



Canadian
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Coalition

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UNDERSTANDING OCEAN
LITERACY IN CANADA

**INUIT NUNANGAT
REGIONAL REPORT**

JUNE 2020



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Background Photo: Original art work
"One with the Ocean" by Nunavut artist, Becky Okatsiak

EXECUTIVE SUMMARY

Heading Photo: Ibyuk Pingo near Tuktoyaktuk, Inuvialuit Settlement Region
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This report is one of five regional reports that support a Canada-wide study conducted by the Canadian Ocean Literacy Coalition (COLC) to establish a baseline seascape of ocean literacy (OL) in Canada. The study's results will be used to develop an evidence-based national OL strategy and implementation plan.

This report highlights the key messages captured from discussions on OL from the Inuit Nunangat region, which took place from September 2019 to April 2020. Across Inuit Nunangat, made up of the Inuvialuit Settlement Region, Nunavut, Nunavik, and Nunatsiavut, there is a deep connection to the ocean that is linked to most aspects of daily life. In Inuit Nunangat, the ocean encompasses liquid form, sea ice, coastal areas, and even land. Cultural ties to the ocean are rooted in Inuit legends, and are linked to skills, such as harvesting, that have been passed on between generations for thousands of years. Knowledge and stewardship of the ocean (including land) have long been shared and practiced as part of Inuit Qaujimajatuqangit (IQ), a term that encompasses “the entire realm of Inuit experience in the world and the values, principles, beliefs, and skills which have evolved as a result of that experience¹.” While OL is practiced heavily in Inuit Nunangat, use of the term ‘ocean literacy’ is rare, and for some, is considered culturally inappropriate. Nonetheless, many successful initiatives in Inuit Nunangat exist that promote and strengthen Inuit knowledge, connection, use, and conservation of the ocean.

OL-related initiatives identified in Inuit Nunangat are primarily Inuit-led. In addition to this key factor, determinants for success include meeting the needs of communities, long-term relationships and investments in people, land-based programs, and adapting technology to support Inuit needs. A few key barriers were also identified, including funding and logistical challenges to living and working in Inuit Nunangat; technology and integration with life in remote communities; access, ownership, and storage of data; and jurisdictional, institutional, and systemic barriers.

Several ways to further strengthen and support Inuit-led ocean learning, engagement, and knowledge sharing initiatives were identified, including: reframing OL terminology to include Inuit perspectives; making long-term investments in programs and people; empowering Inuit as decision-makers; increasing connections within, among, and outside of communities; and delivering continued funding for culturally relevant, place-based OL initiatives.

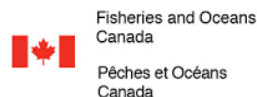
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* The above partners directly contributed to supporting this region's research. See Appendix F for complete list of all funding partners.

INTRODUCTION:

FRAMING OUR CANADA-WIDE STUDY

Canada has the longest coastline in the world and jurisdiction over an area of ocean equivalent to about 55% of the country's landmass². For the 6.5 million Canadians living in a coastal zone³ the ocean is deeply embedded in the fabric of community livelihoods, food security, and well-being. Across Canada, the ocean is a major economic driver, the backbone of weather and climate systems, and a recreational playground for millions of Canadians and global visitors. Ocean conservation is increasingly highlighted as a priority, as signalled by Canada's pledge to establish marine protected areas covering 25% of our ocean waters by 2025 and 30% by 2030⁴.

The ocean space is not just about species and industries; it is also about people, livelihoods, relationships, and identity. A knowledgeable and engaged citizenry is required to support and ensure ocean and community health, sustainable ocean economies, and social equity.

The [Canadian Ocean Literacy Coalition](#) (COLC) is an alliance of organizations, networks, institutions, and communities working together to better understand and advance ocean literacy (OL) in Canada. Widely accepted internationally, OL is defined as “**understanding our impact on the ocean and the ocean's impact on us**”⁵. COLC's primary project, since its inception in 2018, has been to lead a Canada-wide research initiative to better understand Canadians' varying relationships with the ocean and to examine how OL is understood and practiced across different

regions and sectors. The aim of this work is to establish a baseline *seascape* of OL in Canada, and in so doing, to co-develop an evidence-based national OL strategy and implementation plan.

This report presents the findings for the Inuit Nunangat Region. It is one of a set of five regional reports and one national report that are available at www.colcoalition.ca.

