

# Valued Component – Marine Mammals (FINAL DRAFT)

## STATE OF KNOWLEDGE – WHAT IS HAPPENING?

**A very brief overview of the state of knowledge with respect to marine mammal habitat, populations and harvests in the NWT is presented below.**

❖ **What are the baseline conditions with respect to marine mammal habitat, population and harvest?**

Habitat: Bowhead whales arrive in the Beaufort Sea in spring, following leads far offshore in the pack ice and arriving in the Canadian Beaufort Sea by approximately July. They are widely dispersed during much of July, however by mid August they form loose aggregations in a number of feeding areas/hot spots in the southeastern Beaufort Sea. Several areas are used in a given year, although not all areas are used in all years. Recurrent and important areas of aggregation for summer feeding are known from the 1980's aerial survey work, and these include Yukon coastal waters, particularly between Herschel Island and Shingle Point; the "interface" of the Mackenzie River plume and the marine waters approximately 30 km north of Shingle Point, 30-50 km north of Cape Dalhousie, the Mackenzie Canyon and Kugmallit Canyon areas, near Cape Bathurst, along the western shores of Franklin Bay, and near Nelson Head. These areas provide important summer feeding areas for bowhead whales.

Belugas arrive at about the same time as the bowheads, following similar offshore routes in spring. Belugas are seen in the leads of Amundsen Gulf in May and June, and by late June they begin a westward migration following the ice edge off the Tuktoyaktuk Peninsula where they "wait" for the landfast ice bridge off the Mackenzie Delta to break. Once the ice bridge breaches, the whales immediately enter the Mackenzie Estuary and sort themselves out among three main bays\_ Mackenzie Bay (usually first), East/West Mackenzie Bays (central Delta) and the eastern Kugmallit Bay area. Water in the estuary is highly turbid so it is

## KEY MONITORING INDICATORS

*Body condition and reproductive status of seals and whales*  
*Disease and contaminant loads in individuals*  
*Age of first maturity & reproductive rate*  
*Stock size and range*  
*Prey quantity and quality*  
*Quality, temporal and spatial extent of sea ice*  
*Ambient and anthropogenic noise levels*

difficult to discern the specific activities of the whales in the estuary. It is believed that the whales spend time in the estuary in July as the fresh water promotes the annual moult, the warmer temperatures provide good rearing for calves. The whales are frequently observed to socialize in this habitat. By mid July some of the whales begin to leave the estuary, and by late July and early August most have gone. The females with calves move to the Amundsen Gulf area where they make one or two circuits for the month of August, before returning to the Bering Sea wintering areas. The males and resting year females move offshore to north of Banks Island and into Viscount Melville Sound, where they are presumed to aggregate and feed during the month of August. The return migration of this group also takes place in September, and is largely through waters far offshore of Alaska. They move through the Bering Strait in November and December, into wintering areas in the Bering Sea.

Ringed and Bearded Seals: these seals are resident species, so do not leave the region in winter like the whales do. Ringed seals are also known to aggregate in these areas to feed as bowheads do, as their prey preferences overlap with those of the bowhead whale. After the important summer feeding period, seals establish territories in the landfast ice and maintain breathing holes throughout the winter. Seal pups are born in subnivean birth lairs in areas of stable landfast ice in late March or early April, and the lactation period lasts approximately 6 weeks. During the lactation period, the seal pups

spend an increasing amount of time swimming and learning to catch prey for themselves. The mothers spend an increasing amount of time away from the pup and lair, in search of food. Mating takes place at the end of the lactation period. The stable land fast habit is critical to the well being of the ringed seal, providing prey, substrate for pupping, pup rearing. The availability of stable sea ice in areas of good quality and quantity of prey is critical to the well being of seals in the Beaufort Sea.

Bearded seals prey primarily in benthic habits, requiring adequate quality and quantity of benthic prey. They give birth to their pups in late March and early April on the moving pack or transition zone ice, and lactation lasts only 12 days. Bearded seals also tend to be solitary. The most important habitat for bearded seals are thus the availability of benthic feeding areas and pupping habitats.

