactions to non-impulsive sound (Tables 20 and 21). The study that equated to a 6 or more on the severity scale involved received levels of 100–110 dB re 1 μ Pa. Since that time, additional studies have been conducted on behavioral responses, including those in support of monitoring efforts such as ESNERR (2011).

All of these issues again highlight that FWS's use of the 160-dB re 1 μ Pa threshold is inappropriate and gives the appearance of an attempt to reduce the extents of the Level B harassment zones and the numbers of Level B harassment takes. Until such time that the 120- and 160-dB re 1 μ Pa thresholds are updated or FWS develops its own thresholds, the Commission recommends that FWS use the 120- rather than 160-dB re 1 μ Pa threshold to estimate the extents of the Level B harassment zones and numbers of sea otter takes when non-impulsive, continuous sources are proposed for use (including vibratory pile driving and removal, socket and anchor drilling, etc.). If FWS chooses yet again not to implement the Commission's recommendation, the Commission further recommends that FWS use 141 dB re 1 μ Pa as the Level B harassment threshold for non-impulsive, continuous sources based on monitoring data from ESNERR (2011).

Interagency consultation—The Commission previously has suggested and recently recommended that FWS consult with NMFS regarding the appropriateness of the various thresholds. FWS has yet to follow through on this. The lack of consultation leads to unnecessary confusion for the Commission and the public as they review proposed actions and for action proponents who must deal with differing FWS and NMFS approaches for implementing the same thresholds. Further, FWS has not provided informal or formal comments during any of the four public review comment periods for

¹⁷ Although sea otter responses were noted, ESNERR (2011) further indicated that it is quite possible that the animals in the Yampah Marsh area are accustomed to mechanical sounds, considering that the area abuts a wrecking yard and is bisected by an active railroad track. Thus, sea otters that are not routinely exposed to 'mechanical' sounds would likely exhibit responses at lower received levels, which would be the case off Sitka and Hoonah.

¹⁸ Some of the current thresholds are based on lesser amounts of data. Based on these data alone, the Level B harassment threshold for non-impulsive sources could be set at 141 dB re 1 μ Pa.

¹⁹ And data from NMFS (2018) and Southall et al. (2019)—both of which involve PTS and TTS thresholds not behavior thresholds.

NMFS's PTS thresholds since 2013²⁰ and did not participate with the 11 other federal agencies²¹ during NMFS's 2017 interagency consultation regarding its final PTS thresholds. Given that FWS is one of only two regulatory agencies responsible for authorizing the incidental taking of marine mammals based on the various thresholds, the Commission again recommends that FWS take a more active role in the development, review, and implementation of any and all acoustic and behavior thresholds for marine mammal species under its jurisdiction and consult with NMFS on whether, when, and how NMFS's current thresholds should be implemented.

Appropriateness of the Level B harassment takes

In addition to the shortcomings associated with FWS's use of an incorrect threshold for behavioral disturbance, the manner in which it estimated Level B harassment takes is flawed. First, FWS estimated the number of sea otter takes based on the ensonified areas, applicable densities, and number of days of activities—a method that neither CBS nor DPD used. For DPD, FWS based the ensonified areas for impact installation of 36- and 42-in piles on $\frac{1}{2}\pi r^2$. For socket drilling during CBS's activities, FWS indicated that it based the ensonified area on πr^2 . CBS's application denotes that the ensonified area for drilling should have been based on $\frac{1}{2}\pi r^2$ as well (Figure 4 Appendix C). Using FWS's original method, the number of Level B harassment takes of otters should have been 0.050 rather than 0.000 as stated in Table 5 of the *Federal Register* notice. Although FWS correctly recognized that estimating takes based on an area x density method underestimated the number of takes for both CBS and DPD, inclusion of that method added unnecessary confusion and information to an already complex preamble fraught with inconsistencies, errors, and missing information.

