



# MARINE MAMMAL COMMISSION

4 May 2015

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

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the U.S. Navy's application seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA) to take marine mammals by harassment. The taking would be incidental to pile driving and removal in association with a wharf construction project at the explosive handling wharf-1 (EHW-1) in Hood Canal at Naval Base Kitsap in Bangor, Washington. The authorization would be in effect from 16 July 2015 to 15 January 2016. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 22 April 2015 notice (80 Fed. Reg. 22477) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions. The Commission has commented on previous incidental harassment authorizations for pile driving and removal at Naval Base Kitsap—it commented on EHW-1 activities most recently in 2012.

## Background

The Navy plans to remove unsound piles and install new piles during maintenance of EHW-1 at Naval Base Kitsap. During the project, the Navy would remove four 24-in hollow concrete piles using a pneumatic hammer and crane. The Navy also would install four 30-in concrete-filled steel pipe piles using a vibratory and impact hammer. It expects the activities to occur on up to eight days and would limit the activities to daylight hours only.

NMFS preliminarily has determined that, at most, the proposed activities would temporarily modify the behavior of small numbers of harbor seals, California sea lions, Steller sea lions, harbor porpoises, and transient killer whales. It also anticipates that any impact on the affected species and stocks would be negligible. NMFS does not anticipate any take of marine mammals by death or serious injury and believes that the potential for temporary or permanent hearing impairment would be at the least practicable level because of the proposed mitigation measures. The mitigation, monitoring, and reporting measures include—

- installing piles using a vibratory hammer during the period between sunrise and sunset;

- installing piles using an impact hammer during the period between two hours after sunrise to two hours before sunset from 16 July through 15 September<sup>1</sup> and between sunrise and sunset from 16 September through 15 February;
- using an underwater sound attenuation device (e.g., bubble curtain or other sound attenuation device) for impact pile driving and conducting a performance test prior to its use;
- using soft-start, delay, and shut-down procedures;
- using qualified protected species observers to monitor the harassment zones for 15 minutes before, during, and for 30 minutes after pile driving;
- ceasing other heavy machinery work (i.e., activities other than pile driving including pile removal) if any marine mammal comes within 10 m of the vessel or equipment—this measure includes monitoring 15 minutes before and during those activities;
- reporting any pinniped hauled out at unusual sites (e.g., in work boats) immediately to the local stranding network, and as soon as time allows to NMFS, and following any procedures or measures stipulated by the stranding network;
- reporting injured and dead marine mammals to the regional stranding network and NMFS using NMFS's phased reporting approach and suspending activities, if appropriate; and
- submitting draft and final monitoring reports to NMFS.

### **Harbor seal density estimates**

Since 2011, the Commission has been making recommendations regarding the manner in which the Navy has estimated its harbor seal densities. Specifically, the Commission does not support the Navy's procedure of reducing the overall density based on the percentage of animals expected to be hauled out at any given instant. That reduction is only valid when models or methods to estimate takes incorporate a time element and animat simulation, similar to the Navy's methods for its environmental impact statements (EISs) for training and testing activities in support of military readiness. However, for construction activities at Naval Base Kitsap, the Navy uses a simple area x density method to estimate the number of seals taken on any given day—a method that does not include an instantaneous time element.

For the proposed incidental harassment authorization, the Navy updated the haul-out correction factor that it had used in previous incidental harassment authorization applications from 1.53<sup>2</sup> to 5.0<sup>3</sup> based on London et al. (2012). The updated correction factor was used with the Jefferies et al. (2003) survey data<sup>4</sup> from 1999 to yield an abundance of 3,555 harbor seals in Hood Canal. The Commission believes those data are currently the best available and supports the Navy's incorporation of updated information. But rather than dividing the calculated abundance by the area of Hood Canal<sup>5</sup> to yield 9.92 seals/km<sup>2</sup>, the Navy again assumed that only a portion of the seals

---

<sup>1</sup> Primarily to protect breeding marbled murrelets.

<sup>2</sup> Based on Huber et al. (2001).

<sup>3</sup> Haul-out correction factors are based on the reciprocal of the proportion of seals hauled out. 65 and 20 percent of the seals would be hauled out at a given time to yield correction factors of 1.53 and 5.0, respectively.

<sup>4</sup> 711 harbor seals.

