

Nunavut Research Institute

*License Holder Reporting Requirements*

*For research undertaken in the 2025 calendar year*

**Project title:** *Community-Based Monitoring of Sea Ice and Eider Duck Populations Around the Belcher Islands, Nunavut*

**Project Leader(s): Full name, affiliation, and contact information (address, phone number, email) of each project leader (principle investigator and co-PIs)**

*Joel Heath, Arctic Eider Society*

*Building 410 no 234*

*Sanikiluaq, NU*

*X0A 0W0*

*joelheath@arcticeider.com*

*613-416-9607*

**Project Team: Full name, affiliation, and address (name of city/community and province/territory/state) of each member of the project team**

*Lisi Kavik-Mickiyuk, Arctic Eider Society*

*Sanikiluaq, NU*

*Julia Mickiyuk, Arctic Eider Society*

*Sanikiluaq, NU*

*Simeonie Kavik, Arctic Eider Society*

*Sanikiluaq, NU*

*Johnassie Ippak, Arctic Eider Society*

*Sanikiluaq, NU*

*Johnny Ippak, Arctic Eider Society*

*Sanikiluaq, NU*

*Josie Amitook, Arctic Eider Society*

*Sanikiluaq, NU*

**Abstract: A concise summary of what was done, found, and concluded to date, and how the results/information will be used. This summary must be translated into the appropriate dialect of Inuktitut. Suggested length: 250-300 words. \*This section will be published in the NRI's annual compendium of licensed research**

*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.*

**Key messages: Concise, plain language summary of key take-away messages of work to date, findings and conclusions. Preferably 3-5 points, in bullet form.**

- *This project is a community-driven initiative in Sanikiluaq, Nunavut, focused on understanding the changing environment of Hudson Bay.*
- *The project aims to bridge traditional Inuit knowledge with Western scientific methods by providing hunters with technology to monitor sea ice, wildlife, and oceanographic conditions.*
- *To date the project has provided baseline data on large-scale impacts of changing oceanography in the region providing a basis for future research and monitoring, and has documented Inuit knowledge and observations on changes to sea ice and wildlife through the SIKU platform and mobile app.*
- *From 2026-2027 ongoing work will continue with an increased scope of work in the Salikuit, Innalikuit (King George Islands), and Quumiutait (Sleeper Islands) (herein Quumiutait-Salikuit Region) to establish additional base-line data for Inuit-led conservation in this area based on the evolving priorities of Sanikiliarmiut.*

**Objectives: Project objectives, preferably in bullet form.**

- *Address major long outstanding gaps related to changing wildlife populations, oceanography and sea ice.*
- *Meaningfully incorporating Inuit knowledge and observations for long-term research and monitoring, and establishing long-term protection and conservation measures for the region.*
- *Provide 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.*

**Annual activities: A description of activities and methods carried out during the current reporting period. This section should answer the questions: What? Where? When? Who? How? Include**

**dates team members conducted research at remote field sites or collected data (including interviews) in communities; append a map with locations and/or coordinates of remote field sites, if applicable.**

*The following research activities occurred near Sanikiluaq, Nunavut:*

- Summer 2025 mapping of scallop beds to identify for the Qikiqtait Marine Protected Area resource inventory process (July-September 2025).
- Supporting DFO and the University of Manitoba programs (separately licensed by NRI) to sample scallops, cucumbers and other benthic invertebrates throughout the open water season as a part of their research in support of Qikiqtait and fisheries work (July-September 2025).
- Supporting DFO and University of Manitoba researchers (separately licensed) when they were in town to conduct water sampling, oceanographic work and benthic invertebrate sampling programs (March 2025)
- Johnny and Josie were regular crew on the vessels throughout the summer programs as well as youth that signed up for the youth program and other casual crew.
- Eider surveys and other nesting surveys to assess nesting colonies relative to polar bear depredation in recent years (May-July, 2025)
- Assess walrus habitat/haul out sites and other baseline data for conservation objectives (August-October, 2025)
- Ongoing resource inventory work to assess baseline ecological data for the islands (throughout 2025).