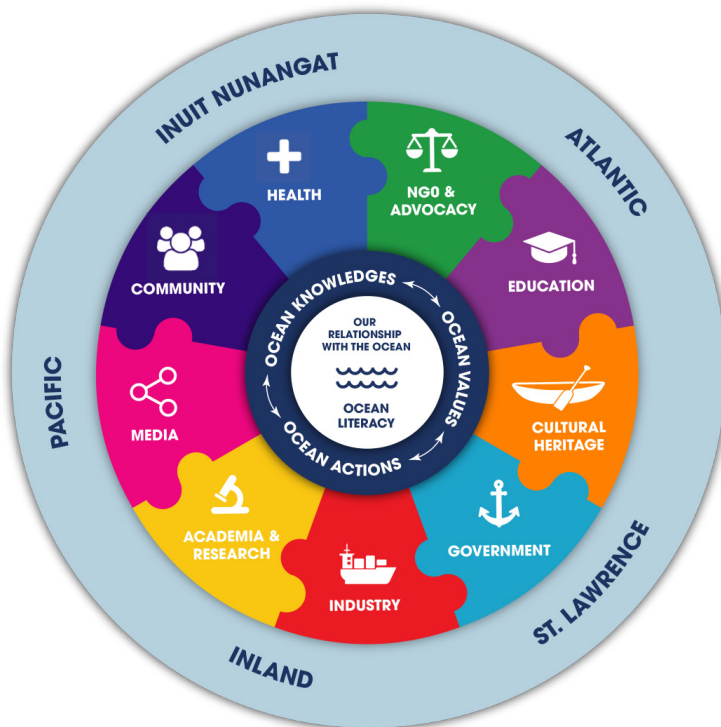
OUR APPROACH AND METHODS

Through a collaborative research approach, and drawing on qualitative and quantitative methods, the study focuses on five Canadian regions (Pacific, Inuit Nunangat, Atlantic, St. Lawrence, and inland Canada), as well as nationally. The study moves beyond an examination of OL in the context of formal education and youth to consider the practice of OL within nine sectors: Government, NGO and Advocacy, Academia and Research, Industry, Education, Community, Media, Cultural Heritage, and Health.

Data was primarily collected from participants who are directly engaged in OL, or in other ocean-related work that (1) advances **ocean knowledge** systems (e.g., scientific, Indigenous, expert, local, etc.), (2) strengthens **ocean values** (e.g., life sustaining, economic, personal, communal, etc.), and/or (3) implements **ocean actions** (i.e., individual behavioural change, social justice actions, policy changes, etc.).

THE STUDY WAS GUIDED BY THREE CENTRAL RESEARCH QUESTIONS.

- 1** What is the current understanding and state of OL in Canada?
- 2** What are the current strengths and barriers of OL in Canada?
- 3** What are the key recommendations to advance OL in Canada?



- 5** REGIONS
- 9** SECTORS
- 3** DIMENSIONS OF OL

Figure 1: The conceptual framework used for the study, integrating the five regions, nine sectors, and three dimensions of OL – ocean knowledge, values, and actions

Multiple methods were used to identify perceptions of and approaches to OL in the Inuit Nunangat region. An initial document scan was conducted of suggested reports (e.g., research documents, program information, community initiatives) that focused on Inuit knowledge, connection, use, and conservation of the ocean (Appendix A). The reports were recommended during informal conversations with Inuit colleagues and their southern partners with whom strong relationships and trust were established. Similarly, any OL-related initiatives that were identified during the above conversations and/or already known to the research team were documented and

categorized based on information provided in publicly-available program documents and websites (see Appendix D for a full list of all assets documented). Finally, formal interviews were conducted with self-identified and/or recommended program leaders or participants, as well as keen community members, guided by key questions (see Appendix C), and then coded and categorized into key themes. A convenience sample of self-identified participants within the COLC network was used along with a snowballing technique to further expand the initial interview participants (i.e., participants suggested others to interview). This report primarily focuses on data collected from interview participants who are directly engaged in ocean and land-based learning, ocean conservation, and/or ocean research and policy related work. Data was collected from a random sampling of the Canadian public for the national poll conducted by Nanos Research and for the arts-based results. See Appendix E for further details on research methodology and ethics, and for links to research tools.



Eight data collection methods were used in the study. Table 1 below provides the sample total for each method, nationally and for the Inuit Nunangat Region.

TABLE 1: COLC RESEARCH BY THE NUMBERS

Data Method	Description	National	Inuit Nunangat
Canadian Ocean Literacy Survey (COLSurvey)	National online survey with COLC members' networks & interested Canadians (For Findings Report PDF)	1,359 respondents	12 (NU=5; NWT=7)
Nanos Poll	National poll conducted with random sample (For Findings Report PDF)	1,010 respondents	0
Document Scan	Documents and reports reviewed for context	332 total documents (256 regional/ 76 national)	41 (Appendix A)
Interviews	Semi-structured, 45 minutes (see Appendix C)	188	26 participants* (see Appendix B)
Ocean Literacy Mapping Survey (OLMSurvey)	Organizational-level online survey for OL providers	136 respondents	201 programs/ initiatives from 72 organizations* (Appendix D)
Youth Workshops	Researcher facilitated, semi-structured focus groups (For Youth Report PDF)	3 workshops – 210 youth total	<i>National scale only</i>
Arts-based engagement	Public interactions (in-person and online) with artwork and research question (For Arts Report PDF)	5 interactive art works - 250 responses	1 art work 24 responses
Media & Social Media Scan	Coarse-scale analysis of topics discussed in Canadian media & Twitter (For Media Analysis Report PDF)	1,253 articles; 77 influential accounts (800+ followers)	<i>National scale only</i>

**OL-related initiatives were documented and categorized based on information provided in program documents and websites. See Appendix D for a full list.*



INUIT NUNANGAT :

BACKGROUND CONTEXT

*For us a day of hunting or fishing brought us the most succulent, nutritious food. Then there would be the most intense joy as we gathered together as family and friends, sharing and partaking of the same animal in a communal meal. To live in boundless landscape and a close-knit culture in which everything matters and everything is connected is a kind of magic. Like generations of Inuit, I bonded with the ice and snow⁶.” - Siila Watt-Cloutier, O.C. Inuit advocate and author of *The Right to Be Cold**