<sup>5</sup> The Navy used an area of 358 km<sup>2</sup>.

would be present in the water at any one time—in this instance 80 percent were assumed to be in the water at a given time, which ultimately reduced the density to 7.93 seals/km<sup>2</sup>.

NMFS acknowledged in the *Federal Register* notice that during the course of the day, while the proportion of animals in the water may not vary significantly, different individuals may enter and exit the water (i.e., it is probable that more than 80 percent of seals will enter the water at some point during the day). NMFS further indicated that an instantaneous estimate of animals in the water at a given time may not produce an accurate assessment of the number of individuals that enter the water during the daily duration of the activity (which, based on past activities, can last up to 7 hours). NMFS believes that no data exist regarding fine-scale harbor seal movements within the project area on time durations of less than a day, thus precluding an assessment of ingress or egress of different animals through the project area. The Commission notes that unpublished data related to London et al. (2012) may provide such fine-scale movements and only stratified density estimates and animat modeling would yield more fine-scale estimates of takes. However, those data are not appropriate for use when a simple area x density method is used to estimate takes. Until those data are available and those methods used, NMFS and the Navy should not be reducing the harbor seal density estimate by the proportion on land at any given instant

NMFS believes the corrected density more closely approximates the number of seals that may be present in the project area than does the uncorrected density. The Commission does not agree. For example, by using the lesser density of 7.93 seals/km<sup>2</sup>, the Navy estimated that 7.2 percent of the estimated population of harbor seals could be exposed on any given day to the proposed EHW-1 activities. If the total ensonified area for EHW-1 activities equates to approximately 41 km<sup>2</sup> and the total area of Hood Canal based on the Navy's estimate is 358 km<sup>2</sup>, then approximately 11 percent of the Canal would be ensonified. Using a simple area x density method, and assuming, as NMFS does, that the density is uniform, the number of seals that have the potential to be taken was clearly underestimated.

In addition, NMFS believes that the lesser density estimate is more appropriate based on results from the Navy's monitoring reports from previous years, which indicated the total estimate of actual incidents of takes (observed takes and observations extrapolated to unobserved area) has been substantially less than the estimated numbers of takes. Unlike NMFS, the Commission is not convinced that the Navy has estimated the numbers of harbor seals taken accurately. The Navy has solely monitored the near-field (out to 464 m from the activities) in recent years and monitored the far-field only in 2012. It is not scientifically sound to extrapolate takes to an area of more than 40 km<sup>2</sup> on the basis of estimates of seals taken within 464 m of the site. NMFS acknowledged that the Navy's take estimates are almost certainly negatively biased, but finds that the disparity between the numbers to be authorized and the numbers taken in past years provides confirmation that the Navy is not significantly underestimating takes. If the estimates are negatively biased, it is unclear how such a disparity can serve as justification that the authorized numbers of takes have been sufficient.

Further, NMFS stated that harbor seal densities would be greater around haul-out sites (e.g., Dabob Bay and farther south in Hood Canal, which are 16 km away from Bangor<sup>6</sup>). Irrespective of

---

<sup>6</sup> Based on the size of the ensonified areas, those haul-out sites are not far from Bangor and harbor seals are known to forage and swim 10s of kilometers from their haul-out sites.

the proximity of dedicated haul-out sites, seals have been observed in large numbers over the years in the project area (Tannenbaum et al. 2009, Tannenbaum et al. 2011, HDR 2012a, HDR 2012b, Department of the Navy 2014), and any seals observed swimming in the area, foraging or not—would be exposed to the proposed activities. Seals haul out on the floating security fence, floating booms/floats, wave screen, ladders, overwater structures under the piers, and workboats within the immediate project area, and they also pup from the northern to southern end of the waterfront—information corroborated by the Navy. For all of these reasons and until such time that the Navy incorporates stratified densities and uses animat modeling, the Commission recommends that the Navy use the relevant ensonified areas associated with EHW-1 activities and the unadjusted harbor seal density estimate of 9.92 rather than 7.93 seals/km<sup>2</sup> to estimate the number of seals that could be taken during those activities—that unadjusted harbor seal density estimate should be used to estimate takes for all Navy activities occurring in Bangor.