**Results and Achievements: Findings and results to date of the above activities, highlighting any key research achievements (see guide below for formatting tips regarding tables and figures).**

Resource inventory for key wildlife harvested species  
Eider surveys winter and summer  
Benthic Surveys  
Water sampling, CTD casts  
See attached report and qikiqtait.ca website

**Challenges/Obstacles: In this section, please comment on any challenges/obstacles (if any) that you experienced during this project year. If there were any actions to mitigate or resolve these challenges, please list them here. Were any concerns raised regarding the conduct of research team members or the impacts of the project?**

The project involves a whole of community approach through the Sanikiluaq Qikiqtait Steering Committee and is community led with 6 full time Inuit employees, casual workers and over 150+ individuals contributing with SIKU. No concerns were raised about project impacts.

**Expected Project Completion Date: Provide month and year of expected completion date of the project.**

Ongoing long-term project to support community priorities, Qikiqtait stewardship/monitoring, and expanded stewardship monitoring in Salikuit, Innalikuit (King George Islands), and Quumiutait (Sleeper Islands).

**Project website (if applicable): If your project has a presence on the internet, including a website and/or social media page, please provide the link and/or account handle.**

ArcticEider.com  
SIKU.org  
Qikiqtait.ca

**Citations: Please append a complete reference list if citations are used anywhere in the document.**

## **POLICY RELEVANCE**

**Does this research support policy development or decision-making in Nunavut? If yes, please describe.**

*The research is being used to inform the Inuit-led establishment of Qikiqtait and address community long-term priorities. In Sanikiluaq, over 250 community members were involved in collectively creating a seasonal resource inventory for all major marine and terrestrial species covering almost 500,000 km from over 7500 trips and 7500+ posts. This provides key baseline data for the resource inventory, engages the entire community in the process of creating Qikiqtait.*

*Research conducted by Sanikiluarmit is also used to inform decision-making at the community level including wildlife management decisions by the Sanikiluaq Hunters and Trappers Association.*

## **RESEARCH OUTCOMES: BENEFITS**

**Community engagement: Briefly list and describe any community consultation, engagement, collaboration and outreach activities that you have undertaken for the project; describe the role(s) that community members and/or specific organizations have played in research co-design and activities.**

The Sanikiluaq Qikiqtait Steering Committee hold 4+ meetings each year involving 20+ Sanikiluaq community representatives from the Hunters and Trappers Association, Arctic Eider Society, Hamlet, Qikiqtani Inuit Association, MLA for Sanikiluaq, GN Wildlife staff, youth, and Elders. These meetings are key in engaging Inuit community members in marine and terrestrial conservation, support capacity development and self-determination for future conservation related decision-making for Qikiqtait, and determining priority mechanisms for and conservation options for taking care of Qikiqtait. Interviews with Elders in Sanikiluaq is also a key part of this process, asking them to share their knowledge on how to respect and conserve wildlife across key species.

For the expanded Quumiutait-Salikuit Region a kick-off meeting for the project was in October 2025 with representatives from designated Inuit organizations (Nunavut Tunngavik Inc, Makivik, Anguvigaq), community representatives from Sanikiluaq and Nunavik communities, Arctic Eider Society, institutions of public government (Nunavut Impact Review Board, Nunavik Marine Region Planning Commission), government (Fisheries and Oceans Canada, Environment and Climate Change Canada). The meeting marked an important step toward collaborative conservation planning and coordination rooted in Inuit priorities and leadership. Future consultation and engagement will be conducted annually in Sanikiluaq with further opportunities for community inputs into the establishment process, priorities, ecological values to elevate Indigenous responsibilities for conservation and stewardship. This will include on the land place-based engagement with participating community members from Sanikiluaq and Nunavik within the Quumiutait-Salikuit Region.

**Youth engagement: Briefly list and describe any outreach, school or classroom activities that you have undertaken for the project; describe the role(s) that youth have played in your research activities.**

*The youth program involves qamutik, harpoon and other equipment making with staff members Simeonie Kavik and Johnassie Ippak. Qamutiit built with the youth program supports key research and monitoring efforts as well as youth harvesting programs. Youth in Sanikiluaq are also involved in youth harvesting programs which are anticipated to have additional land activities in the coming year.*

**Training and Employment:**

**How many Nunavummiut received training from team members? Please describe training and/or compensation provided.**

*In 2025, a number of ongoing training was conducted for full-time, casual crew as well as for other program staff from the HTA and QIA programs. Training included worker safety, SmartICE operators training for Inuit-led ice monitoring, drone training as well as specific training on research and monitoring techniques including CTDs, drop camera, and wildlife surveys. Broader training for Sanikiliarmiut was also provided for using the SIKU app to document Inuit knowledge indicators of environmental change.*

