

Song of the Endangered Sea Canary: Vocal Repertoire of Cook Inlet Beluga Whales

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Cook Inlet beluga whales are a geographically and genetically isolated population. Between 1994 and 1998 their population declined by almost fifty percent. This decline was attributed to overharvest. The subsistence hunt ended in 1999, but the population failed to recover. In 2008, Cook Inlet belugas were listed as endangered. Many factors that may be limiting the population's recovery have been proposed including underwater noise pollution. To address this issue, the vocal repertoire of Cook Inlet belugas was characterized. Bottom-moored hydrophones were deployed at Eagle River and Trading Bay July 2009-February 2010 sampling at 25000 Hz with a duty cycle of 30 seconds every 5 minutes. Using Tria software, each call was quantitatively described and categorized as a whistle, pulsed call, or click train. The vocal repertoire at each location for the summer and winter months was analyzed by calculating the total number and relative abundance of each call type and identifying the unique call contours at each location for both

seasons. The repertoires at each location for each season were compared to determine if CIB's vocal repertoire varies temporally or spatially. For July-September of 2009, there were 186 beluga calls in Trading Bay and over 5000 calls at Eagle River. There was evidence of spatial variation in the relative abundance of call types. At Trading Bay in summer 2009, whistles made up over 80% of the calls with pulsed calls and click trains comprising ~15% and < 1% respectively. In Eagle River, approximately 50% of calls were whistles, 30% pulsed calls, and 20% click trains. There were also unique call contours identified at Eagle River that were not seen at Trading Bay. The next step will be to conduct an ambient noise study to determine if a correlation exists between variation in CIB's repertoire and differences in the ambient noise environment.



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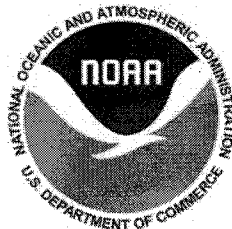
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