

Beaufort Beluga Satellite Tracking

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Overview of project

- **2004:** 2D Tracking of beluga whales to study habitat use in the Beaufort Sea from summer to spring
- **2005:** 3D Tracking of beluga dives to determine the portions of the water column used



Main Drivers to the Project

- Seasonal Habitat Preference
- Link movement and diving behaviour with concurrent food chain studies and contaminant pathway studies
- With particular emphasis on present and future interactions with Northern oil and gas activity
- Provide input to the present MGP EIS process

Timeline

- Past work: 30 belugas tracked in 1993, 1995 and 1997
- 2004: 9 belugas tagged
- 2005: 4 belugas tagged
- 2006: analysis of progress to date and communication to stakeholders
- 2007: to be determined if continue tagging or other method

Beluga Field Capture



Project Enablers

- **Past work 1993-1997:**

- Funding: FJMC, ESRF, DFO, WWF
- Support: IGC, Aklavik, Inuvik and Tuktoyaktuk HTC
- hired field assistants from Inuvik, Aklavik and Tuktoyaktuk

- **2004:**

- Funding: Devon Petroleum, LOMA, FJMC, WWF, ArcticNet DFO
- Support: IGC, Aklavik, Inuvik and Tuktoyaktuk HTC
- Hired field assistants from Aklavik, Inuvik and Tuktoyaktuk + FJMC supported students

- **2005:**

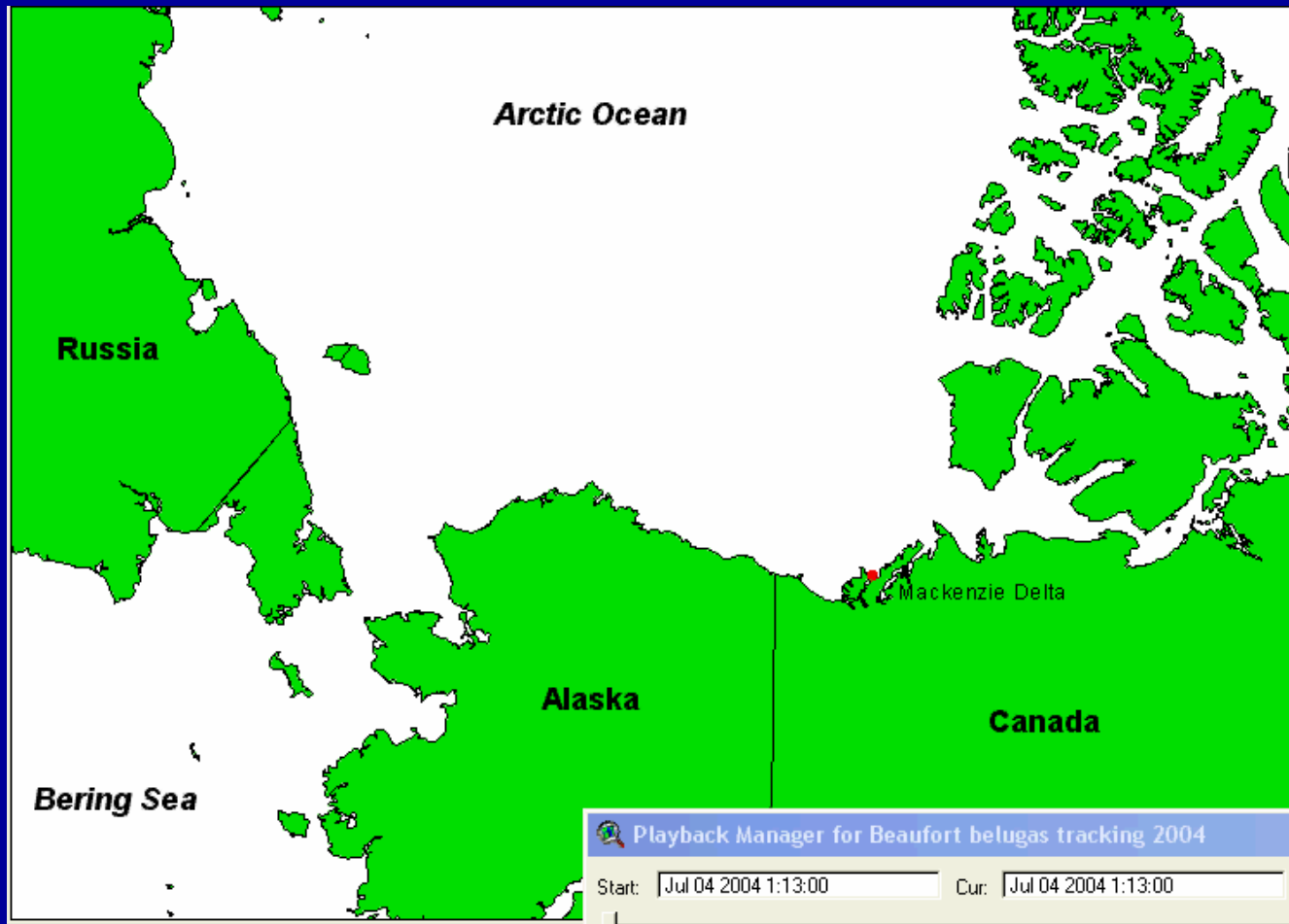
- Funding: MGP, FJMC, DFO, PCSP, ArcticNet
- Support: IGC, Aklavik and Inuvik HTC
- Hired field assistants from Aklavik and Inuvik + FJMC supported students