Inuit Nunangat means ‘homeland’ in Inuktitut, one of the principal Inuit languages in Canada, including the water, ice, and land across four land claim regions; the Inuvialuit Settlement Region (Northwest Territories), Nunavut, Nunavik (Northern Quebec), and Nunatsiavut (Northern Labrador). This region covers 35% of Canada’s landmass and over 50% of Canada’s total coastline⁷. Inuit have lived in this region for roughly four thousand years, inhabiting nearly the same areas as today⁸. Across Inuit Nunangat, there is a population of 56,585 (47,330 Inuit)⁹ that lives in 51 communities, most of which are in remote locations, and nearly all are located on the coast, only accessible by plane⁷ or boat. In these communities, the majority of the population identify as Inuit: 89.9% in Nunavik, 89.4% in Nunatsiavut, 84.7% in Nunavut, and 58.3% in the Inuvialuit Settlement Region⁹.

The ocean is integral to daily life in the region. The cold harsh climate means the ocean’s surface is frozen up to nine months of the year, effectively turning the ocean into land, used for travel¹⁰. Country foods, foods locally harvested from the land or ocean, are still an important contribution to Inuit diets, nutritionally and culturally^{11,12}. Significant changes in Inuit society have occurred since the mid-twentieth century and include relocation to permanent settlements, institutionalized education, and participation in the wage economy. Despite these changes, Inuit culture and language remain strong. Inuit Qaujimajatuqangit (IQ) is a term to describe Inuit epistemology, which translates as “that which Inuit have always known¹³.” IQ encompasses “the entire realm of Inuit experience in the world and the values, principles, beliefs, and skills which have evolved as a result of that experience¹.” IQ directly relates to Inuit’s understanding of, and relationship to, the ocean (including ice, land, and coasts).

“Inuit are a marine people. Our culture and way of life is inextricably linked to the ocean. The marine environment is central to our identity, the way that we perceive the world, and the way that we think of ourselves¹⁴.” Natan Obed, President, Inuit Tapiriit Kanatami

Original art work “One With the Ocean” by artist Becky Okatsiak as part of this study.

"Nuliajuk, or Sedna, is one of many legends/myths from our Inuit culture. Nuliajuk, our sea goddess, was an Inuk woman who was thrown into the sea after she refused to marry. She is the key to how our sea mammals came to form and live. She is the forefront to our connection on with the salt waters". - Becky Okatsiak



Writing is different from oral telling. Even today there is a great deal of fear associated with the idea of writing down what IQ is and recording on paper the stories used to illustrate how IQ works¹³."

Although the term ‘ocean literacy’ is not commonly used by Inuit or Inuit partners (see next section), various forms of OL are practiced in the region: OL is integrated into the region’s cultures, nutrition, and way of being. Including Inuit voices and perspectives in an emerging national OL strategy is critical. In particular, this report aims to: 1) highlight the vast ocean knowledge, stewardship practices, and community-based ocean initiatives held within Inuit Nunangat and to amplify these initiatives at a national level; 2) better understand and support community-based ocean initiatives that strengthen Inuit and community priorities; and 3) ensure Canadians from coast to coast to coast better understand, learn from, and respect the many perspectives on ocean relationships and uses.

Inuit Qaujimajatuqangit (IQ): The 8 guiding principles for Inuit¹⁵

- [illegible]

Historically, IQ was passed through oral history, as Inuit did not keep written records. “Writing about IQ is not easy... Communication, like so many other things in Inuit Culture was regarded as relationship. One cannot have a relationship with someone who wrote a book hundreds or thousands of miles away.

EXPLORING THE TERM 'OCEAN LITERACY'

Currently, the term 'ocean literacy' is ineffective at capturing the relationship between Inuit and the ocean. As renowned Inuit leader, Mary Simon shared in a recent publication¹⁶:

"Over millennia, there has been little need for any formal discussion of "ocean literacy" as Inuit lived, breathed, and ate near or from the ocean and lived in relative harmony with animals and seasons. Inuit language interweaves values and numerous words for elements of the ocean that are based on thousands of years of experience, knowledge, and observations."

However, the dimensions of OL as defined in the context of this study - ocean knowledge, ocean values, and ocean action (i.e., conservation, sustainable harvesting, etc.) - are well used and central to life in Inuit Nunangat. Interestingly, of the 41 documents and 201 ocean-related initiatives (e.g., programs, resources, tools, websites) reviewed as part of this study, none were framed around the term 'ocean literacy'. Likewise, of the 26 interviewees, only 7.7% (2 of 26) indicated that they use the term, 77% (20 of 26) are unfamiliar with the term or have never heard it, and 15.4% (4 of 26) are familiar with the term but do not regularly use it. Below is a sample of quotes from interview participants as to how OL is perceived by Inuit, by individuals working for Inuit organizations, or by partner organizations. These shared perceptions also provide insights as to how OL could be better defined and applied to be more inclusive of IQ and to value ocean-related skills and cultural ways of being, not just ocean (science) knowledge.

