Results from Five Years of Aerial Photographic Data from the Bowhead Whale Feeding Ecology Study (BOWFEST)

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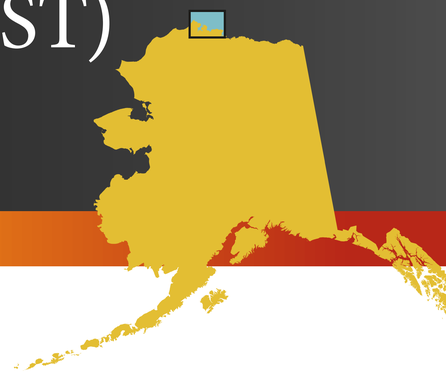
Photo credit: Kate Stafford



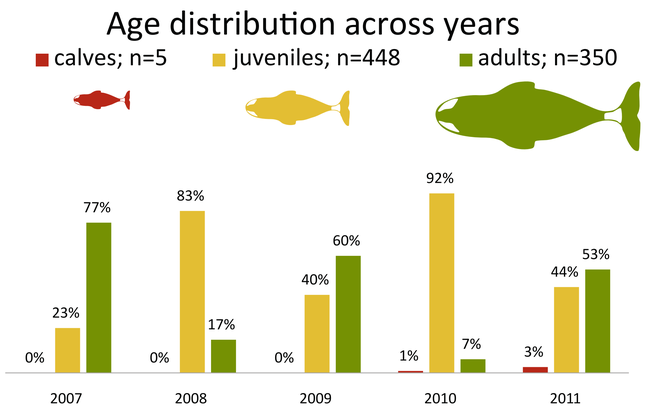
Background

The Bowhead Whale Feeding Ecology Study (BOWFEST) was conducted August-September from 2007 through 2011 near Barrow, Alaska. The aerial survey component of this study focused on documenting the presence of bowhead whales throughout the area. In addition to trackline surveys, whales were photographed to provide information on individual bowhead whales.

Age Distributions

16m adult, 6m calf

9m juvenile



Photogrammetry provides length measurements of the whales. These are used as a proxy for age, thus providing the distribution of age classes within the study area. We define ages as: calves <=6m; juveniles >6 and <13m; adults >=13m.

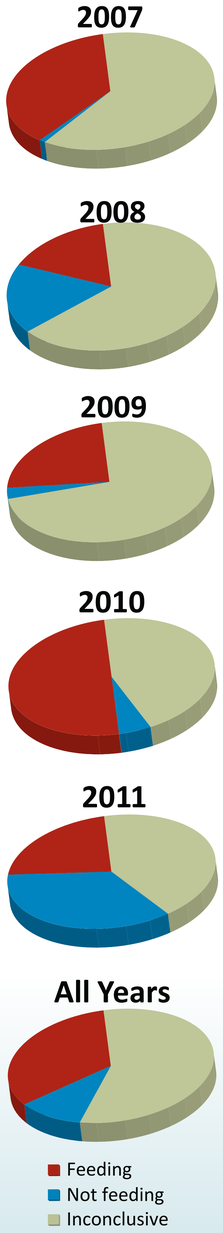
Matching Effort

Photo-identification allows us to re-identify individuals within a season (indicating residence times) and across years (indicating temporal/spatial habitat preference of certain individuals). During the 5-year study, we took 1,605 photographs and we identified 764 unique whales.

Only three within-year matches have been found: A, B, C, above. Although the inter-year matching effort is ongoing, we have already found one match of a whale photographed in 2007 and again in 2009; D above. Our BOWFEST photoanalysis shows no consistent individual fidelity to the Barrow area in late summer. This underscores the importance of this region to the entire bowhead whale population rather than small, distinct feeding aggregations.

Feeding Evaluations

Photographs of whales were evaluated for evidence of feeding. We show definitive evidence of feeding in red, definitive evidence of no feeding in blue, and photos that had inconclusive evidence or were poor quality are light green.



Feeding: mud

Feeding: open mouth

Feeding: feces

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