### **Mitigation and monitoring measures**

Monitoring and reporting requirements adopted under section 101(a)(5) of the MMPA need to be sufficient to provide a reasonably accurate assessment of the manner of taking and the numbers of animals taken<sup>7</sup> incidental to the specified activity. Thus, the Navy's monitoring strategy should be sufficient to determine accurately the numbers of animals taken during the activities and to observe and document any changes in marine mammal behavior as a function of distance from the activities. The Commission understands that two observers would be monitoring the Level A harassment zones and one observer would monitor the Level B harassment zones<sup>8</sup>. However, the Navy indicated in its monitoring plan that visibility is limited within the Level B harassment zones by the port security barrier<sup>9</sup> (PSB), EHW-1 and its overwater building, and EHW-2. Based on Figure 2-1 in the monitoring plan, it appears approximately 0.16 km<sup>2</sup> would be monitored of the 41.6-km<sup>2</sup> Level B harassment zone for vibratory pile driving. The Navy did indicate that the observer for the Level B harassment zones would report, when possible, any marine mammals he/she is able to see outside the PSB monitoring area. While, the Commission understands that the total ensonified area is large, it does not believe that the Navy is conducting due diligence by monitoring less than 1 percent of that area and finds the proposed monitoring completely insufficient for fulfilling the requirements under the MMPA.

This insufficiency is particularly apparent for harbor porpoises. The Navy indicated that no harbor porpoises were observed during 2013–14 activities (EHW-2 year 2)<sup>10</sup>. This was not because harbor porpoises were not present, but because no boat was deployed in the main channel of Hood Canal to conduct surveys beyond the waterfront restricted area (Department of the Navy 2014). The Navy contractors had recommended in the draft monitoring report that marine mammal observers be placed outside the waterfront restricted area to observe harbor porpoise and other cetacean baseline behaviors and any changes in those behaviors during the proposed activities. The

---

<sup>7</sup> And presumably the total number of takes for each species or stock.

<sup>8</sup> Which are 631 m for impact pile driving and 11.7 km for vibratory pile driving. The Navy and NMFS incorrectly stated that the radius for vibratory pile driving was 6.3 km rather than 11.7 km. Thus, the 32.4-km<sup>2</sup> area was underestimated as well. NMFS indicated the adjusted area would be 41.6 km<sup>2</sup>, and takes for harbor seals and harbor porpoises also would be adjusted accordingly.

<sup>9</sup> 400 m to the north, north east, and west of the project site.

<sup>10</sup> Harbor porpoises had been observed during previous monitoring efforts at Naval Base Kitsap.

Commission made a similar recommendation to include additional shore-, platform-, and vessel-based observers beyond the waterfront restricted area for EHW-2 activities in year 3 (2014–15). However, NMFS indicated that based on security concerns, vantage points, and cost, the five shore sites considered to expand the monitoring coverage would not offer appreciable improvements to the existing monitoring plan (79 Fed. Reg. 43432). NMFS does not appear to have considered the use of a vessel, which is the best platform for monitoring such a large area. A vessel was used by the Navy for monitoring activities at Bangor in 2012. NMFS has required the Navy (at Pt. Loma) and other action proponents to use vessel-based monitoring for similar activities (80 Fed. Reg. 14945, 80 Fed. Reg. 11648, 79 Fed. Reg. 78821, 79 Fed. Reg. 65378). The Navy should be held to the same standard at Bangor.

The Commission believes that the addition of observers beyond the immediate project area is necessary for estimating the numbers of marine mammals taken and the total numbers of takes during the proposed activities and it is essential for estimating the taking of harbor porpoises that avoid the immediate project area but occur within the larger Level B harassment zone for vibratory pile driving. Due to the Commission's continued concerns regarding the Navy's monitoring strategy, the Marine Mammal Commission recommends that NMFS require the Navy to use vessel-based observers to monitor the full extent of the Level B harassment zones, including areas beyond the PSB and waterfront restricted area, for impact and vibratory pile driving and pile removal to (1) determine the numbers of marine mammals taken and total number of takes during those activities and (2) characterize the effects on those mammals, including cetaceans.

Because the Navy only estimated the numbers of marine mammal takes, namely for pinnipeds, within 1.6 percent of the Level B harassment zone in its 2013–14 monitoring report, it extrapolated its takes for the remaining 98.4 percent of the zone. For example, the Navy estimated that it had incurred up to 7,040 harbor seal takes during 133 days of vibratory pile driving based on its density estimate and ensonified area for the remaining 98.4 percent of the zone. However, when extrapolating the actual number of observed harbor seal takes (365) to the extent of the harassment zone (which is a method action proponents generally use to estimate the total number of takes), more than 22,000 takes of harbor seals<sup>11</sup> could have occurred. The Commission does not assert that 22,000 harbor seal takes were realized, but it does believe that extrapolating takes based on the adjusted density estimate for more than 98 percent of the area could produce a significant underestimate of actual numbers of takes. In the case of killer whales, estimating the numbers of takes based on a density estimate rather than on actual sightings likely produced an overestimate of the number of takes. If killer whales had been present in Hood Canal or near Naval Base Kitsap, the Navy and the public likely would have been aware of it.