"The land – it's lands, waters, air, ice and everything with it. And it's not a literacy, it's just a way of being. It's inherently in you. It's a deep identity. It's a different understanding of what kind of ocean means to people and how intimately connected it is to your identity. And maybe it [OL] is really just about understanding the multitude of ocean stories." – **Ashlee Cunsolo, Director, Labrador Institute of**

"You should be aware and know what's going on in your backyard, in your area." - **Trevor Lucas, Sachs Harbour Hunter**

"One thing I always tell people about the ocean is how important it is to keep our ocean clean, because everything depends on it. You talk about caribou and people don't really realize that they need the ocean too, the salts the ocean has for your caribou in the wintertime, they go out on the sea ice and they dig down for ice and they lick the salt from the surface of the ice. People don't know that unless you tell them. One thing that people have to remember is our people are originally from the ocean, and everything – our culture– is what we learn from living in the ocean or on the coast. We are less connected to our heritage now than we were before. So that's sort of been lost and a lot of people own boats and stuff and they never go to the coast. They just don't know how to harvest a whale and how to prepare it." - **Douglas Esagok, Inuvik Hunter and 2015 ArcticNet Inuit Recognition Award Winner**

"It's [OL] inherent in the work. It sort of flows throughout without us being conscious of it, because it's just so important. From a risk perspective, it's fundamental for safety and when you look at it from a cultural perspective, it's fundamental to wellbeing. Inuit are the ones that parallel the marine environment with this idea that it's an extension of the land and of their sacred spaces. We don't use the terminology at all, but it makes more sense over time." - **Jackie Dawson, Professor, Arctic Corridors Project Lead, University of Ottawa**

"I don't think about, 'How are we connecting to the ocean through this work?' It's more inherent. For example, the focus of our collaborative work might be around 'How do we support harvesting?', and those harvesting activities imply intergenerational knowledge transfer, time on the land, bringing youth on the land – all of those aspects that are related to or that help to support a strong relationship with the ocean." - **Sonia Wesche, Assistant Professor and Inuvialuit Food Security Researcher, University of Ottawa**

There is a need to build capacity and support jobs in communities so people can stay in their communities. Inuit are a marine people so have a great deal of understanding about the Arctic ocean and this knowledge system needs to be valued and integrated into ocean literacy." – **Stephanie Meakin, Consultant, Inuit Circumpolar Council**


There is this tremendous amount of ocean literacy that is framed differently, but is equally, if not more important than some of the other ways we might measure ocean literacy in other parts of the country. And is certainly utilized by people in those communities, but very underutilized by others who may be able to learn from it." - **Eric Solomon, Co-Lead of Ikaarvik and Director of Arctic Programs at Ocean Wise.**











"Knowledge mobilization is probably a better descriptor than OL. We recognize the links between the things that people want to know and how it is tied to their quality of life, and in many cases, their survival or ability to thrive long-term. For me OL is to understand, value, respect, and care for the ocean, the systems that support it, and the systems that it supports." - **Timothy Straka, Policy Analyst, Polar Knowledge Canada**

"I actually think ocean literacy today should include change. Why are things different than they were before." - **Dustin Whalen, Physical Scientist, Geological Survey of Canada Atlantic Natural Resources Canada**

"There's so much knowledge about the oceans and other components of wildlife in the north that I think we don't have in the south just because we're not living [on the land] there every day. It's [OL] about how knowledge is shared and how that's very different in different places in Canada." - **Mark Basterfield, Director of Wildlife Management, Nunavik Marine Wildlife Regional Board**

MAPPING OCEAN LITERACY INITIATIVES: ORGANIZATIONS

OL Initiatives Engagement Type		Number of Organizations
 Information Resources		32
 Interactive Activities		51
 Expanding Capacity		36

