

Online Resource 1 – Example images of cause of death category, “probable killer whale (*Orcinus orca*) predation” and “could not be determined.”

Bowhead whale (Balaena mysticetus) carcasses documented during the 2019 aerial surveys in the eastern Chukchi and western Beaufort seas: A follow up to evidence of bowhead whale and killer whale (Orcinus orca) co-occurrence during 2009–2018

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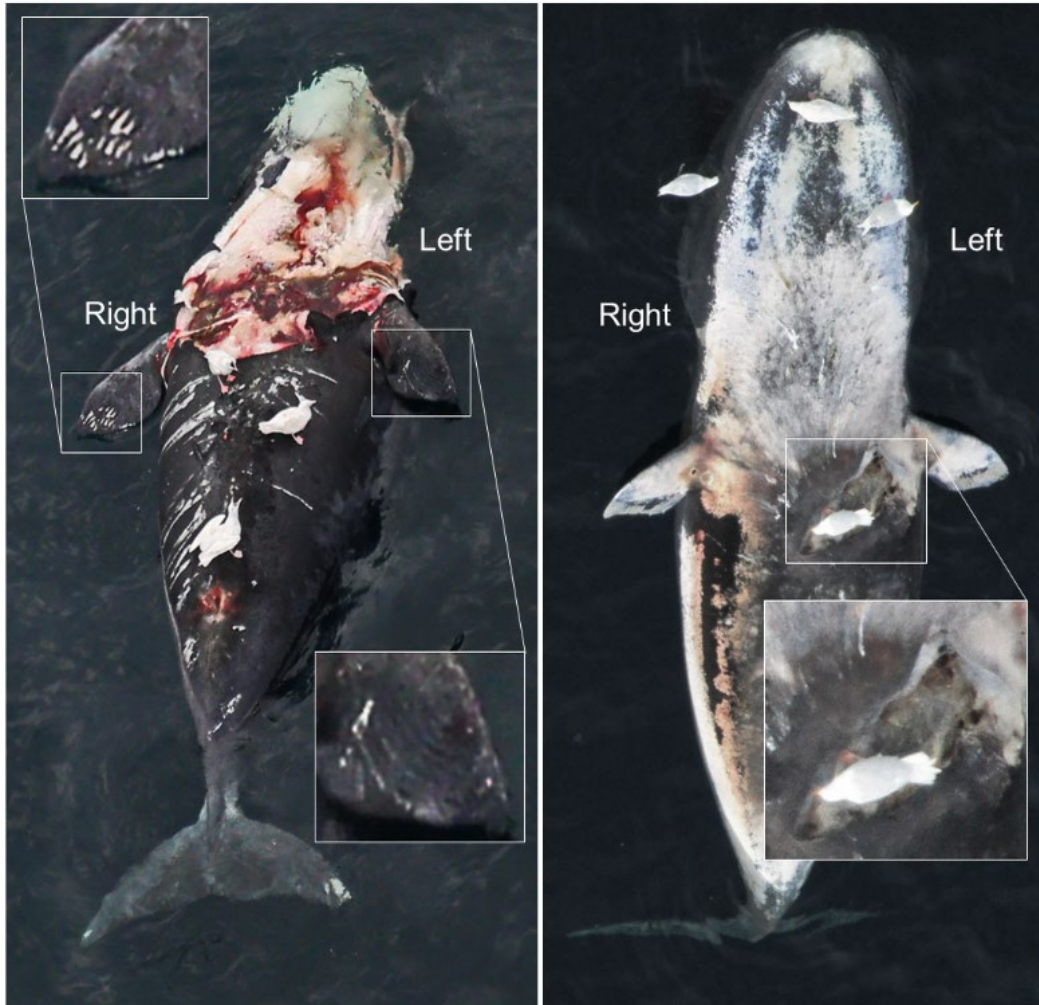


Fig. 1.1 Example of cause of death category “probable killer whale (*Orcinus orca*) predation” (left image) and “could not be determined” (right image). Left image: Ventral view of the carcass of a young bowhead whale (*Balaena mysticetus*) with severe injuries consistent with probable killer whale predation: flesh, blubber, and muscle removed from the chin, throat, and the left side of the head exposing the left jawbone. The left fluke tip is missing and the tissue around the wound appears frayed. Killer whale tooth raking (rake marks) are visible on the ventral aspect of the left and right pectoral flippers as indicated by white outlines and for better detail within enlarged images of each flipper in the left image. The rake marks on the right flipper appear white, which is indicative of the healing process resulting in white pigmented scar tissue (George et al. 1994). Healed rake marks would suggest a previous encounter with killer whales. However, the white appearance of the rake marks is likely an artifact of the imagery or the result of the flipper being in more contact with the water resulting in maceration of the damaged tissue compared to the left flipper, where the indentation of killer whale teeth is the dark color of the epidermis and dermal layers. Right image: Ventral view of the carcass of a bowhead whale whose possible cause of death could not be determined. This whale has a torn section of skin and blubber on the ventrum extending from the midline laterally towards the left pectoral flipper with no other external wounds or injuries visible to investigators. Photo credit: (left image) Karen Vale, NOAA/NMFS/AFSC/MML, NMFS Permit No. 14245-4, Funded by BOEM, IA Contact No. M16PG00013; (right image) Corey Accardo, NOAA/NMFS/AFSC/MML, NMFS Permit No. 20465, Funded by BOEM, IA Contact No. M17PG00031

George, JC, Philo LM, Hazard K, Withrow D, Carroll GM, Suydam R (1994) Frequency of killer whale (*Orcinus orca*) attacks and ship collisions based on scarring on bowhead whales (*Balaena mysticetus*) of the Bering-Chukchi-Beaufort Seas stock. *Arctic* 47, 247–255