Boating impact on beluga in the Churchill estuary

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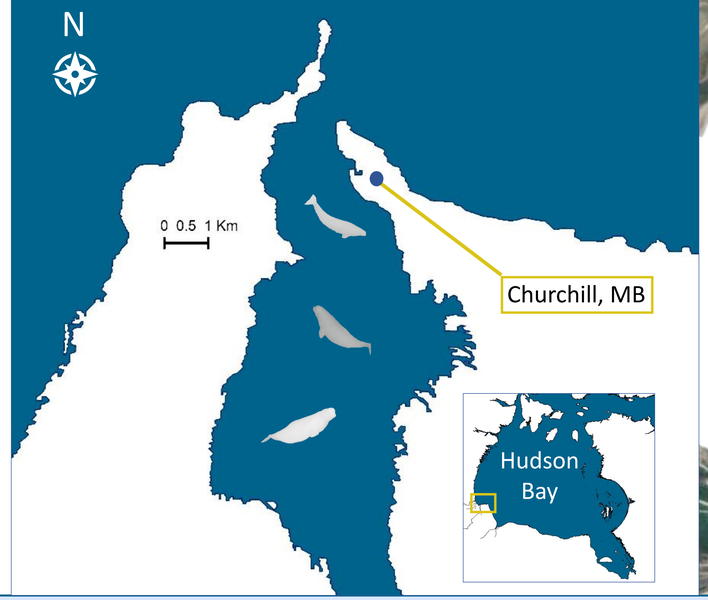
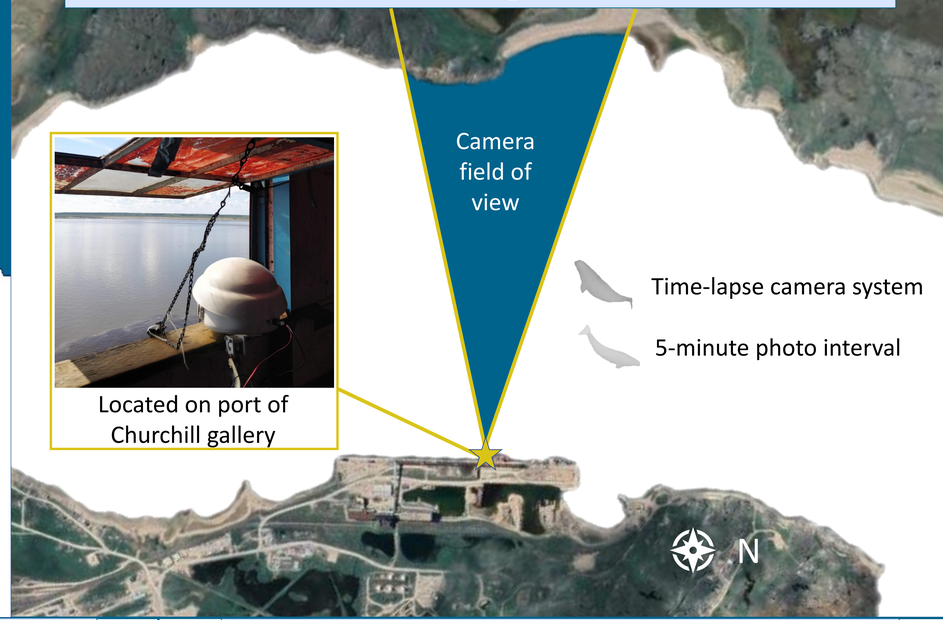
1. Purpose of investigation

Every summer thousands of belugas return to the Churchill river estuary which they share with tourist vessels. We don't know if the presence of tourist vessels has an impact on the belugas, or if beluga have become habituated. Can we determine the impact out using time-lapse photos of the estuary?

2. Study site at the Churchill estuary



3. Camera setup overlooking the Churchill estuary



4. What can we see in each photo?

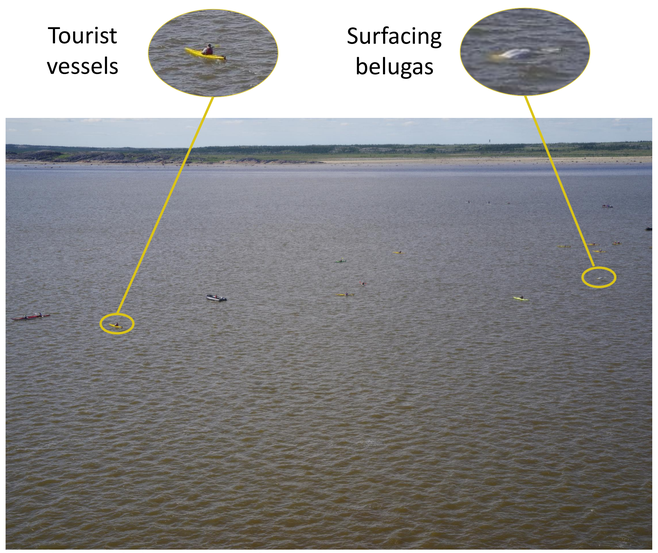
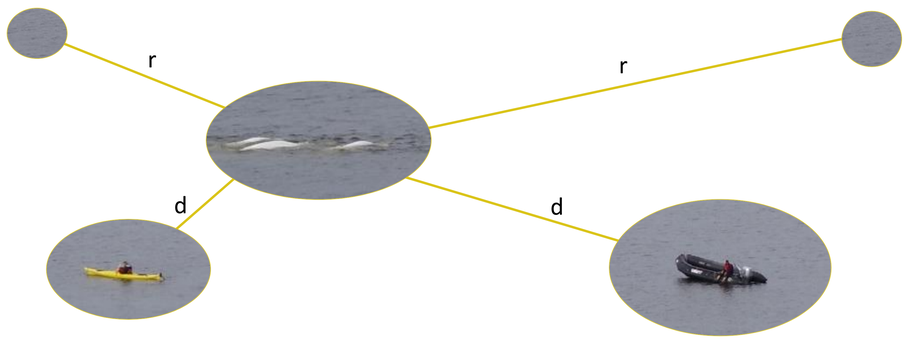


Photo of the estuary from the time-lapse camera system

5. Are boats impacting the distribution of belugas?

Distances found from photos using georeferencing points

Euclidean distance analysis will test if the average distance between the belugas and boats (d) is greater than (>), less than (<), or equal to (=), random distances (r)



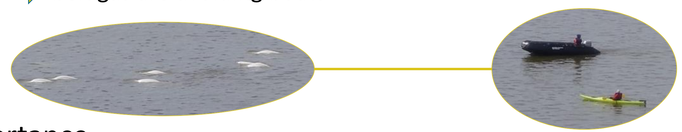
6. Why are the results important?

Results will show

d < r ⇨ belugas or boats are approaching each other

d = r ⇨ belugas are habituated to the presence of boats

d > r ⇨ belugas are avoiding boats



Importance

Give greater understanding on how boats impact the distribution of belugas in the Churchill estuary

The average distance between belugas and boats can inform approach distance regulations in the Churchill estuary

The distribution of belugas with respect to boats can be used for boating management decisions in the Churchill estuary

Land Acknowledgment: This research was conducted on the traditional territory of the Dene and Cree peoples. This beluga population is culturally significant to Nunavit and Nunavik Inuit who harvest beluga in the Hudson Bay.

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