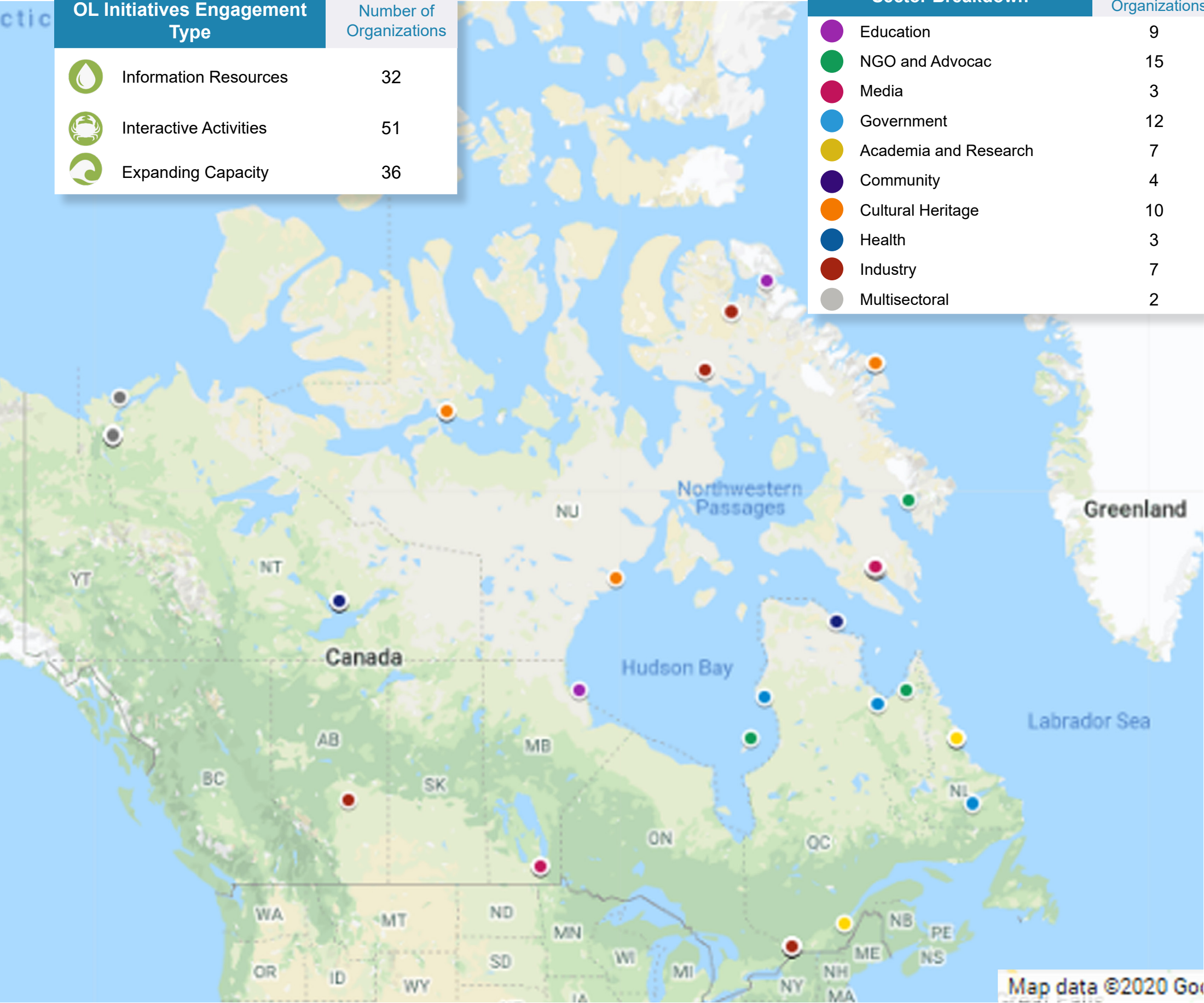
Sector Breakdown		Number of Organizations
 Education		9
 NGO and Advocac		15
 Media		3
 Government		12
 Academia and Research		7
 Community		4
 Cultural Heritage		10
 Health		3
 Industry		7
 Multisectoral		2



MAPPING OCEAN LITERACY INITIATIVES

Mapping OL initiatives in Inuit Nunangat included many approaches, such as inputting initiatives identified by interview participants (i.e., their own programs, partner or recommended programs), websites and documents of organizations that were known to the research team, and ongoing feedback from key individuals (i.e., Inuit researcher advisors for the four regions, government organizations, and COLC partners). In total, 201 initiatives from 72 organizations were identified in the region across the nine sectors. See Appendix D for list of all 72 organizations included in the Inuit Nunangat OL map.

The map to your left serves as a sample of the emerging digital Inuit Nunangat OL map. The Map aims to highlight the kinds of projects that are currently taking place across the region, offer possibilities for collaboration and networking, and identify gaps/opportunities to be filled by future initiatives. Click [here](#) for the full Inuit Nunangat Region OL Asset Map Table. The larger aim is to integrate all regional OL Asset Map Tables into a digital National OL Asset Map as part of the National OL Strategy, and that can continue to evolve throughout the United Nations Decade of Ocean Science for Sustainable Development (2021-2030).



KEY FINDINGS: REGIONAL STRENGTHS OF OCEAN LITERACY



Photo: NU Flag, Sanikiluaq © Carie Hoover

Many successful initiatives in Inuit Nunangat exist that support and strengthen Inuit understanding, use, and conservation of the ocean. These initiatives aim to share ocean knowledge within and between communities, as well as with southern partners. The most prominent strength identified, Inuit leadership and strong community engagement, is essential to the success of any program in the Arctic. This overarching strength of (1) Inuit leadership and community engagement is often complemented by one or more other strengths, identified from interviews, such as: (2) locally relevant initiatives (meeting the needs of communities); (3) land-based programs; (4) long-term relationships and investments in people; and (5) adaptations of technology to meet Inuit needs.

1. INUIT LEADERSHIP AND COMMUNITY ENGAGEMENT

There is a strong history of Inuit working together, something that is essential to the long-term success of programs across Inuit Nunangat. The sample of quotes from interview participants and the case study below reflect the different perspectives and considerations of Inuit-led ocean-related initiatives.

Inuvik hunter and 2015 ArcticNet Inuit Recognition Award Winner, Douglas Esagok, described the effectiveness of local Inuit engagement and knowledge sharing: *“We live here and we live with the changes and what we’re seeing every day. You can’t see that when you’re living in the south. Having people on the land that notice changes, a lot of the research programs are actually built off of those observations that people are making in the communities when they’re out on the land.”*

In co-developing local resource management plans, engagement of communities is critical to gaining the required information for effective decision-making. Mark Basterfield, Executive Director of the Nunavik Marine Regional Wildlife Board (NMRWB), highlighted: “The Board has to try to find a balance in the knowledge systems in order to make decisions. For example, there was almost zero recorded Inuit knowledge on polar bears in Nunavik available to them [NMRWB]. And so, they approved and created a comprehensive Nunavik Inuit knowledge study of polar bears that took place in all 14 communities of Nunavik. Then they had that information available side by side with the science to make the decision.”