Tagging Results: 1993, 1995, 1997



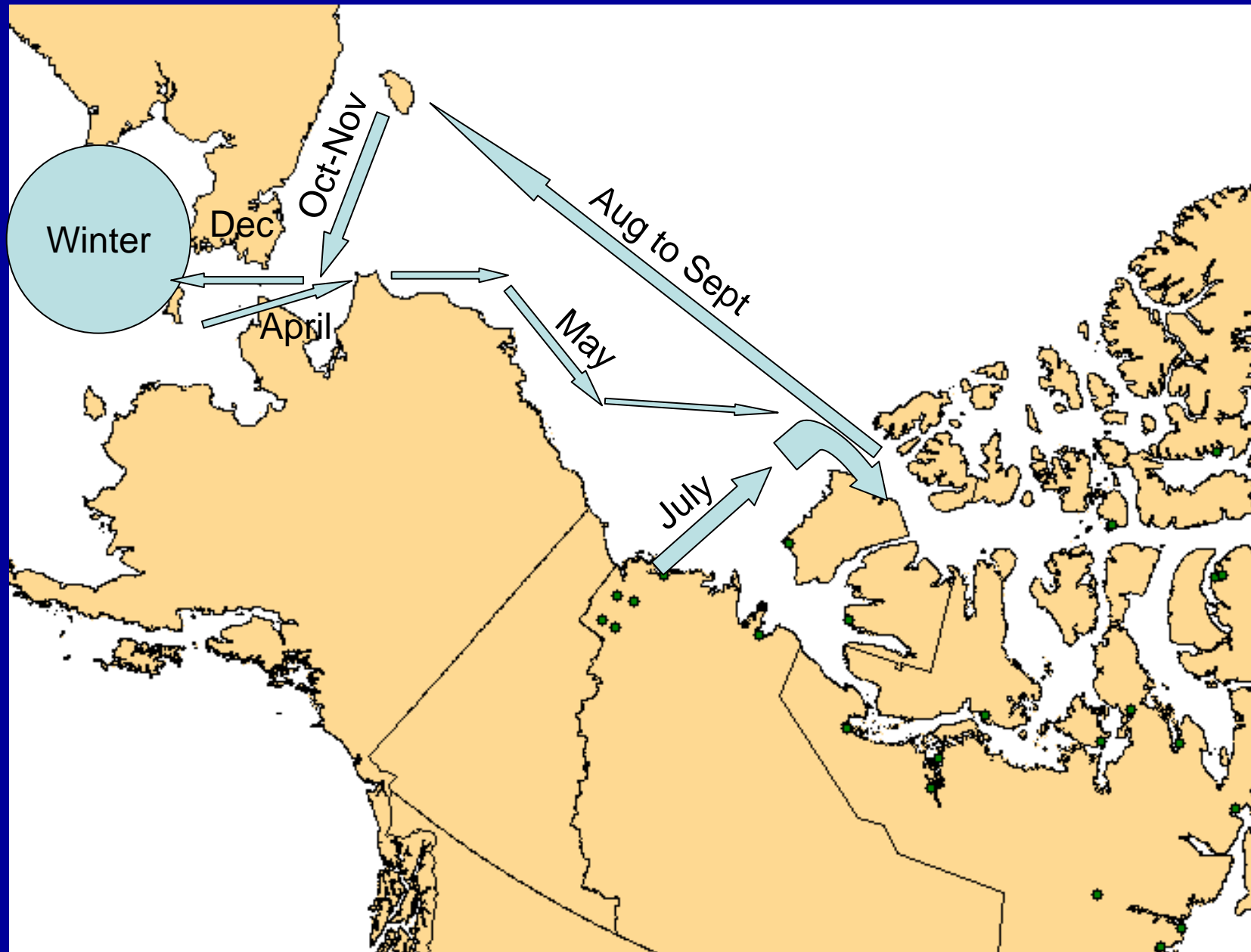
Note: double-click on image to play

Tracking results July 2004 to Feb 2005