FWS's second method used local knowledge to estimate the number of sea otter takes for CBS and DPD—similar to the methods used in both applications. However for DPD, FWS then incorporated additional takes for the monitoring skiff²² based on two otters being taken during each of the 75 days of activities. This is the first time FWS has ever proposed to regulate taking by skiffs or vessels in general. Specifically, FWS previously acknowledged that various support and mitigation vessels would be used in Cook Inlet during oil- and gas-related activities (Table 2; 84 Fed. Reg. 10227) but did not include taking of sea otters based on use of those vessels (Table 7; 84 Fed. Reg. 10239). FWS indicated that only those activities involving vessel operations that are likely to be substantially louder²³ than normal transit were included in its take estimates (84 Fed. Reg. 10231).

More importantly, FWS would already require both CBS and DPD to refrain from approaching individual sea otters closer than 100 m and a group of 10 or more otters closer than 500 m²⁴. Given that FWS's 'estimated' zone to Level B harassment for the monitoring skiff was 10 m, it is unclear why it then determined that up to two otters would be harassed each day during

²⁰ Six federal agencies provided formal written comments on the proposed thresholds.

²¹ Including NMFS, the Commission, Bureau of Ocean Energy Management, Department of State, Federal Highway Administration, National Park Service, National Science Foundation, U.S. Air Force, U.S. Army Corps of Engineers, U.S. Geological Survey, and U.S. Navy.

²² That would implement monitoring measures required by NMFS. Neither CBS nor DPD requested taking by vessels in their applications.

²³ Including anchor handling and tug towing—activities that the Commission was not convinced rose to the level of harassment in its 18 April 2019 letter.

²⁴ And reducing vessel speed if an otter actively approaches a vessel within 100 m.

DPD's activities. As such, the Commission recommends that FWS authorize 1,230 Level B harassment takes of sea otters subsequent to DPD's proposed pile-driving, pile-removal, and drilling activities rather than 1,380 Level B harassment takes that include general vessel use.

Mitigation and monitoring measures

Mitigation and monitoring measures in general—As the Commission informally noted, details regarding the proposed mitigation and monitoring measures were scant in the preamble (84 Fed. Reg. 32937) and lacking in general in the proposed authorization (84 Fed. Reg. 32943), making it difficult to know which measures FWS proposed to require both CBS and DPD to implement. All FWS proposed incidental harassment authorizations (83 Fed. Reg. 18341 and 18081, 82 Fed. Reg. 6631, 81 Fed. Reg. 40911 and 29902, 79 Fed. Reg. 58799, 77 Fed. Reg. 59216, 76 Fed. Reg. 18235) and proposed rules (84 Fed. Reg. 10248, 81 Fed. Reg. 36699, 78 Fed. Reg. 1985, 76 Fed. Reg. 13490) in at least the last eight years have included detailed mitigation and monitoring measures in the preamble and/or proposed authorization/rule. Although FWS informally confirmed that the various measures described herein would be included in the final authorizations, the public has not been made aware of which measures FWS would require CBS and DPD to implement. That information is essential for the public to assess whether the applicants would be effecting the least practicable impact on the species or stocks as required under section 101(a)(5)(D)(ii)(I) of the MMPA. As such, the Commission recommends that FWS include in its *Federal Register* notices details regarding all mitigation and monitoring measures that each applicant would be required to implement for all future proposed incidental harassment authorizations and proposed rules.

Reporting of injured, dead, or distressed sea otters—FWS has proposed that operators notify FWS within 48 hours of an injured, dead, or distressed sea otter being observed, irrespective of whether an injury or death was associated with proposed activities (section E.4 of the proposed authorization). Any injury or death of a sea otter associated with the proposed activities should be reported immediately to FWS. In the past, FWS has specified that notification of injured or dead otters not associated with project activities occur within 24 hours to allow for a more timely response by trained personnel as warranted. FWS also has specified that the operators notify Alaska Sea Life Center, the stranding network responder, in addition to FWS. Accordingly, the Commission recommends that FWS require CBS and DPD to notify FWS *and* the Alaska Sea Life Center (1) immediately if a sea otter is injured or killed during any of the proposed activities and (2) within 24 hours of observing an injured, dead, or distressed sea otter that the observer determined is not associated with project activities.