CASE STUDY # 1: Nauttuqsuqtiit Inuit Stewards

In 2019, an Inuit Impact Benefit Agreement (IIBA)¹⁷ was established between the Qikiqtani Inuit Association (QIA), a regional Inuit advocacy association in Nunavut, and the Government of Canada. This IIBA ensured benefits from the creation of the Tallurutiup Imanga National Marine Conservation Area, went directly to Inuit. Located in Nunavut’s Lancaster Sound at the northern tip of Baffin Island¹⁸, Tallurutiup Imanga covers 1.9% of Canada’s total marine area. QIA worked with the Government of Canada to establish, as part of the IIBA, the Nauttuqsuqtiit Inuit Steward program, ensuring Inuit of the five adjacent communities serve “as the eyes and ears,” monitoring and harvesting these areas to the benefit of the communities¹⁹.

Nauttuqsuqtiit, or Inuit stewards, manage the marine areas by monitoring the ecological health of the region, maintaining cultural sites, contributing to land and marine planning and management, and promoting intergenerational sharing of Inuit knowledge. As part of the monitoring work, the stewards are active harvesters who share their catch with the community. The stewardship program provides local training, jobs within communities, and other economic opportunities for Inuit. According to Mishak Allurut, the Nauttuqsuqti Coordinator from Arctic Bay, NU: *“I know there are youth without fathers. We can provide them the opportunity to learn. We can teach them the traditional way to catch seal with a harpoon¹⁹.”*

This model of Inuit-led management is empowering communities, like Arctic Bay, by strengthening and sustaining traditional Inuit values and skills. During the first year of operation, the Nauttuqsuqtiit program showed immense benefits to the stewards and the community by allowing the Nauttuqsuqtiit to be the sole providers for their families, sharing harvested foods with the community, increasing food security, sharing animal parts for clothing and for art, to improve the local economy, bridging land skills and IQ from elders to youth, and providing teaching opportunities for youth throughout all aspects of the program¹⁹.

2) LOCALLY RELEVANT: MEETING THE NEEDS OF COMMUNITIES

When initiatives meet the needs of local communities, engagement is higher and the impacts lead to greater success. This has been recognized by communities themselves, leading to changes in the criteria of funders (e.g. Tri-council funding, Arctic Inspiration Prize) in selecting research and community project applications to move forward. Across sectors, including government, academia, NGO, and education, strong voices of success demonstrate the importance and positive impacts of locally relevant, community-led and supported programs.

The Arctic Inspiration Prize (AIP) has awarded up to \$3 million dollars each year since 2012 to fund innovative, ‘by the North, for the North’ projects in communities across the Arctic. The AIP attributes the projects’ successes and impacts to their relevance to communities. Specifically, Katie Blasco, Operations Manager noted:

“The AIP has had a great success rate in terms of these projects actually being carried out. I think this is because they are truly community driven projects that the communities are following up on and want to see succeed. It’s nearly a 100% success rate.”

At the federal level, community support is critical. According to Robert Young, Division Manager, Arctic Aquatic Research Division, Fisheries and Oceans Canada: “I can’t think of any program that we operate that doesn’t have a letter of support from the community or regional wildlife board. So right from the collection of the data to the management of the programs, the engagement of Inuit is essential for program success.

CASE STUDY # 2: Arctic Eider Society Educational Package

The Arctic Eider Society (AES) is a charitable organization based in Sanikiluaq, NU, that works with communities across Inuit Nunangat to deliver programs that build capacity and promote self-determination across community-driven research, education and outreach, and stewardship. Its flagship project, the film *People of a Feather*, debuted in 2011 and documented the impact of a changing environment (climate change and hydroelectric dams) on the eider duck and the community of Sanikiluaq. From this successful research project-turned-documentary, the AES then developed an education package to be taught in grade school alongside the documentary.

In 2019, a broader education and outreach package was launched to provide educational resources to the community on locally relevant topics. This resource package built upon the Inuit tradition of intergenerational land-based learning, and established an educational program informed by local knowledge and experiences along with science and research-driven information. For example, seasons and seasonal resources are discussed in the context of the Belcher Islands, where Sanikiluaq is located. More general resources are also available about weather and climate, wildlife and ecology, and water and sea ice. The educational programming was developed out of a need for communities to have locally relevant education materials, as noted by AES Education Coordinator, Jackie Kidd:

“So often the [school] curricula in the north are brought up from the south and they’re not that appropriate; we’re really trying to give something that is relevant to Inuit students, to foster not just their knowledge but also their enthusiasm for science and math through an Inuit lens.”

The Arctic Eider Society is furthering its educational reach as it moves into the development of student and teacher-specific uses on its SIKU platform (“The indigenous knowledge social network”), greatly increasing the availability of local research and Indigenous knowledge for in-class learning. Students and teachers in the north will have access to place-specific data and the extraordinarily valuable resource of Indigenous knowledge-led data interpretation.