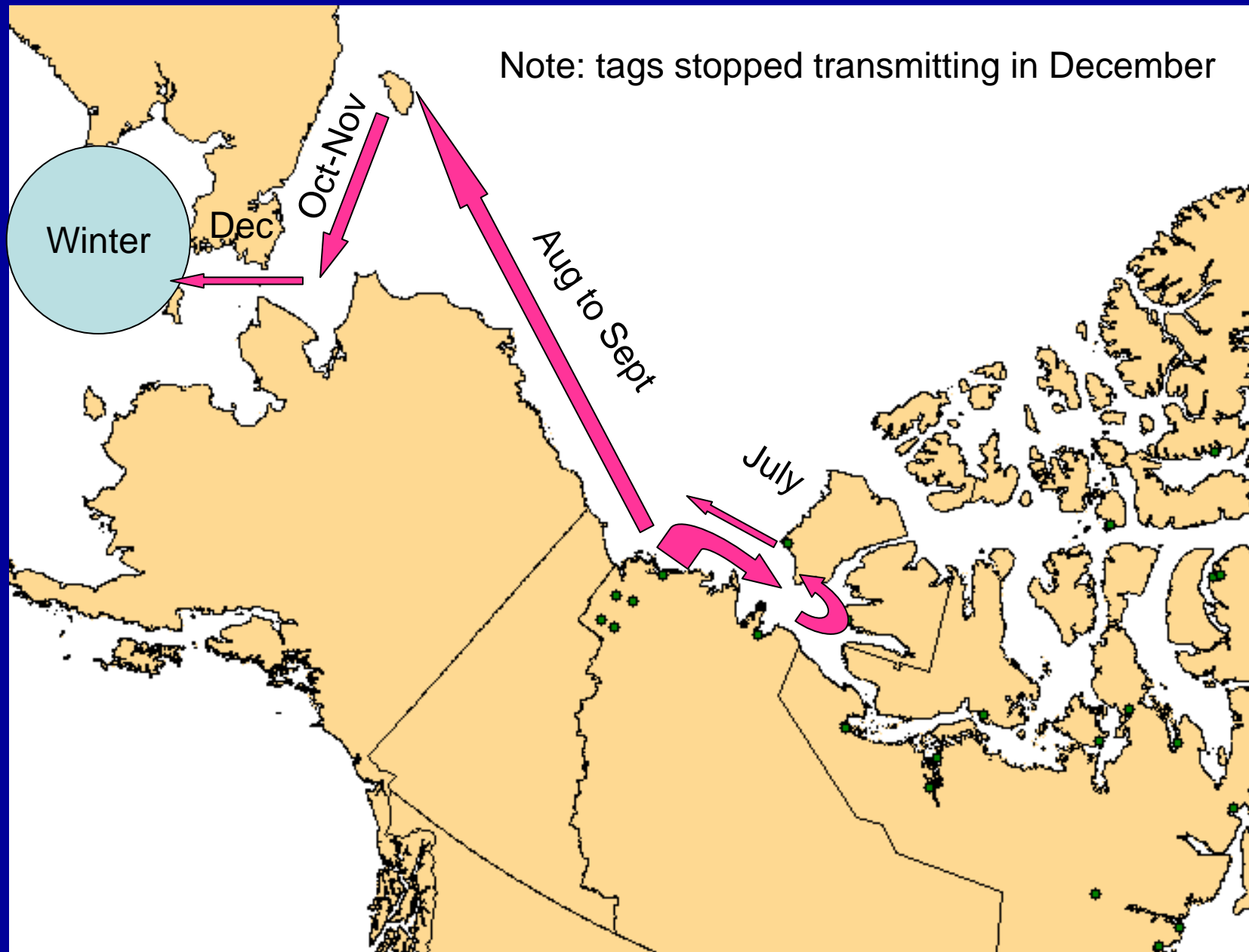


Note: double-click on image to play

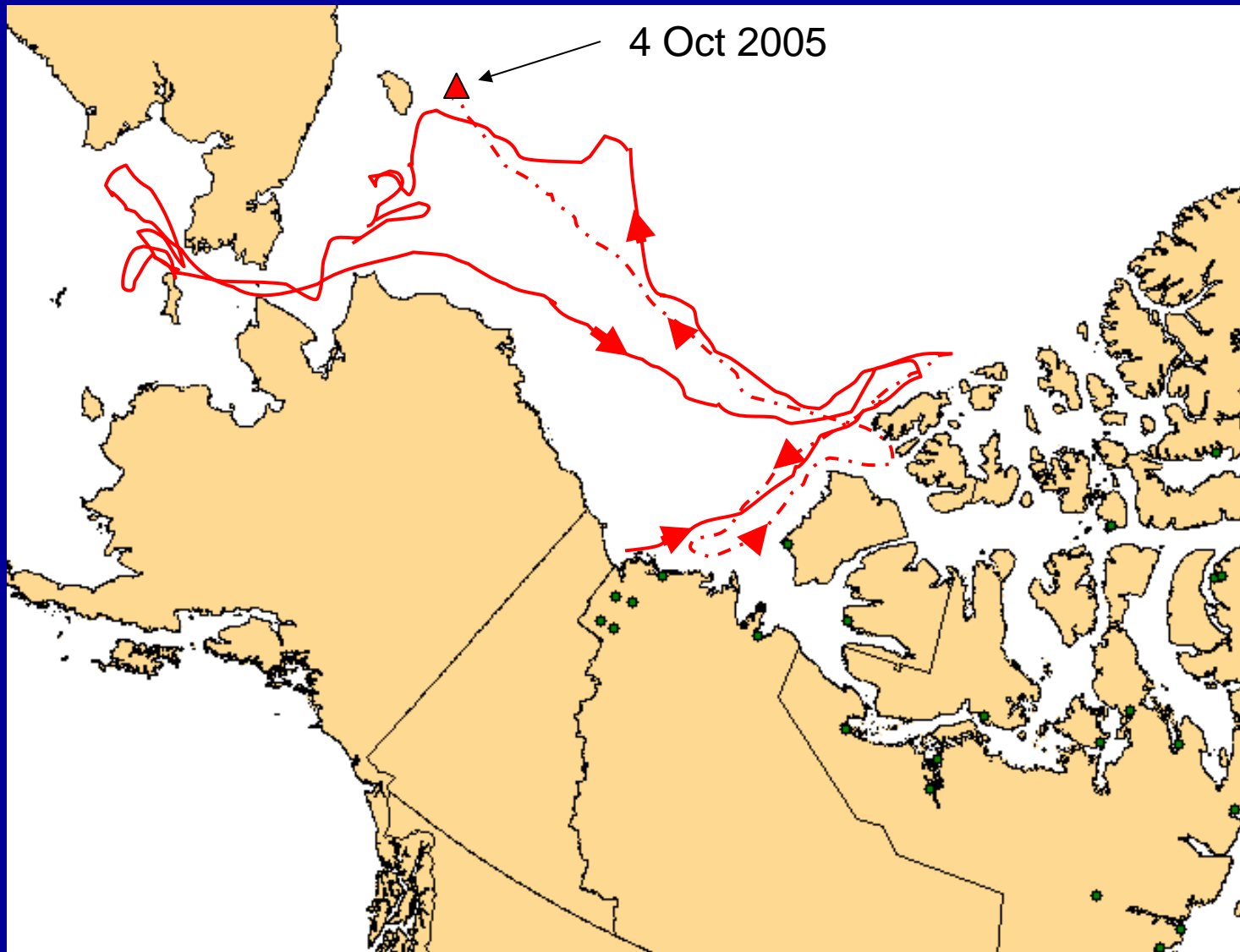
General Male Movement for beluga tagged in July 2004



