

They Aren't Harbor Seals!? Sympatry of Cryptic Species in Bristol Bay, AlaskaSmall, Robert J.¹; O'Corry-Crowe, Greg²(1) *Alaska Department of Fish & Game, 1255 West 8th St., Juneau, AK, 99802-5526, United States*(2) *National Marine Fisheries Service*

The geographic area of sympatry between Pacific harbor seals (*Phoca vitulina richardsi*) and spotted seals (*Phoca larga*) is poorly understood, due in part to the paucity of definitive visual criteria distinguishing the two species. Northwest Bristol Bay has been considered the most likely area of sympatry in Alaska during summer and autumn when both species haul out on land. Large concentrations of seals along the northside of the Alaska Peninsula in southern Bristol Bay have been assumed to be harbor seals. During September 2000, we captured 37 seals at the three northernmost Alaska Peninsula haulouts and deployed satellite tags on 10 subadults. Our objectives were to examine harbor seal foraging behavior and movements, and further refine harbor seal population structure using mtDNA analyses. Seals exhibited two distinct movement patterns within 1 month after capture: (1) nearshore movements primarily within 20 km of haulouts, or (2) extensive 3-400km movements into the eastern Bering Sea. Genetic analysis revealed that seals which exhibited nearshore movements possessed harbor seal mtDNA haplotypes, whereas seals making extensive movements had spotted seal haplotypes. A previous genetic investigation determined that harbor and spotted seals are reciprocally monophyletic for mtDNA. One of the seals exhibiting extensive movements subsequently swam 1,500 km to the Russian coast, a pattern characteristic of spotted seals, further suggesting the long-distance movers were in fact spotted seals. Although questions about hybridization remain, the general agreement between the movement and genetic data demonstrates the power of non-conventional methods to discriminate cryptic species. These results suggest a greater area of sympatry than previously considered, and the possibility that a substantial number of spotted seals are in the large concentrations of seals that have been assumed to comprise the Bering Sea stock of harbor seals. An immediate management ramification is additional uncertainty in interpreting aerial counts designed for population assessment.

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