General inefficiencies

The preamble indicated that CBS and DPD intended to begin their activities on 1 April 2019²⁵. However, due to the time needed to process the request, FWS indicated that it evaluated the incidental taking of sea otters during activities that could occur beginning on 22 June (84 Fed. Reg. 32932). Given that the comment period for the proposed incidental harassment authorizations does not close until 9 August, the Commission informally inquired whether FWS would issue the

²⁵ Both of the proposed authorizations processed and issued by NMFS indicated that the start date was the first week of June.

authorizations before the close of the comment period. FWS indicated²⁶ that it does not issue authorizations before the public comment period concludes and comments are incorporated into the final authorization. In this case, FWS indicated that CBS withdrew its application at a stage of the process where it was easier and faster to publish both proposed authorizations in the *Federal Register* rather than recall and revise the notice. FWS further indicated that it will continue to process the DPD authorization after the public comment period closes but that the project likely will be finished before the authorization is issued. FWS reminded the Commission that applicants can begin the activities when they wish (in accordance with other project permit requirements) and accept the risk of unauthorized takes under the MMPA.

The Commission takes issue with the manner in which FWS has handled these matters. First and foremost, CBS submitted its application to FWS on 12 November 2018 and its amended application on 21 March 2019. DPD submitted its application on 30 January 2019 and its amended application on 21 March 2019. CBS, in particular, submitted its application well in advance of the start date such that FWS should have had ample time to review and process the application and issue the final authorization²⁷. Second, if in fact CBS withdrew its application, FWS should have made the public aware via a supplemental notice in the *Federal Register* that the application was withdrawn, similar to the comment period extension it had issued shortly after a proposed rule published earlier this year (84 Fed. Reg. 13603). The Commission understands from correspondence with NMFS that CBS had completed its activities by 12 June 2019. Thus, FWS had sufficient time to draft and submit a notice to the *Federal Register* indicating that CBS had withdrawn its application and FWS was not processing it further. Moreover, FWS should have proactively informed the Commission of this issue given its knowledge that the Commission comments on every incidental harassment authorization and rule that FWS proposes to issue.

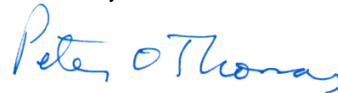
This is not the first time that applicants have submitted their applications in a timely manner, and FWS has been unable to issue the final authorizations before the applicants are set to begin their activities (see the Commission [30 June 2016 letter](#) regarding this matter). FWS's failure to publish the proposed authorizations in a more timely manner made the applicants assume the risk of liability for any take that might result from their activities, putting both CBS and DPD in untenable positions. Therefore, the Commission recommends that, in the future, FWS (1) take all necessary steps to ensure that it publishes and finalizes proposed incidental take authorizations before the planned start date of the proposed activities and (2) publish any necessary correction to a proposed authorization, including applications that are withdrawn, in the *Federal Register* in a timely manner. If FWS is unable to adhere to the statutory time frames for processing incidental take authorizations on a routine basis, the Commission contends that additional resources or systematic changes to the office(s) handling those authorizations are needed.

²⁶ FWS responded to the Commission's informal questions after the vast majority of this letter had been drafted. The Commission believes its comments and recommendations are applicable irrespective of whether the authorizations are issued and should inform future authorizations. As such, it expects that FWS will respond to the Commission's comments and recommendations as statutorily mandated under the MMPA.

²⁷ NMFS issued both final authorizations effective the first week of June.

The Commission hopes you find its letter useful. Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,



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

cc: Charlie Hamilton, FWS Office of Marine Mammals Management
Diane Bowen, FWS Ecological Service Program
Amy Scholik-Schlomer and Jolie Harrison, NMFS Office of Protected Resources

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