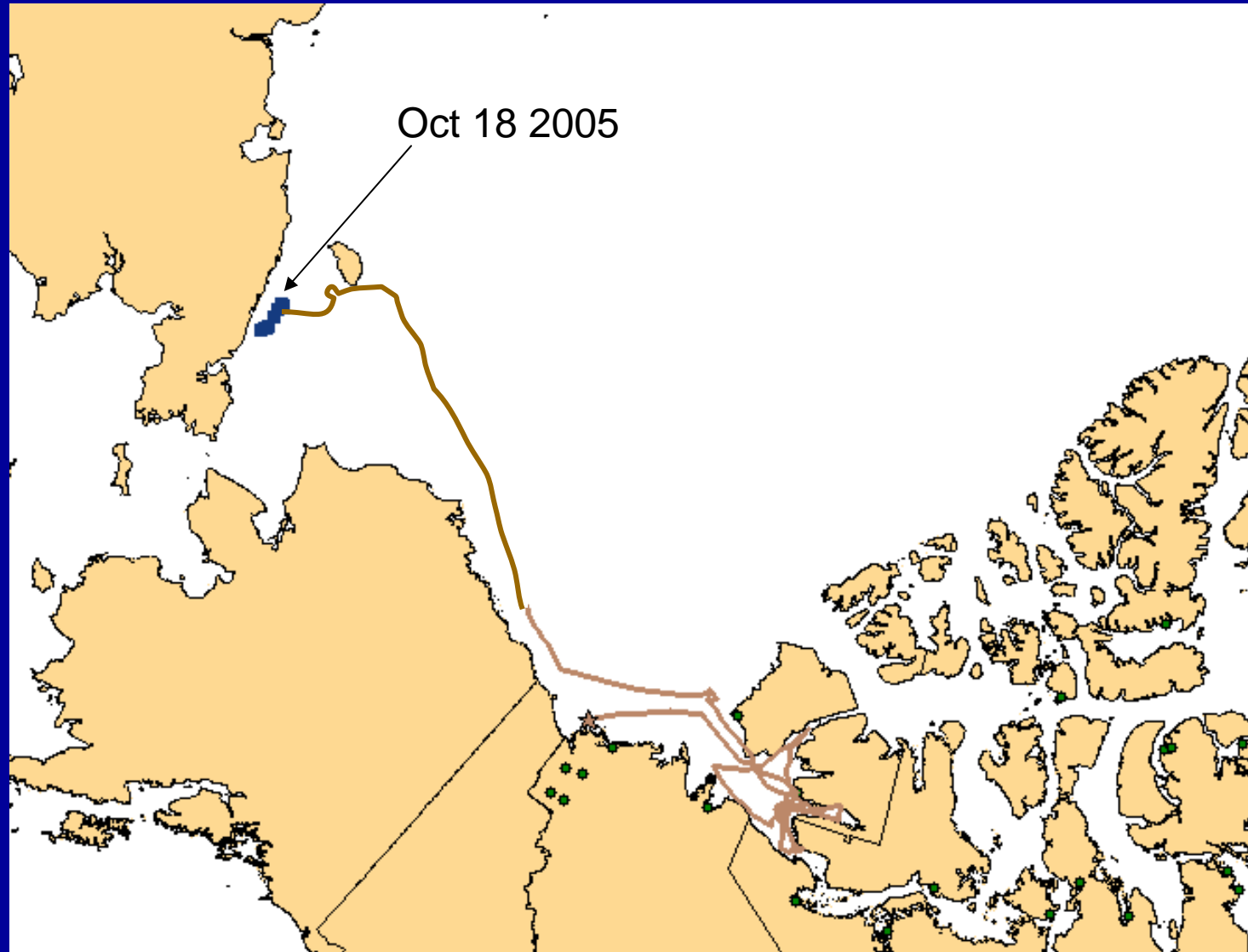
General Female Movement for beluga tagged July 2004