3. LAND-BASED PROGRAMS

Across Inuit Nunangat, being on the land (including the ocean and coasts) was noted as especially important to teaching youth and adults about ecosystems, how to hunt, and how to travel safely. Being on the land also plays an important part in strengthening connections to the land. Land camps are noted as an excellent place for Inuktitut language renewal, a source of cultural vitality²⁰. In addition, many land camps focus on knowledge transfer, primarily from elders to youth, enabling youth to become the “next generation to care for these stories and to teach the skills that they have learned through learning from the land”²⁰.

As Gita Ljubicic, Associate Professor in the School of Geography and Earth Sciences at McMaster University explains: *“One of the things that is emphasized a lot in schools [in Inuit Nunangat], is land-based learning, there’s a lot of interest and support. I think for elders, hunters, and other experienced community members just being out there together, on the land or on the ice or water, is one of the*

most effective ways of sharing really important knowledge and gaining skills and experience.” Ocean-based experiential learning programs, such as Students on Ice (SOI), offer youth the opportunity to travel via icebreaker to different communities in the Arctic and learn from elders, educators, scientists, and community members on local (and global) issues that impact the health and well-being of the land & people. As Geoff Green, C.M. and Founder of SOI shared: “The ability to actually be in situ, be on the ocean is one of our unique factors. The ocean, land, and communities become the classroom.” In the more than 20 years the program has been operating, northern youth alumni have gone on to pursue education and training, and for some, even careers related to the ocean, working in conservation, advocacy, and/or education and communication (e.g., producing videos related to the ocean), and art. Of their experiences, alumni noted the SOI experience influenced their career choice (82.4% of alumni), changed their attitude towards other cultures (90.5% of alumni), and influenced their decisions to act on causes they are passionate about (90.5% of alumni).

LAND BASED PROGRAM HIGHLIGHTS: Youth-focused programs such as NUNAMI SUKUIJAINIQ, or science on the land, program were developed out of community consultations to identify priorities such as Arctic ecology, edible marine resources, lake ecology, Arctic char ecology, and archeology for its youth-based target audience. The Nunami Sukuijainiq program is open to youth from all communities within Nunavik and provides teaching and scientific fieldwork experiences, and mentoring opportunities, and it encourages youth to prepare short documentary films to share what they learned with their communities. Similarly, the KANGIDLUSUK Student Program, based in the Torngat Mountains, Nunatsiavut, and established in 2007, offers youth experiential learning and leadership development in areas such as Inuit culture, Arctic science, and outdoor adventure. The program has engaged over 85 youth and provided leadership opportunities for alumni to give back to the program.

The Ilisagvik Society has been running land-based programs centered on community wellness in Clyde River, NU, since 1997. Ongoing and occasional programs include: (1) Qimmivut, introducing youth and young adults to IQ through dog teaming, hunting, and camping, (2) Men’s Group, facilitating sharing of cultural skills and knowledge, (3) Ataata/Irniq (Father/Son) Trip, providing on-the-land mentoring and transfer of IQ between generations of men, (4) Country Foods, supporting hunters through other programs to provide country foods to the community, and (5) Arnait (Women’s) Retreat, giving women an opportunity to be on the land together.

Similarly, the NWT On the Land Collaborative works on a larger, regional scale, to bring together partners so communities can better access money and resources for on-the-land projects. Among the 2018 programs was a Beaufort-Delta summer language camp to teach youth Inuinnaqtun through daily use and traditional camping skills, such as preparing seal meat and sewing. Through this collaborative, 48 programs operated in 2018 with \$1 million in funding generated for Indigenous groups across the ISR, NWT, and Yukon²¹.

Wellness camps are often concentrated on mental health and wellbeing, but almost always involve aspects of teaching culture, community, and land-based skills because the power of the land is enriching and healing²². For example, the Makimautiksat Youth Wellness and Empowerment Camp, based out of Iqaluit, NU, is a youth (9-12 year old) based program that began in 2010 to support Inuit adolescent mental health by teaching coping and relationship skills, crafting and creativity, personal and community wellness, and self-discovery while connecting knowledge (western science and IQ) and skills to the land²³. Adult-focused wellness camps such as a Yellowknife-based land camp for Inuit, Dene, and Métis run by the Arctic Indigenous Wellness Foundation, is “dedicated to improving traditional and culturally based health care for Indigenous northerners facing a high burden of disease and unequal access to traditional health services²⁴.” This urban land-based healing site is a place to enjoy traditional medicines, practices, food, and songs, ensuring the next generation of Indigenous people are as healthy and happy as their ancestors.

4. LONG-TERM RELATIONSHIPS AND INVESTMENT IN PEOPLE

While supporting Inuit-led initiatives, another important factor for success identified by interviewees is the establishment of meaningful, long-term relationships with Inuit. This includes not only one-on-one relationships, but also sustained partnerships built on trust that are often aimed at training and strengthening capacity. As stated by Tiff-Annie Kenny, Postdoctoral Community Health Researcher at Laval University: *“You need to be able to communicate back and forth, honestly and frankly, but that necessitates trust. It necessitates time.”* She explains that most successful initiatives in Inuit Nunangat build slowly over time, often originating from key relationships between individuals or groups and expanding from there.

