



# MARINE MAMMAL COMMISSION

23 February 2015

Naval Facilities Engineering Command Northwest  
Attention: Mr. Thomas Dildine, LWI/SPE EIS Project Manager  
1101 Tautog Circle, Suite 203  
Silverdale, WA 98315-1101

Dear Mr. Dildine:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the U.S. Navy's (the Navy) Draft Environmental Impact Statement (DEIS) for construction and operation of land-water interface structures (LWI) and a service pier extension (SPE) at Naval Base Kitsap in Bangor, Washington (80 Fed. Reg. 8076). The Commission has commented on activities involving pile driving and removal at Naval Base Kitsap since 2011 (see its most recent 23 June 2014 letter).

## **Background**

The Navy plans to install steel and concrete piles and concrete abutments and remove timber piles and temporary (or false work) piles during construction of the LWI structures and SPE. The LWI structures would connect the existing on-water port security barrier system to the existing on-land waterfront security enclave to complete the perimeter of the waterfront restricted area. SPE activities would include extension of the pier and construction of support facilities to accommodate the transfer of two SEAWOLF Class submarines from the Naval Base Kitsap installation in Bremerton to Bangor. Construction activities could occur for up to two years. It is unclear from the DEIS if the Navy included removal of the temporary piles by vibratory hammer in its take estimations. Inclusion of those activities likely would increase the number of in-water construction days and the total number of takes. Therefore, the Commission recommends that the Navy clarify if removal of the temporary piles using a vibratory hammer was included in its take estimates and if not, re-estimate the total number of takes based on inclusion of temporary pile removal in addition to the takes estimated from pile-driving activities.

## **Harbor seal density estimates**

The Commission has been making recommendations since 2011 regarding the manner in which the Navy has estimated its harbor seal densities, which the Commission believes have been underestimated. Specifically, the Commission does not support the Navy 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 animal 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 DEIS, the Navy did update the haul-out correction factor that it had used in previous EISs and incidental harassment authorization applications from 1.53<sup>1</sup> to 5.0<sup>2</sup> based on London et al. (2012). The updated correction factor was used with the Jefferies et al. (2003) survey data<sup>3</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 incorporating updated information. But rather than dividing the calculated abundance by the area of Hood Canal<sup>4</sup> to yield 9.92 seals/km<sup>2</sup>, the Navy again assumed that only a portion of the seals 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>. Based on past monitoring reports, pile driving has occurred for an average of 7 hours per day<sup>5</sup> at any time during the day, including during tidal stages when harbor seals are more likely to be in the water. Given that information, virtually all of the harbor seals in the project area could be in the water at some time when sound-producing activities are being conducted and could be taken on a daily basis. Therefore, the Navy's estimate of the total number of seals that could be taken during the course of a day is a portion of the number of seals that actually could be affected.

For example, by using the lesser density of 7.93 seals/km<sup>2</sup>, the Navy estimated that up to 10 percent of the estimated population of harbor seals could be exposed on any given day to pile driving during LMI activities. The Navy believes that percentage is likely a significant overestimate of potential exposures. The Commission does not agree. If the total ensonified area for LMI activities equates to 50.1 km<sup>2</sup> and the total area of Hood Canal based on the Navy's estimate is 358 km<sup>2</sup>, then 14 percent of the Canal would be ensonified. The Navy acknowledged that a uniform density spread over Hood Canal is not ideal. Nevertheless, that is the method the Navy chose to use and based on this example<sup>6</sup>, the number of seals that have the potential to be taken was clearly underestimated. In addition, the Navy stated that the density 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>7</sup>). The Commission notes that only stratified density estimates and animat modeling would yield more fine-scale estimates and until those data are available and those methods used, the Navy should not be reducing its harbor seal density estimates by the proportion on land at any given instant.

The Navy did note that harbor seals are always present at Bangor. Irrespective of 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 pile-driving activities. Seals not only haul out on the floating security fence,

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<sup>1</sup> Based on Huber et al. (2001).

<sup>2</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>3</sup> 711 harbor seals.

<sup>4</sup> The Navy used an area of 358 km<sup>2</sup>.

<sup>5</sup> Although activities could have the potential to occur for up to 15 hours per day.

<sup>6</sup> A similar result is evident for the SPE activities as well.

<sup>7</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.

floating booms/floats, wave screen, ladders, overwater structures under the piers, and in workboats within the immediate project area, but 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 ensoufied areas associated with LWI and SPE 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.

### **Overall take estimates**

The Commission has commented numerous times about the appropriate treatment of “fractions” of animals when estimating takes for EISs and incidental harassment authorization applications (including non-military activities). The Navy did not round the estimated takes<sup>8</sup> until totaling for each activity. Since NMFS still uses a 24-hour reset time, species-specific takes should be based on the whole number of animals taken in a given day and the number of days those activities would occur—in this instance, the Navy should have rounded before multiplying by the number of days rather than after that multiplication.

By using its approach of rounding after multiplication, the Navy underestimated the number of takes for California sea lions and transient killer whales<sup>9</sup> and overestimated the takes for harbor seals<sup>10</sup> and harbor porpoises for LWI activities. However for SPE activities, the Navy underestimated the number of takes for harbor seals<sup>11</sup>, California sea lions, and harbor porpoises and overestimated the takes for transient killer whales<sup>12</sup> only. Based on these issues, the Commission recommends that the Navy re-estimate the numbers of takes for harbor seals, California sea lions, harbor porpoises, and transient killer whales by determining the whole number of animals that could be taken on a given day for both LWI and SPE activities prior to multiplying by the number of activity days.

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<sup>8</sup> Generally, round down if less than 0.50 and round up if greater than or equal to 0.50.

<sup>9</sup> The Navy should have rounded 33.5 up to 34 California sea lions taken per day (as was done in the most recent incidental harassment authorization for Naval Base Kitsap (and prior authorizations); 79 Fed. Reg. 43440) and then multiplied by 80. In addition to rounding after multiplication, the Commission believes the Navy likely miscalculated the daily takes for transient killer whales, since  $0.02 \text{ whales/km}^2 \times 28.5 \text{ km}^2$  equates to 0.57 not 0.7 whales taken per day.

<sup>10</sup> The Commission believes the Navy likely miscalculated the daily takes for harbor seals during LWI activities as well, since  $7.93 \text{ seals/km}^2 \times 28.5 \text{ km}^2$  equates to 226.005 rather than 226.05 seals taken per day.

<sup>11</sup> The Commission believes the Navy also likely miscalculated the daily takes for harbor seals for SPE activities, since  $7.93 \text{ seals/km}^2 \times 50.1 \text{ km}^2$  equates to 397.29 rather than 396.6 seals taken per day during vibratory pile driving of steel piles. For impact pile driving of concrete piles, the Navy overestimated takes based on  $7.93 \text{ seals/km}^2 \times 0.007 \text{ km}^2$  equating to 0.05 seals taken per day, which is less than 0.50.

<sup>12</sup> In addition, the Commission believes the Navy likely miscalculated the daily takes for transient killer whales for SPE activities, since  $0.02 \text{ whales/km}^2 \times 50.1 \text{ km}^2$  equates to 1.002 not 1.2 whales taken per day.

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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

Cc: Jolie Harrison, National Marine Fisheries Service

## References

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