

## 2021 Summary Report

### “Community-Driven Monitoring of Sea Ice and Eider Duck Populations around Belcher Islands, Nunavut” Arctic Eider Society

This project has been providing significant capacity building for Community-driven research in Sanikiluaq addressing major long outstanding gaps related to changing wildlife populations, oceanography and sea ice. The program has helped provide the first baseline data demonstrating the large-scale impact of changing oceanography in the region providing a basis for future research and monitoring. Additionally, the project is contributing to development of a novel approach to meaningfully incorporating Inuit knowledge and observations through the SIKU platform and mobile app. The program contributes to development of long-term research and monitoring for the region that will have a lasting positive impact as the community moves forward with further development of these programs and establishing long-term protection and conservation measures for the region.

The overall purpose of the project is to collect, analyze and disseminate information regarding the state and health of the sea ice ecosystems in Hudson Bay and its relationship to the socio-economic environment in the Inuit communities that rely on these habitats for subsistence and economic development. Over the last 40 years, extensive regions of the Hudson Bay watershed have been developed for hydroelectricity while climate change has similarly been affecting the hydrologic cycle. Despite concerns of local Inuit about the influence of changing freshwater regimes on sea ice habitats and wildlife, little to no base-line research and monitoring has been conducted. Our programs are aimed at furthering Inuit knowledge of environmental change by providing active hunters with oceanographic and environmental monitoring equipment as well as a mobile app designed to facilitate the documentation of Inuit knowledge and observations, to quantify the changes they are observing, linking traditional and western approaches to science. This program empowers Inuit communities to lead their own monitoring programs and provides meaningful employment and training that promotes traditional sea ice knowledge and hunting skills, while also informing wildlife co-management decisions, food security and economic development of local wildlife-based industries.

In 2020-21, Inuit hunters used the SIKU mobile app to collect observations of wildlife and sea ice conditions as well as deploying CTD (Conductivity, temperature and depth) profilers and time lapse around the Belcher Islands land fast ice platform documenting changing environmental conditions and associated distribution/abundance of wildlife. As the project is driven and led by the community and is primarily based around documenting observations as a part of regular subsistence activities, it continued to support food security and monitoring during the pandemic even while researchers were not visiting the community. All data is available on the SIKU.org platform.