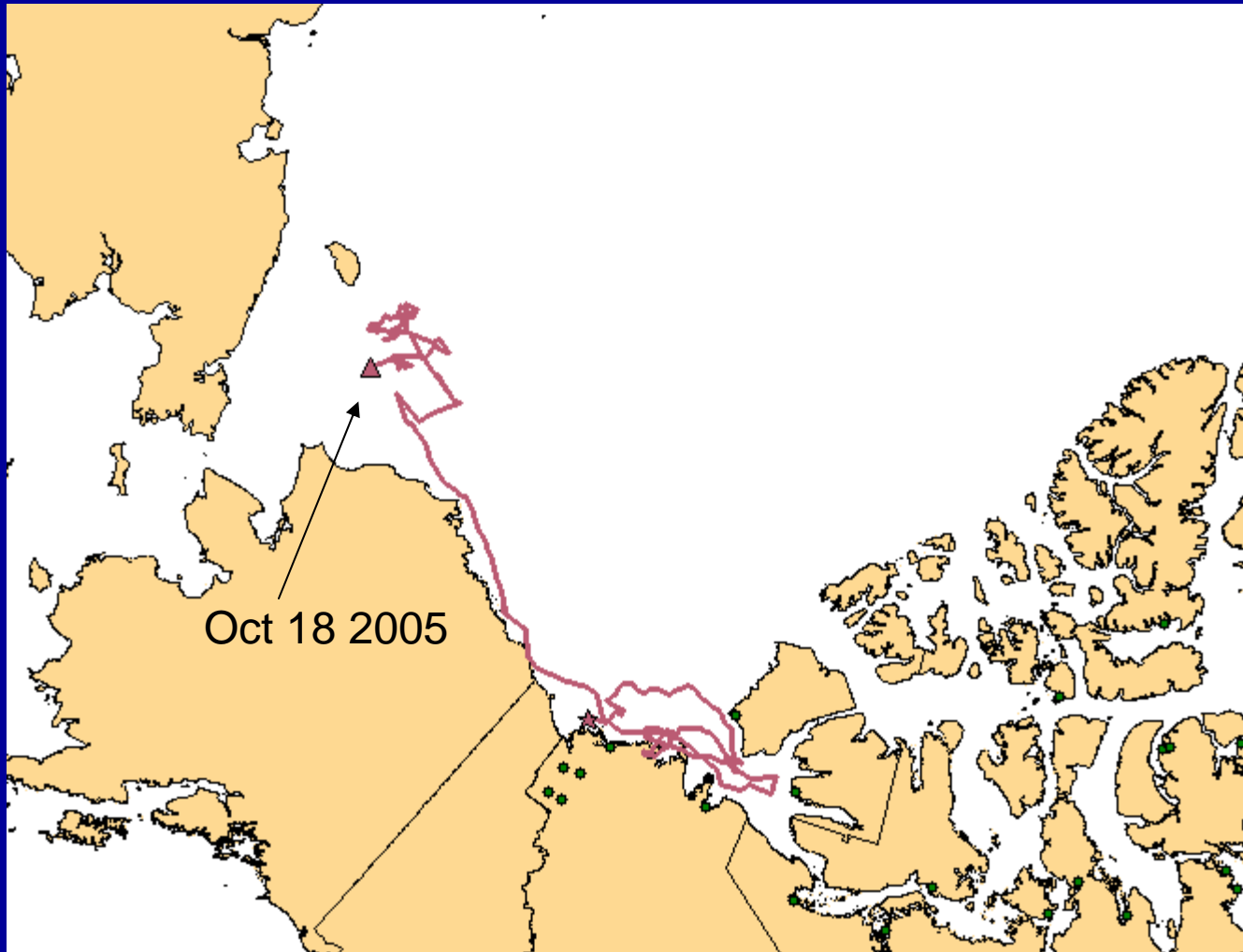
Multi Year Results: male (390cm) tagged July 04



