

**NWRT Interim Project Report  
Submitted January 15, 2011**

**1. NWRT Project Number:** 03-10-09

**2. Project Title:** Foxe Basin Walrus Survey

**3. Project Leader:**

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**4. Summary:**

This study gathers information needed to assess and manage walrus (*Odobenus rosmarus rosmarus*) in Foxe Basin. To develop and apply methods of assessing population size, concurrent boat and aerial surveys are used to quantify walrus at terrestrial haulout sites in Foxe Basin. Using two methods concurrently allows DFO to evaluate the robustness of each method. Further, satellite-linked radio tags deployed immediately before the survey facilitates an accurate estimate of the population, adjusting for walrus that are submerged and thus not counted in the survey. Tags are deployed remotely without the use of anaesthetic or handling of the animals. Tags also provide information on habitat use, particularly the location and vulnerability of essential haulout sites on land. Biopsies, tiny pieces of skin, are taken at the same time as tagging to provide genetic information.

Population trajectories, depletion ratios and recovery potential assessments have always incorporated estimates (guesses) of survivorship and increasingly rely on catch histories. In addition to the field work outlined, we are conducting two desk analyses: one to use previously collected harvest data to determine survivorship and one to examine catch history records from archival material. Some work has been completed on both topics which can be concluded in time to assess potential for population growth and recovery.

Preliminary field work in 2010, allowed us to learn a great deal of areas of walrus concentration and movements. This information will shape the survey design in 2011. Participants from both Hall Beach and Igloolik, we enthusiastic and of immense assistance in carrying out this survey and are eager to continue this work.

**5. Project Objectives:**

Currently, there are no significant changes to report regarding the project objectives.

- Consensus design for estimating walrus population size
- Comparison of boat and aerial counts to assess efficacy of each
- Use of tag data to adjust counts
- Obtain skin biopsies for future genetic studies.
- Calculation of survivorship in the 1980s (archived data)
- Reconstruction of historical harvest levels.

Presently, photographs and tag data are being analyzed to the end of generating a primary population estimate.

## **6. Materials and Methods:**

Primarily, work to date has focused on designing and conducting a survey to enumerate walrus in Foxe Basin. The study was designed and carried out in cooperation with the HTAs of Hall Beach and Igloodik.

The field work portion of this project was conducted with little variance from the summary provided in the NWRT application. A field crew comprised of DFO and HTA representatives was flown by helicopter to known walrus haulouts and 11 SPOT 5 satellite-linked radio tags were remotely deployed; at this time skin biopsies were also obtained.

Following this, concurrent boat and aerial surveys were conducted. Crews from both Hall Beach and Igloodik were trained in conducting boat-based surveys and provided all requisite gear; this work was successfully completed with excellent photographs and observations. Animals were sighted and photographs were taken for later counting. Survey tracks were recorded via GPS, and cameras were time-synced to GPS for later geo-referencing. Counting photographs from both surveys will generate a minimum known alive population estimate, which, once incorporated with tag data and further statistical manipulation will give rise to a corrected population estimate. Using estimates from both aerial and boat surveys, it will be determined which method provides the most accurate and most economical population estimate for walrus in Foxe Basin.

Desk analysis for catch history and survivorship is forthcoming and proponents have been secured for both projects. The identification of haulout sites other critical habitat will be forthcoming as further analysis on the satellite tag data is completed.

## **7. Project Schedule:**

At present this project is slightly behind the schedule as proposed. There was a slight delay in receiving the data from the boat crews (December) and tags transmitted longer than expected, again delaying our start to analyze this information. Currently, data analysis on photographs and tag data is being performed and a preliminary population estimate will be generated in spring 2011. Plans are also in development to conduct a second survey in 2011, which will provide a more robust estimate of population and attempt to capture a year with *normal* ice conditions in Foxe Basin; which was not the case this year.

## **8. Preliminary results/discussion:**

The survey was designed in consultation with both the communities and HTAs of Hall Beach and Igloodik. As such traditional knowledge played a major role in the final design of this survey.

Preliminary scouting of haulout sites via helicopter and attempts at satellite tagging occurred between August 28 and September 3, 2010. The crew was comprised of DFO and HTA representatives. During this time 11 SPOT-5 tags were successfully deployed on walrus hauled out on the Manning Island complex. The presence of polar bears and lack of walrus at other haulout sites prevented tags to be as widely distributed as hoped. At this time skin biopsies of 24 individuals were taken for future genetic stock discrimination work. Tags transmitted up to 3 months, with all transmitting for at least 2 weeks, to capture the survey period. No local reports of tagged animals or dead animals with tags were received.

During the period of September 6-13, 2010 a fixed-wing aerial survey was conducted from a twin otter. The crew was comprised of DFO and HTA representatives. All of the proposed survey area in Northern Foxe Basin was surveyed at least once, with most areas repeated. Areas of previously observed walrus concentrations were repeated multiple times to collect sufficient

replicates (photographs) for statistical analysis. Efforts were made to record each unique walrus sighting via photograph and visual estimate.

During September 11-22 boat based surveys were conducted by individuals contracted to the Hall Beach and Igloodik HTAs. Two boats per community surveyed for 5 days respectively, covering a good portion of western Foxe Basin. Visual observations of sightings were submitted with corresponding locations via photographs, maps and GPS files

Upon further data analysis, a preliminary population estimate will be generated, using the *minimum known alive* format. Adjusting this using satellite tag data, will provide a more accurate population estimate, accounting for animals submerged during survey efforts.

In addition, 2010 was an abnormal year, with no multi-year ice observed (Aug-Sept.) in Foxe Basin, IQ suggests this is the first time this has occurred. This furthers the need to carry out a subsequent survey to gauge a "normal" ice year, or to determine if this will be the new normal

### **9. Reporting to communities/resource users:**

Numerous telephone and email communications took place to open dialogue regarding this project. Meetings in both Hall Beach and Igloodik occurred for the first time in January of 2010. Igloodik approved the proposal following this meeting. Hall Beach requested a second meeting (March 2010) with the HTA as well as a radio meeting which would allow residents to call in and voice and questions or concerns. Following this meeting Hall Beach approved this project.

From April 1-August 15, 2010, communication with both communities occurred on a regular basis to finalize the planning, contracting and IQ collection; these communications were via telephone, fax and email.

August, 18, 2010 a meeting with the HTA in Hall Beach occurred prior to the field season, to update on the final survey design and gather local conditions and knowledge pertaining to the field work. Similar email and telephone communication occurred with Igloodik at this time and a meeting in Igloodik occurred on September 9, 2010. During field work, regular telephone and email contact was made with each HTA to provide ongoing updates on work completed. Following the field season, email and telephone updates were passed on to the HTAs highlighting the work completed during the 2010 field season.

In November 2010 meetings were scheduled in both communities, however, due to weather constraints only the Igloodik meeting was able to proceed. Representatives from both HTAs were able to receive full updates/summaries at the Foxe Basin Walrus Management Plan meetings in Iqaluit, NU (December 2-3, 2010). A meeting in Hall Beach is scheduled for February 2011 at present in association with the Foxe Basin Walrus Management Plan meetings.

Translated hard copy reports will be provided in early 2011 to both HTAs summarizing work done in 2010 and sharing preliminary results. As always email and telephone communications will comprise the bulk of the communication leading up to the proposed work in 2011. However, another set of meetings is tentatively scheduled for May 2011 to discuss 2011 work and seek corresponding approval.