

# Marine Acoustic Monitoring in Ninginganiq NWA

## Applicant:

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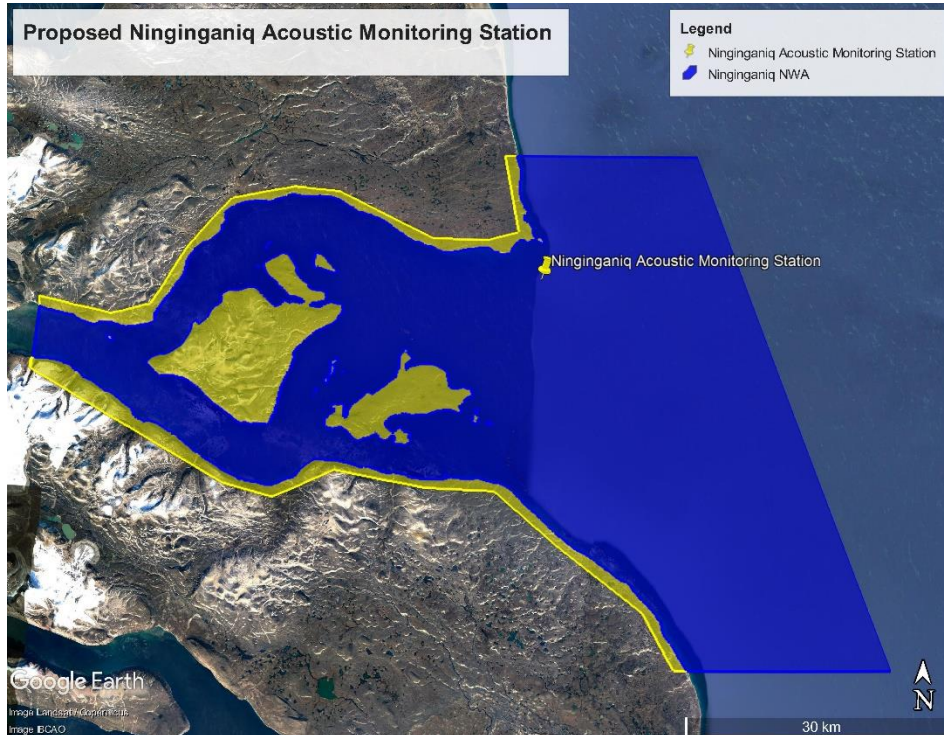
## Activity/project objectives

One of the main threats identified in the Ninginganiq NWA management plan is vessel traffic and noise pollution that results from vessel traffic. Each year, tourism vessels apply to the Ninginganiq Area Co-management Committee (ACMC)/CWS for permits to enter the area to view bowhead whales that use the area to feed and rest during the late summer and autumn. Relatively little recent information about Ninginganiq NWA exists to inform ACMC decisions with regard to permitting vessel traffic: We do not have baseline noise data or recent information about bowhead whale use of the area. A 2021 analysis of vessel traffic in the area suggests that permitted vessels are spending much more time in the area than previously thought (Halliday et al. 2021); these vessels primarily use dynamic positioning to keep stationary and we have no idea how the noise from this activity propagates in the NWA, or what its impact on whales might be.

The goal of this project is to address Ninginganiq NWA Management Plan monitoring priorities by deploying a passive marine acoustic recorder in Ninginganiq NWA in order to collect information about vocal marine animals and vessel noise in the NWA. We will use the results of this study to update the list of marine mammals that use the area, provide insight into timing of use of the area by bowhead whales and other marine animals, and assess how noise pollution from vessel traffic may affect marine mammals in Ninginganiq NWA. This information will be used to guide permitting decisions regarding vessels in the NWA, identify areas for improvement of compliance promotion activities, and create standard permit conditions for vessels entering the NWA for tourism and other purposes.

### Activity/project location

- Ninginganiq NWA: Exact location of recording unit unknown at this time, but we are aiming for the area south of Nuvutiapik (somewhere near 69.688873°N, 67.106138°W). The recorder will be deployed at a depth between 20 and 40m.



**Figure 1:** Map of Ninginganiq NWA and proposed general location of the CWS marine acoustic recording station.

### Proposed date and duration of visit:

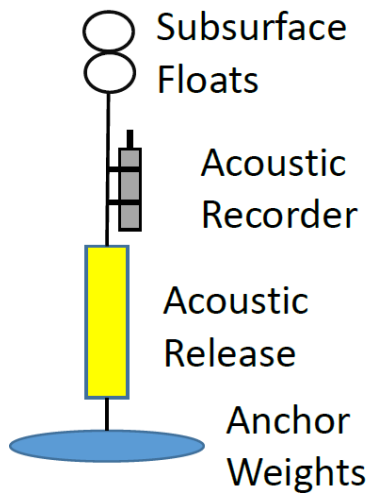
- 1 day in August or September 2022 for deployment of the recording unit
- 1 day in August or September 2023 for retrieval of recording unit

### Method of transportation:

- We plan to deploy and retrieve the recording unit on board the CCGS Amundsen (we estimate 1 day for deployment and 1 day for retrieval)

### Summary of activities and rationale:

A One Ocean Instruments SoundTrap ST600 recorder will be deployed in Ninginganiq NWA using an EdgeTech PORT MFE acoustic release and PACS deck box with MFE transducer in August/September 2022. The recorder will be deployed south of Nuvutiapik, ideally at a depth of between 20 m and 40 m using 125 lbs of cast iron gym weights (25 lbs plates stacked together) for a period of 1 year, recording underwater noise for 5 minutes every 30 minutes. The recorder will be retrieved in August/September 2023, however, the cast iron weights will remain in place, gradually and harmlessly decomposing into the water column. Deployment and retrieval will occur on the CCGS Amundsen.



**Figure 2:** Diagram showing construction of a marine acoustic recorder (credit: William Halliday, Wildlife Conservation Society).

**Waste disposal:**

- No wastes will be disposed of in the NWA.

**Potential environmental impacts and mitigation measures:**

This project will have minimal impacts to marine wildlife, however, there is a chance that deployment and retrieval activities could disturb any wildlife in the area. The CCGS Amundsen will contribute to underwater noise in the area, could potentially strike whales or other submerged marine wildlife, and will likely cause some wildlife to flee the vessel. Crew will follow guidelines provided by the ACMC for vessel operation and will attempt to avoid wildlife, in particular whales, whenever possible. Time spent in the NWA will be minimized to the time required to deploy/retrieve the recorder (estimated 1 day). It is likely that wildlife disturbed by the ship will resume normal behavior once the ship leaves the area.

Polar Bear, peregrine falcons, Ivory Gull, Ross' Gull, and Red Knots potentially occur or are known to occur in the NWA and are listed under schedule 1 of SARA. The ship could potentially disturb individuals of these species, and in the unlikely event of an accident, the ship could potentially disturb/detroy habitat of these species. These potential risks will be mitigated as described above.

The Amundsen will not enter the NWA unless it is deemed safe to do so by the crew that is experienced in navigating Arctic waters and knowledgeable in assessing ice conditions. This will reduce the risk of a serious vessel accident that could result in pollution of habitat in the NWA.

**Future plans within the protected area:**

If marine acoustic recording is found to be a viable option for monitoring vessel noise in Ninginganiq NWA and the community of Clyde River is supportive of continuing the monitoring, CWS will engage with the community about how best to continue the monitoring and involve Inuit from Clyde River in data collection, analysis, and dissemination.