These issues further support the Commission's view that the Navy should use vessel-based observers to estimate more accurately the numbers of marine mammals taken and the total numbers of takes during the proposed activities. If the Navy uses an extrapolation method to estimate the numbers of animals taken and the total numbers of takes for the upcoming incidental harassment authorization, it should be basing that calculation on the numbers of marine mammals observed beyond the PSB and waterfront restricted area. The Commission recommended for EHW-2

---

<sup>11</sup> Based on 365 harbor seals takes within 1.6 percent of the Level B harassment zone for vibratory pile driving—those 365 takes could represent the number of individuals or number of instances an individual was taken.

activities in 2014–15 that NMFS require the Navy to use better methods to estimate the numbers of marine mammals taken and indicated it would be willing to work with NMFS on that matter. Although NMFS accepted the Commission's offer and indicated it would discuss the matter with the Commission<sup>12</sup>, those discussions have yet to occur. Therefore, the Commission again recommends that NMFS require the Navy to use better methods to estimate the numbers of marine mammals taken and the total numbers of takes during EHW-1 activities rather than the extrapolation method recently used for EHW-2 activities. The Commission would welcome the opportunity to work with NMFS on this matter but considers it doubtful that improvements can be made unless and until the Navy conducts monitoring beyond the PSB and waterfront restricted area.

The Commission hopes you find its letter useful. Please feel free to contact me should you have questions regarding the Commission's recommendations and comments.

Sincerely,



Rebecca J. Lent, Ph.D.  
Executive Director

## References

- Department of the Navy. 2014. Naval Base Kitsap at Bangor Explosive Handling Wharf 2, Bangor Washington: Draft year 2 marine mammal monitoring report. Prepared by Hart Crowser, Inc., for Naval Facilities Engineering Northwest, Silverdale, Washington. 50 pages.
- HDR. 2012a. Naval Base Kitsap at Bangor EHW-1 pile replacement project: Final marine mammal monitoring report. Prepared by HDR, Inc., for Naval Facilities Engineering Command Northwest, Silverdale, Washington. 142 pages.
- HDR. 2012b. Naval Base Kitsap at Bangor test pile program: final marine mammal monitoring report. Prepared by HDR, Inc., for Naval Facilities Engineering Northwest, Silverdale, Washington. 230 pages.
- Huber, H. R., S.J. Jeffries, R.F. Brown, R.L. DeLong, and G. VanBlaricom. 2001. Correcting aerial survey counts of harbor seals (*Phoca vitulina richardsi*) in Washington and Oregon. *Marine Mammal Science* 17:276–293.
- Jeffries, S., H. Huber, J. Calambokidis, and J. Laake. 2003. Trends and status of harbor seals in Washington State: 1978-1999. *The Journal of Wildlife Management* 67: 208–219.
- London, J.M., J.M. Ver Hoef, S.J. Jeffries, M.M. Lance, and P.L. Boveng. 2012. Haul-out behavior of harbor seals (*Phoca vitulina*) in Hood Canal, Washington. *PLoS ONE* 7(6): e38180. doi:10.1371/journal.pone.0038180.

---

<sup>12</sup> 79 Fed.Reg. 43432.

Ms. Jolie Harrison  
4 May 2015  
Page 7

Tannenbaum, B.R., M. Bhuthimethee, L. Delwiche, G. Vadera, and J.M. Wallin. 2009. Naval Base Kitsap, Bangor 2008 Marine Mammal Survey Report. Prepared by Science Applications International Corporation for BAE Systems Applied Technologies, Inc., Rockville, Maryland. 28 pages.

Tannenbaum, B.R., W. Hafner, J. Wallin, L. Delwiche, and G. Vadera. 2011. Naval Base Kitsap, Bangor 2009–2010 Marine Mammal Survey Report. Prepared by Science Applications International Corporation for Naval Facilities Engineering Northwest, Silverdale, Washington. 38 pages.