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## **Combining IQ and Science**

Our group is incorporating Inuit Qaujimajatuqangit (IQ) or Inuit Traditional Ecological Knowledge into killer whale research and issue 3 of the Aarluk News is devoted to this topic. Northerners reported seeing more killer whales in Hudson Bay and the Eastern Arctic. As a result, IQ projects were developed to interview hunters and elders about their knowledge of killer whales (page 2). This led to research into changes in ice over time (page 3). Hunters and elders in the Foxe Basin region told us that in recent years many bowhead are being killed by killer whales and this has led to a research project to study the relationship between these two kinds of whales (page 4). Because killer whales are only seen occasionally, we used local knowledge to help focus our efforts to find and photograph killer whales in 2009. This summer we will continue to focus our efforts on Admiralty Inlet to observe and tag killer whales that hunt narwhal there.

#### IQ Knowledge of Killer Whales in Nunavut

Learning traditional knowledge from local people is an important step in gaining a better understanding of killer whales in Nunavut. So far, we have asked 105 elders and hunters from Repulse Bay, Igloolik, Hall Beach, Rankin Inlet, Arviat, Pangnirtung, Kimmirut, Arctic Bay, Iqaluit, Pond Inlet, and Qikiqtarjuaq about their knowledge of killer whales. We are interested in learning when and where killer whales are seen, how they act, and what they are eating. This information can guide our projects by directing us to good locations to see killer whales and by focusing our research on questions that are of interest to northerners.

Some highlights from our interviews were that killer are usually seen in bigger groups along the north and east Baffin coast and in Repulse Bay, compared to smaller groups in Foxe Basin. Killer whales prey on almost all other marine mammals including: seals, narwhal, bowhead, and beluga whales. Hunters know when killer whales are in the area by observing the reaction of their prey. Other whales will hide near the ice or go in close to the land to avoid killer whales and seals will get out of the water.

We would like to thank all of the people who have helped and have included some quotes from elders and hunters in this issue. You can read a summary of all the interviews on the OCA website.



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Northerners have reported an increasing number of killer whales in recent years, especially in western Hudson Bay. This led us to wonder about the long term changes in killer whales in the greater Hudson Bay area. So we looked at the relationship between killer whale sightings in Hudson Bay and the amount of sea-ice in Hudson Strait. This research showed that since the 1950s there has been less ice in the Hudson Strait in summer and perhaps as a result, more killer whales are seen in Hudson Bay and killer whales have been reported further west into Hudson Bay. You can read the full research article (Higdon & Ferguson 2009) that was published in the journal 'Ecological Applications' on the OCA website.

We are continuing to collect sighting



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### Killer Whales and Bowhead Whales

Many hunters and elders interviewed in Igloolik and Hall Beach indicated bowhead whales are important food for killer whales and had many stories about the ways killer whales hunt the much larger bowhead whales. These included jumping on top of their blowhole and preventing the bowhead from breathing, hitting them to break ribs, and biting them. We took photos of bowhead whales to look for scars and see how many bowhead had been attacked by killer whales and lived. In 135 photographs of bowhead flukes, killer whale rake marks were observed on four whales.

We hope that as we continue our bowhead photo identification project we can get a better idea of how big of an effect killer whales are having on bowhead whale populations.

"There were hardly any killer whales when I was a child, the killer whales started to come when the bowhead whales started to come back."

We would like to thank all the people who have given us photos, sightings forms, and reports in 2009. This includes northerners from the communities of Qikiqtarjuaq, Repulse Bay, Arctic Bay, Arviat, Chesterfield Inlet, Rankin Inlet, Whale Cove, and Kugaaruk.

If you see killer whales, please tell us - sightings forms can be downloaded from the OCA website or obtained at your HTO or conservation office.



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http://www.umanitoba.ca/faculties/science/zoology/faculty/ferguson/OCA/OCA.htm