National Marine Fisheries Service, Alaska Region
Occurrence of Endangered Species Act (ESA) Listed Humpback Whales off Alaska
Revised August 6, 2021

This document provides information on the occurrence of three Distinct Population Segments (DPSs) of humpback whales (*Megaptera novaeangliae*) in waters off the coast of Alaska. This guidance will help Federal agencies meet their obligations to consult with the National Marine Fisheries Service (NMFS) under section 7 of the ESA, and will also be useful for assessing potential impacts of NMFS-authorized research and stranding response activities on ESA-listed humpback whales.

The general guidance provided here may not fit every circumstance, so readers should confer with NMFS as needed regarding the applicability of the ESA to humpback whales off the coast of Alaska.

Background

On September 8, 2016, NMFS published a final decision changing the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. Previously, humpback whales were listed under the ESA as an endangered species worldwide. In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified four of those as endangered and one as threatened, and determined that the remaining nine DPSs do not warrant protection under the ESA.

Three DPSs of humpback whales occur in waters off the coast of Alaska: the Western North Pacific DPS, which is an endangered species under the ESA, the Mexico DPS, which is a threatened species under the ESA, and Hawaii DPS, which is not protected under the ESA. Whales from these three DPSs overlap to some extent on feeding grounds off Alaska.

Section 7(a)(2) of the ESA requires Federal agencies to consult with NMFS regarding any federal action that may affect threatened or endangered species under NMFS's jurisdiction. Due to the change in humpback whales' status under the ESA, Federal agencies are no longer required to consult under section 7 of the ESA regarding effects to humpback whales when activities the agencies authorize, fund, or carry out may affect only whales from a non-listed DPS.[1] Since endangered Western North Pacific and threatened Mexico DPS humpback whales overlap in Alaska with non-listed Hawaii DPS humpback whales, we provide information in this document to help action agencies and others determine where those animals may be present and thus could potentially be affected by coastal development or other actions.

Wade et al. (2016) analyzed humpback whale movements throughout the North Pacific Ocean between winter breeding areas and summer feeding areas, using a comprehensive photo-identification study of humpback whales in 2004-2006 during the SPLASH project (Structure of

[1] All humpback whales, regardless of DPS, are covered by the Marine Mammal Protection Act, which prohibits take of marine mammals with certain exceptions. For information on permitting requirements see https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.

Populations, Levels of Abundance and Status of Humpbacks). Wade (2017) reanalyzed the Wade et al. (2016) data due to errors identified in the multi-strata model convergence. Wade (2021), made further revisions and refinements to the multi-strata model as part of the ongoing comprehensive assessment of humpback whales by the International Whaling Commission. The revised iterations of this paper produced updated estimates of abundance and probability of animals moving between breeding and feeding areas. This version of NMFS guidance takes into account those 2021 revisions to utilize the best available science. NMFS had expected a further refinement of the available data would be released shortly after the 2017 update, however it took longer than expected for those results to become available (2021), which is why NMFS is updating the guidance now.

In Wade (2021), a multi-strata mark recapture model was fit to the photo-identification data using a six-month time-step, with the four winter areas and the six summer areas defined to be the sample strata. The four winter areas corresponded to the four North Pacific DPSs: Western North Pacific, Hawaii, Mexico, and Central America. The analysis was used to estimate abundance within all sampled winter and summer areas in the North Pacific, as well as to estimate migration rates between these areas. The migration rates were used to estimate the probability that whales from each winter/breeding area were found in each of the six summer/feeding areas. The probability of encountering whales from each of the four North Pacific DPSs in various feeding areas is summarized in Table 1 below.

Table 1. Probability of encountering humpback whales from each DPS in the North Pacific Ocean (columns) in various feeding areas (rows). Adapted from Wade (2021)

	North Pacific Distinct Population Segments			
Summer Feeding Areas	Western North Pacific DPS (endangered)	Hawaii DPS (not listed)	Mexico DPS (threatened)	Central America DPS (endangered)
Kamchatka	91%	9%	0%	0%
Aleutian Islands, Bering, Chukchi, Beaufort	2%	91%	7%	0%
Gulf of Alaska	1%	89%	11%	0%
Southeast Alaska / Northern BC	0%	98%	2%	0%
Southern BC / WA	0%	69%	25%	6%
OR/CA	0%	0%	58%	42%

Note that in the past iteration of this guidance, upper confidence intervals were used for endangered DPSs. However, the revised estimates do not have associated coefficients of variation to cite. Therefore, the point estimate is being used for each probability of occurrence.

Aleutian Islands, Bering Sea, Chukchi Sea, and Beaufort Sea

Humpback whales from the endangered Western North Pacific DPS are uncommon in waters off Alaska. While in waters off Alaska, they are most likely to be encountered in the Aleutian Islands and Bering Sea region (which, in the SPLASH study, included the Gulf of Anadyr and part of the Bering Strait area). By inference, we include the Chukchi and Beaufort seas as part of this region as well. Throughout these areas, Western North Pacific DPS animals comprise a

small fraction of the humpback whales present (2% probability of occurrence). Individual humpback whales in this region have a 7% probability of being from the threatened Mexico DPS and a 91% probability of being from the recovered Hawaii DPS.

Gulf of Alaska
Endangered Western North Pacific DPS whales occur in the central Gulf of Alaska in the region off the coast between Yakutat and the Alaska Peninsula, but at very low rates (estimated at 0.4% in Wade (2021)). In order to be risk averse for this endangered population, we have rounded the probability of occurrence up to 1%, acknowledging that Western North Pacific DPS humpback whales occur in the Gulf of Alaska as well as the lack of measures of precision in this latest revision of population estimates by Wade (2021). Individual humpback whales in the Gulf of Alaska have an 11% probability of being from the threatened Mexico DPS and an 89% probability of being from the recovered Hawaii DPS.

Southeast Alaska
Western North Pacific DPS whales were not observed off Southeast Alaska. Individual humpback whales in Southeast Alaska have a 2% probability of being from the threatened Mexico DPS and a 98% probability of being from the recovered Hawaii DPS.

Conclusions

Based on the findings presented in Wade et al. (2016), Wade (2017), and Wade (2021), we conclude the following:

1. Federal actions occurring anywhere in waters off Alaska should undergo consultation under section 7 of the ESA if they may affect humpback whales to consider potential effects to ESA-listed DPSs. In general, the greater the number of humpback whales affected by an action, the greater the likelihood that formal consultation and an incidental take statement will be required under 50 CFR 402.14 due to the higher likelihood of taking one or more listed Western North Pacific or Mexico DPS humpbacks.

2. Based on the best available information, humpback whales encountered in the Chukchi Sea or Beaufort Sea presumably have the same probability of deriving from the endangered Western North Pacific or threatened Mexico DPS as humpbacks in the Aleutian Islands and Bering Sea region: 2% probability for the Western North Pacific DPS and 7% probability for the Mexico DPS).

3. When proposed actions are expected to take humpback whales off Alaska via harassment, injury, or mortality, the best available information indicates that the total number of anticipated takes should be apportioned to the Western North Pacific, Mexico, and Hawaii DPSs using the probabilities of occurrence summarized in Table 1.

4. Research projects and stranding response activities that may involve humpback whales in waters off Alaska should be authorized under the ESA to account for the possibility that affected whales are part of the Western North Pacific or Mexico DPSs.

Humpback whales' use of habitats off Alaska may change over time and new information may support different conclusions in the future. NMFS will update its conclusions on this issue as appropriate.

Reference Cited

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