*Training is provided to over 200+ Sanikiliarmiut to collected data using the SIKU mobile app on wildlife, sea ice, surveys, and oceanography. Honoraria and incentives are provided to Sanikiliarmiut based on the daily extent of land use activities and contributions to collect knowledge and data on local ecosystems.*

**How many team members received training from Nunavummiut? Please describe training received and/or what knowledge sharing and/or skills exchange took place.**

*Team members and project partners based outside of Nunavut connected with Nunavut-based team members through regular updates and presentations on research and monitoring programs.*

**How many Nunavummiut received employment? Please describe employment type and length, role(s) and responsibilities, and compensation provided.**

| Name                | Employment type | Length | Role                            | Responsibilities | Compensation |
|---------------------|-----------------|--------|---------------------------------|------------------|--------------|
| Lisi Kavik-Mickiyuk | Full-time       |        | Inuit Nunangat SIKU Coordinator |                  |              |
| Julia Mickiyuk      | Full-time       |        | Elders & Youth Cultural         |                  |              |

|                 |                    |  |                            |                         |  |
|-----------------|--------------------|--|----------------------------|-------------------------|--|
|                 |                    |  | Programs Coordinator       |                         |  |
| Simeonie Kavik  | Full-time          |  | Qikiqtait Programs Manager | Research and monitoring |  |
| Johnassie Ippak | Full-time          |  | Nautiqsuqtiit              | Research and monitoring |  |
| Johnny Ippak    | Casual - full time |  |                            |                         |  |
| Josie Amitook   | Casual - full time |  |                            |                         |  |

**How many Nunavummiut received honoraria as research participants? Please describe method of participation (interview, observation, sample, survey, etc.), including compensation provided.**

Over 150+ Sanikiluarmit received honoraria payments as research participants to collect knowledge and data on wildlife, sea ice, surveys, and oceanography using the SIKU mobile app. Honoraria payments were based on the number of posts made on the SIKU app to collect knowledge or data to contribute to project objectives.

**Please explain how the project directly benefited Nunavut organizations and/or businesses (e.g., through contract services, local purchases, equipment donations, etc.)**

Eider down collected during harvest trips where SIKU posts were made by Sanikiluarmit was used in sewing programs in Sanikiluaq to make eider down atigii that are sold locally or used for parkas for youth program

**OPTIONAL: Nunavut Team Members, hires, and/or trainees (excluding research participants e.g., interviewees)**

***The NRI is creating an inventory of Nunavummiut who are skilled and/or interested in research. The information provided below will not be shared publicly but will support long-term capacity sharing by connecting local and visiting researchers with research talent in each community.***

| <b>Name</b>            | <b>Expertise/Skills</b> | <b>Training/interest areas</b> | <b>Contact info</b> | <b>Community</b> |
|------------------------|-------------------------|--------------------------------|---------------------|------------------|
| <b>See staff above</b> |                         |                                |                     |                  |
|                        |                         |                                |                     |                  |

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**Academic Mobility**

**If you are affiliated with an academic institution, please answer the following question: For which Level of Project(s) will the data be used? (Check all that may apply)**

- Research**
- Post-Doctoral Research**
- PhD Thesis**
- Masters (Major Research Paper)**
- Masters (Thesis)**
- Graduate Course Project/Staff/Administration Research**
- Undergraduate Honours Thesis**

**BUDGET**

**Please complete the table below to detail your projected and actual research expenditures during the reporting period.**

| <b>Category</b>                                     | <b>Planned/approved expenditure</b> | <b>Actual expenditure*</b> |
|---|-------------------------------------|----------------------------|
| Travel and accommodation                            | <b>\$10,500</b>                     | <b>\$12,000</b>            |
| Equipment, materials, and supplies                  | <b>\$32,000</b>                     | <b>\$44,300</b>            |
| Salaries/wages for Nunavut residents                | <b>\$143,1000</b>                   | <b>\$140,000</b>           |
| Salaries/wages for non-Nunavut resident researchers | <b>\$0</b>                          | <b>\$0</b>                 |
| Professional fees and services in Nunavut           | <b>\$57,200</b>                     | <b>\$52,250</b>            |
| Professional fees and services outside of Nunavut   | <b>\$35,000</b>                     | <b>\$34,000</b>            |
| <b>Total expenditures</b>                           | <b>\$277,800</b>                    | <b>\$282,550</b>           |