Results 2005: Female (350cm) with Calf

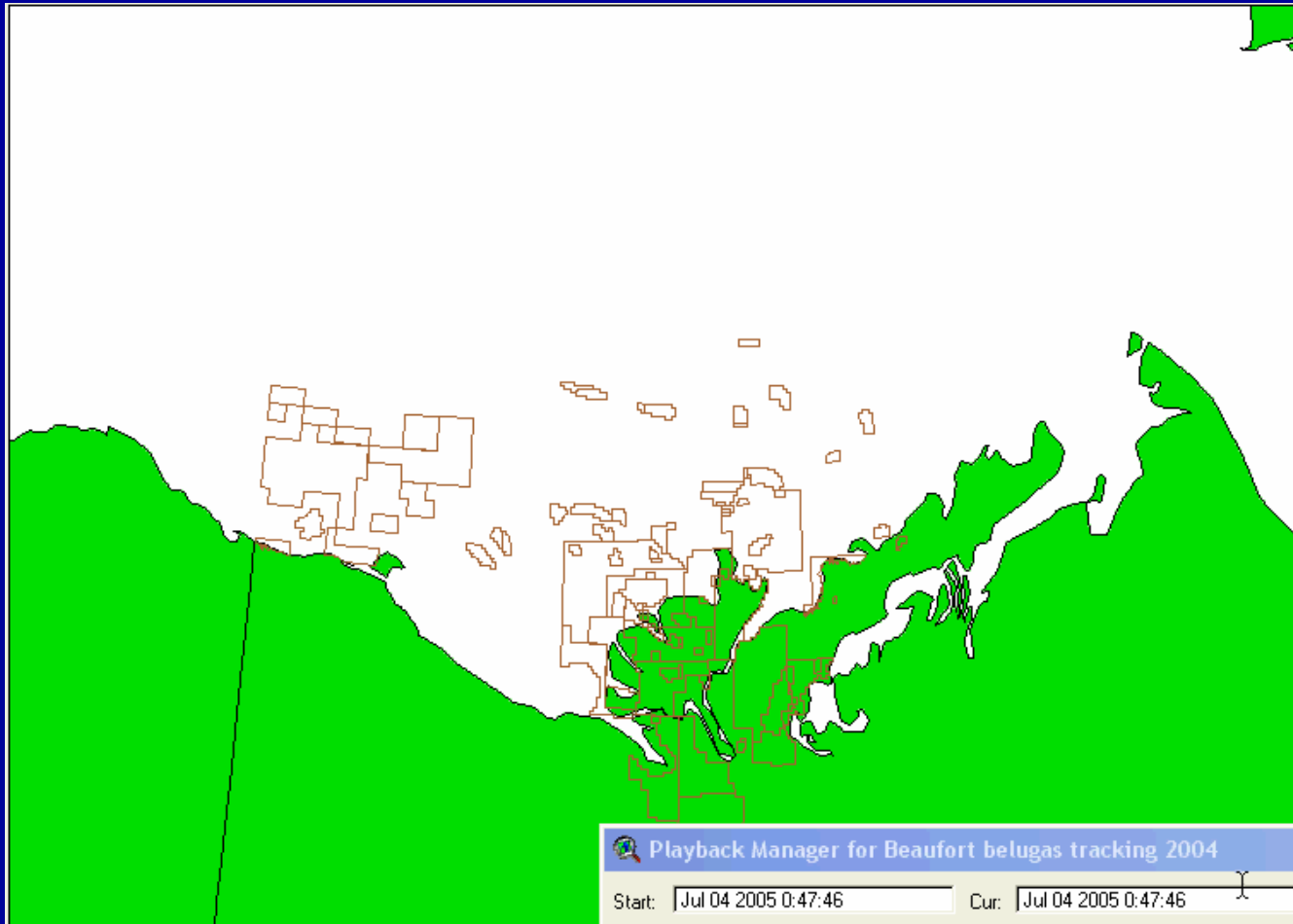


Result 2005: Female 275cm

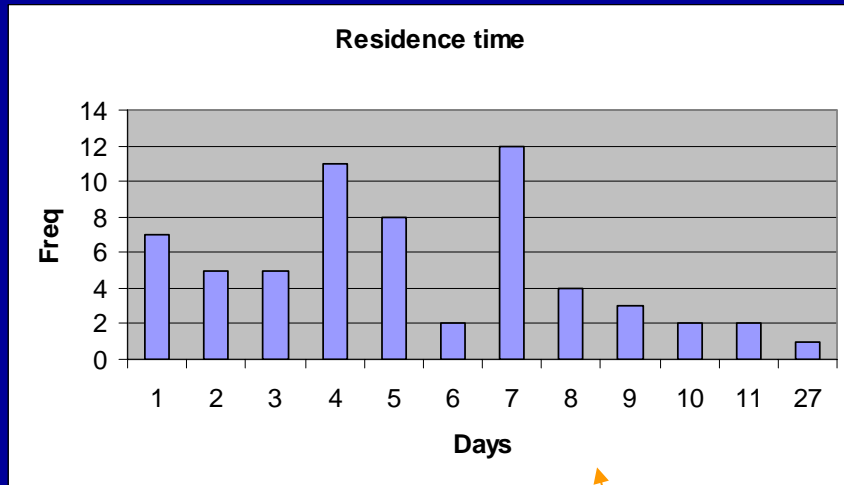


Estuarine use 93- 04

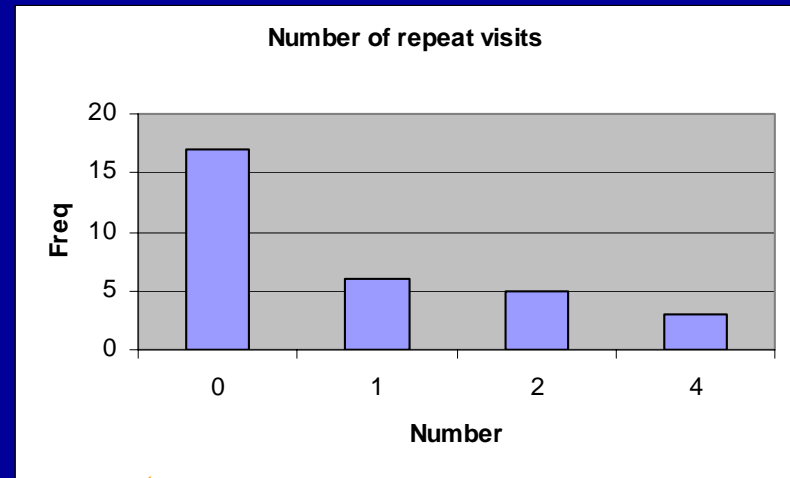
Red: Females, Blue: Males



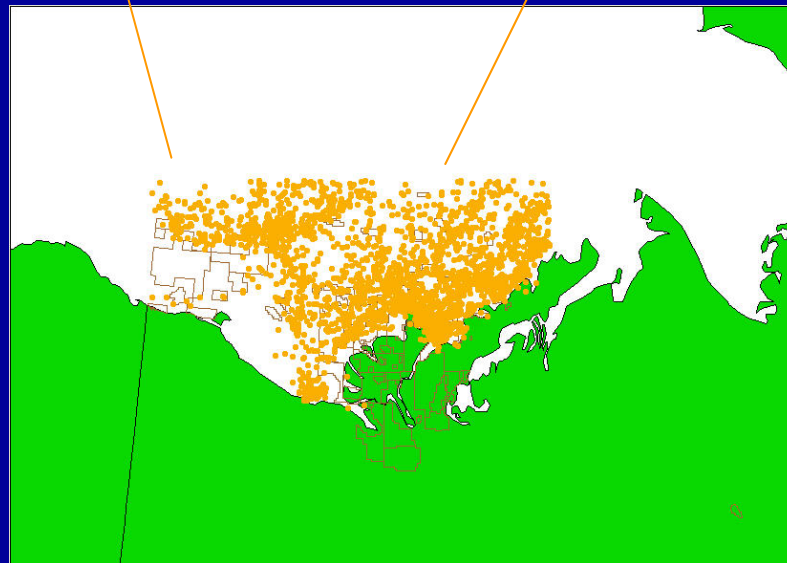
Estuarine use 93-04



Mean= 5.5 days



Mean= 1 return visit



Conclusions

- The results of these 42 belugas tracks show use in the Mackenzie estuary from early July to the end of September with few return visits.
- Offshore use is much broader than would have been expected from beluga studies in other parts of the Arctic.