### **Populations**

The most recent estimate of the size of the bowhead whale populations is 10,470 (National Marine Fisheries Service, Alaska Forum on the Environment, Brad Smith, February 2005) based on the counts of spring migrants at Point Barrow. The size of the beluga population is estimated at a minimum of 40,000 beluga, and is Canada's largest population of beluga (Hill and DeMaster 1999). The size of the ringed seal population in the Beaufort Sea and Amundsen Gulf has been inferred to be at least 650,000 (Stirling and Oritsland 1995). The size of the bearded seal population is not known, although during aerial surveys in the Beaufort Sea in the 1970's, ringed seals were sighted 16:1 bearded seal.

### **Harvests**

Bowhead Whale: The Inuvialuit of the western arctic renewed their traditional harvest of the bowhead whale in 1991, taking a 37 ft male in that year. A second bowhead was landed in 1996. No bowheads have been harvested by the Inuvialuit since that time, although they may apply again for a license at sometime in the future.

Beluga Whale: The Inuvialuit of the Mackenzie Delta and Paulatuk conduct an annual subsistence hunt for beluga which has averaged 110 beluga over the past decade. This is a lower than the average in the previous decade.

Ringed Seal: The Inuvialuit harvest approximately 500-600 ringed seals annually, with most of these coming from the community of Holman. Seals are used to feed dog teams, pelts used for handicrafts and are sold commercially, and seal meat (particularly from young seals) is eaten locally. Present day harvests are considerably lower than in the 1960's, prior to the anti-sealing campaigns.

## **CURRENT MONITORING**

### **Ongoing monitoring programs with respect to marine mammal habitat, populations and harvests in the NWT are:**

- ▶ Mackenzie Delta Beluga Harvest Monitoring – since 1980 – Fisheries Joint Management Committee, Esso Resources Canada and DFO. Have been sponsoring local “beluga monitors” to measure, enumerate and sample the subsistence harvest
- ▶ Bowhead Whale Harvest monitoring: DFO and FJMC measure and sample bowhead whales that are landed in the ISR (to date, n=2)
- ▶ Beached bowhead whale sampling: DFO attends, attempts to sample and measure all bowhead whales reported as washed up/beached in the ISR
- ▶ Ringed seal harvest monitoring – sampling and measuring ringed seals taken in the regular harvest at Holman (1992-

present); Sachs Harbour (1987-1989 and 1992, 2004-2008), Paulatuk (1992 and 1993) and Tuk (2004-2006). Dept. of Fisheries and Oceans, Yellowknife, NT, FJMC, and MMS funding.

- ▶ Seal and whale disease monitoring: FJMC and DFO sample whales and seals for disease assessments – healthy and reportedly unhealthy or abnormal animals
- ▶ Seal and whale contaminants monitoring: FJMC and DFO sample harvested whales and seals for contaminant levels

## GAPS AND RECOMMENDATIONS FOR MONITORING

**A list of monitoring gaps and recommendations for future monitoring under the NWT Cumulative Impact Monitoring Program is found below.**

### **Gaps**

- ❖ Data and information on range, movements, site fidelity, stock structure for beluga and ringed seals as indicator species
- ❖ Data on the impacts of development on these species
- ❖ Data on the impacts of climate change /reduced ice cover on ringed seals and bearded seals
- ❖ Determine the cause of death of bowhead whales that are being washed up annually in the Amundsen Gulf and discovered by Inuvialuit harvesters in the rim communities
- ❖ More information on the basic life history of bearded seals is needed
- ❖ Monitoring of ambient and anthropogenic underwater noise in the critical habitats used by beluga and bowhead whales

## **Recommendations**

- ❖ Monitoring of marine mammal distribution, abundance, size, age distribution and maturity of harvested species
- ❖ Continued community-based monitoring through harvest based projects, which are more comprehensive in biological data collection than harvest enumeration studies.
- ❖ Strong linkages with other VEC's such as Water Quality and Quantity.

## REFERENCES

**Relevant monitoring reports, past monitoring programs, research documents, and scientific publications are found below.**

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