**List the total \$ amount of funding from each funding source for your full research program, including in-kind support**

*QIA/HTA Programs \$214,000 ; 63,800 ECCC funding. \*estimate pending final accounting in March*

**RESEARCH OUTPUTS / REPORTING TOOLS**

**What research outputs were generated? Please list below and append copies of each. Specify which outputs (if any) may be made public on the NRI research licensing database.**

Community data outputs are provided with full ownership, access and control via SIKU platform for community, the outputs are the communities not academics

**Have peer-reviewed manuscripts been published as a result of your project? If Yes, complete the following table:**

| <b>Full citation</b> | <b>Publicly accessible/free to access (Y/N)</b> | <b>Link (if available) and DOI (if available)</b> |
|----------------------|---|---|
|                      |   |   |
|                      |   |   |
|                      |   |   |

**If No, do you intend to submit a manuscript (or manuscripts) for peer reviewed publication?**

This is not an academic project, future outputs may be submitted for publication on community approval. Academic projects are licensed separately.

**Were non-peer reviewed materials produced to either communicate or synthesize results to the public? Examples of these materials include (but are not limited to): websites, reports, brochures, podcasts, webinars, presentations, non-peer reviewed publications, etc.**

**If Yes, complete the following table:**

Lucassie Arragutainaq and Lisi Kavik-Mickiyuk present outcomes along with Joel Heath to a wide variety of webinars, conferences and otherwise each year.

| <b>Title</b>  | <b>Description of Materials</b>  | <b>Link (if available)</b>  | <b>DOI (if available)</b> |
|---|--|---|---------------------------|
| Canadian Museum of Nature and CHARS Qikiqtait Exhibitions | Exhibition at the Canadian Museum of Nature in the Polar Knowledge Canada Northern Voices Gallery through September 2027. A smaller exhibition featuring Qikiqtait also took place at CHARS in | <a href="https://nature.ca/en/about-the-museum/media-centre/qikiqtait-new-exhibition/">https://nature.ca/en/about-the-museum/media-centre/qikiqtait-new-exhibition/</a> |                           |

|   |   |   |  |
|---|---|---|--|
|   | Cambridge Bay.  |   |  |
| SILA for SIKU Launch! New Weather Tools, Services and Indigenous Environmental Terminology for SIKU 2.0   | Launch of Sila for SIKU weather features at Arctic Change 2024                          | <a href="https://event.fourwaves.com/ac2024/schedule/7f17d374-cadb-4996-8336-4241da74e36a">https://event.fourwaves.com/ac2024/schedule/7f17d374-cadb-4996-8336-4241da74e36a</a>           |  |
| Best Practices for Community-Based Research   | Workshop co-hosted by Arctic Eider Society at Arctic Change 2024                        | <a href="https://event.fourwaves.com/ac2024/schedule/f318e8de-b6a7-4f97-9660-be8d7de6013d">https://event.fourwaves.com/ac2024/schedule/f318e8de-b6a7-4f97-9660-be8d7de6013d</a>           |  |
| Inuit Harvest Data in Qikiqtait Protected Area Development  | Regena Sinclair, Master's Thesis, published January 2024                                | <a href="https://macsphere.mcmaster.ca/bitstream/11375/29470/2/Sinclair_Regena_M_202401_MA.pdf">https://macsphere.mcmaster.ca/bitstream/11375/29470/2/Sinclair_Regena_M_202401_MA.pdf</a> |  |
| Connecting Local Observations to Global Biodiversity Monitoring under CAFF: Exploring SIKU Data and the Circumpolar Biodiversity Monitoring Program | Joshua Komngapik, Donal McLennan, Courtney Price, Fellowship Report, Draft (2024)       | <a href="https://oaarchive.arctic-council.org/items/48087d11-5356-4b4c-9682-f9dfd48b484c">https://oaarchive.arctic-council.org/items/48087d11-5356-4b4c-9682-f9dfd48b484c</a>             |  |
| Qikiqtait: Progress On An Indigenous-Led Protected Area For The Belcher Islands Archipelago.  | Canadian Association of Geographers. Presentation. Memorial University, St. John's, NL. |   |  |