- Although we had large improvements in tag duration, it was insufficient to document their spring habitat use.

A Look Ahead

- While tagging with new longer lasting tags show some promise, it may be wise to invest in other means of studying spring habitat use because tagging is not possible in spring and loss of summer tags seems inevitable.
- Spring aerial surveys, air-borne observational methods and ice-bound acoustic methods would be useful to document beluga distribution and habitat use which may be impacted by industry.

Expected benefits of research to ISR beneficiaries

- Understanding their seasonal distribution
- Habitat requirements (sea ice, bathometry)
- Establishes baseline information for NOG impact monitoring
- Helpful in understanding where and when beluga may be feeding and acquiring contaminants through diet

Expected benefits of research to scientific community

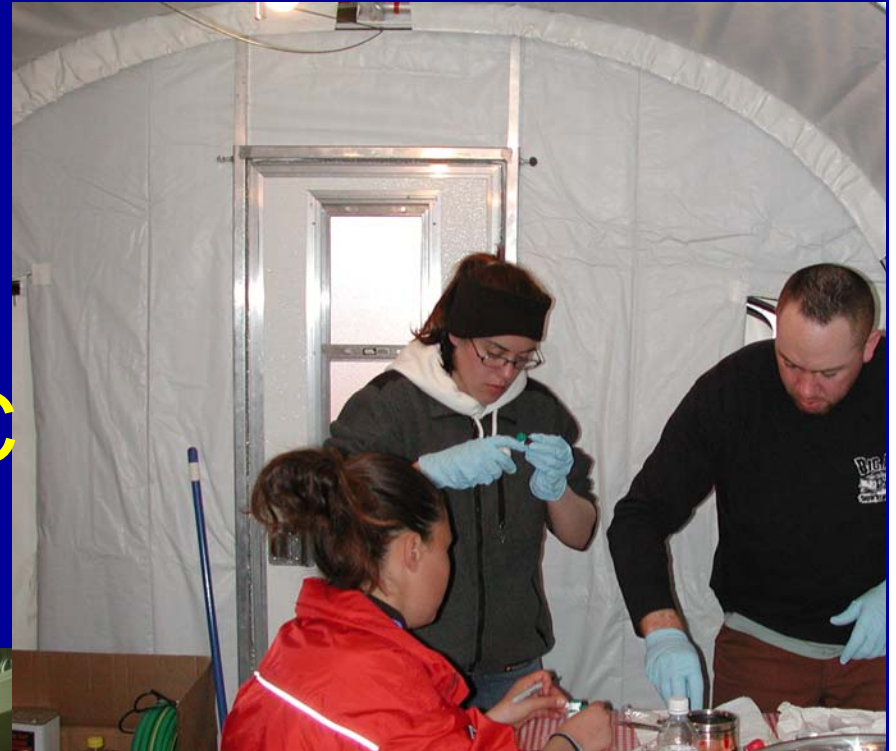
In addition to the above-mentioned benefits:

- These results contrast sharply with results obtained in sub-Arctic belugas and some parts of the High Arctic, where belugas show more sedentary behaviour in summer or even year-round. This contrast may help shed light on the role of coastal and estuarine occupation by belugas

Student Involvement



Devon
FJMC
DFO
NSERC



Tagging Camp
FWI/DFO labs-Fish analysis
Sir Wilfred Laurier
Banff ArcticNet Meeting