***Did your project develop a communications plan? Please describe communications/reporting tools used, and list the target audience for each and/or who requested which.***

*Engagement with the public in Sanikiluaq is accomplished through ongoing communications activities and public meetings with the Sanikiluaq Qikiqtait Steering Committee through a whole of community approach.*

***How were Nunavummiut credited and/or acknowledged in all project outputs, such as co-authorship, participant biographies, article acknowledgements, etc.***

*Co-authorship on conference presentations, co-presenting and Lucassie Arragutainaq, in particular, provided leadership and acknowledgement in all outcomes.*

## **DATA AND INTELLECTUAL PROPERTY**

**Did you enter into a research agreement, data-sharing agreement and/or intellectual property rights agreement with a community and/or designated Inuit organization (DIO)? If yes, please explain.**

*Yes, Sanikiluaq maintain intellectual property ownership through an informed data stewardship framework. The Arctic Eider Society and SIKU respects Indigenous data sovereignty and knowledge frameworks and strives to protect it from misuse while encouraging its mobilization for the benefit of Indigenous self determination.*

**Do intellectual property rights apply to your research? If yes, please explain.**

*Individual users in Sanikiluaq contributing data through SIKU on wildlife and sea ice own their data. Raw data is stored on Canadian servers and is accessible to individual users (i.e., their own contributed data). Sanikiluaq choose whether to steward data Arctic Eider Society through a non-exclusive licence to use the data specific to this project only (AES doesn't own any other data on SIKU aside from that shared to this project through informed consent).*

**Who owns the data? Has the raw data been shared with the appropriate community and/or DIO? If yes, how? How is data security and storage handled by community-based co-owners?**

*Individual users in Sanikiluaq contributing data through SIKU on wildlife and sea ice own their data. Raw data is stored on Canadian servers and is accessible to individual users (i.e., their own contributed data). Sanikiluaq choose whether to steward data Arctic Eider Society through a non-exclusive licence to use the data for this project.*

**Where is the data stored and will the data be destroyed within a set timeframe?**

*Data is stored on secure Canadian servers and in on-site backups. There is no set timeframe for data to be destroyed as users can retain their data for as long as they like. Users may delete posts and may also contact the Arctic Eider Society and SIKU to request the removal of posts and data associated with this project*

**Is the data trackable and/or available in a public data repository? If yes, please provide the appropriate information and/or link to ensure the findability and accessibility of the data.**

*The data is trackable within SIKU, however users may choose various privacy settings include making data public (within SIKU), making data only trackable to project members, or making data only trackable to the contributing user. The public data repository is available to SIKU users through SIKU.org or the SIKU mobile app (Android and iOS) for their own data.*

**Please append a copy of your data management plan.**

## CLIMATE CHANGE

Is your research about climate change (causes, impacts, mitigation, adaptation, etc.)? If yes, explain.

*Yes, climate impacts. Knowledge and data collected by Sanikiluarmitut using SIKU is providing quantitative support for inter-annual climate trends identified by elders and harvesters in real-time in a way that can not be ignored by policy makers as being anecdotal, and that demonstrates the ability of Inuit to lead systematic climate change analysis of biological and environmental data at scale. This is also being demonstrated for large-scale stewardship through the SIKU Goose Watch and Ice Watch at scale across Inuit Nunagat, which is outside the scope of the current report but builds on outcomes for monitoring established for Qikiqtait.*

## **PHOTOGRAPHS**

***If possible, please provide high-resolution photos of licensed research activities that NRI may use in communication materials, organizational reporting, and other promotional purposes. The photographer and all recognizable people in each photo must sign the attached Photo and Video Release form. Please also complete the table below for each photo provided and submit to NRI along with all required NRI photo release forms. The photographer/owner will be credited in all uses of the photograph(s).***

Please see [qikiqtait.ca](http://qikiqtait.ca) website for available photos on request

| File name | Location | Description | Subjects | Photographer /owner | Date |
|-----------|----------|-------------|----------|---------------------|------|
|           |          |             |          |                     |      |
|           |          |             |          |                     |      |
|           |          |             |          |                     |      |