The commercial fisheries sector, in collaboration with the Government of Nunavut and other stakeholders, created the [Nunavut Fisheries and Marine Training Consortium](#) in 2005 to train Inuit for employment in commercial fisheries and marine industry jobs. Brian Burke, Executive Director, Nunavut Fishing Association, who represents commercial fisheries partners, shared the long-term goals of the association:

“Our industry now has a really solid group of trained Inuit crew, which is increasing over time. And our ultimate goal is to move towards 100 percent [Inuit employment] on our vessels and in our companies.”

Within Inuit led, locally relevant programs, building programs to employ and train more people is important to expanding programs. Daniel Taukie, [Inuit Marine Monitoring Program](#) Coordinator at Nunavut Tunngavik Inc., developed a pilot program in 2017 to locate and monitor ships in the area as vessel traffic has increased. At the time of publication, *“We have 22 marine monitors and assistants trained in different fields now. So the training component to work in the marine industry, like very basic first*

aid, SVOP [small vessel operator proficiency], these opportunities for Inuit really opens the door to work in other areas of the marine industry. It also promotes our program because we’re training our monitors to become not just monitors but use their training certificates to help them get other jobs in other areas of the marine sector.”

Community partnerships also strongly benefit from these sustained relationships. As noted by Eric Solomon, Director of Arctic Programs at Ocean Wise and Co-Lead of Ikaarvik: Barriers to Bridges:

“Ikaarvik is really a program that empowers northern Indigenous youth to be a bridge between research and their communities. The youth explore and identify the strengths of both Indigenous Knowledge and science as ways of knowing, describing, and understanding the world and as tools for addressing issues [that are] concerns. That allows them to identify ways the two can be effectively combined in research. Next they work with their communities to come up with their own research priorities and develop and run their own research to address them with support from Indigenous and non-Indigenous mentors.”

At the national and international levels, the [Inuit Circumpolar Council Canada](#) is a not-for-profit that represents Canadian Inuit internationally. Through the creation of the [Arctic Council](#), an intergovernmental forum to promote cooperation in the Arctic, many initiatives have benefitted from Inuit working together to address culturally relevant issues. The Arctic Climate Impact Assessment²⁵ of 2005 served as a founding document and provided a framework for Inuit to work together to assess the critical issue of climate change and its impacts to the region. Since then, more programs have been built upon this model to address other modern issues such as shipping and sea ice.

CASE STUDY # 3: Arctic Corridors Northern Voices

As many northern communities have identified concerns with increased shipping and the impacts on the marine environment, the Arctic Corridors and Northern Voices project was initiated to develop a network of low-impact marine transportation corridors. In establishing these corridors, communities, Canadian Coast Guard, Transport Canada, the marine transportation industry, and researchers have come together to find better ways to govern shipping. Across 13 communities, Inuit knowledge and voices are being brought forward in developing federal policies around low impact marine transportation corridors to prevent shipping in sensitive hunting and cultural areas, habitat, or Inuit travel routes.

The research team and community partners mobilized existing relationships across the communities to build a larger network across Inuit Nunangat. Principal Investigator and Associate Professor Jackie Dawson, University of Ottawa, noted that success:

“usually comes down to a few really dedicated individuals. This is only possible because of a lot of long-term partnerships that were already established in individual communities and because we all were really interested in sharing and learning from other communities.”

Building on existing relationships, the program further invests in new training opportunities to build new relationships within communities. As Dawson went on to share: *“We partnered with northern partners. We trained northern youth and then we hired those youth to run the mapping workshops and to basically be the lead researchers and we just co-facilitated the workshops with them.”*

Citing relationships as one of the key factors for success²⁶, the program as a whole has been able to influence shipping policies at the national level. For example, maps generated from the workshops have been included in the Canadian Coast Guard Notice to Mariners, which updates charts for ship operators crossing the corridors. These low impact marine corridors are identified by Inuit as safe for travel and for avoiding sensitive areas.

5. ADAPTING TECHNOLOGY TO SUPPORT INUIT NEEDS

With great distances between communities, long travel times, and remote locations, communities have found creative ways to not only acquire but to also store and maintain data. Access to real-time knowledge of the environment is crucial for safe travel, and maintaining that access over the long-term is important for future generations and requires creative solutions.

Any research on Indigenous lands and waters must be led by, or conducted in strong partnership with, Indigenous peoples, in order to ensure that the research meets local needs and priorities and produces usable outcomes. For example, as Ashlee Cunsolo, Director of the Labrador Institute explained when discussing Inuit-led monitoring research in Nunatsiavut, *“the motivation wasn’t science first; it was reciprocity and relationship first, and then saying, science is really important for good stewardship so making sure that we know we’re doing these things. It was thinking about how do we have a good*

relationship with water and understanding that good relationships full of respect and reciprocity is one way that we can give back.”

There is also a need to create infrastructure to improve safety and communication while travelling in remote areas. According to Paul Irgaut, Department of Wildlife and Environment Director at Nunavut Tunngavik Inc.: *“HTOs (Hunters and Trappers Organizations) have some programs for communications to improve travel and hunting safety. The goal that we have in the communities for the HTOs is to set up towers so that you can access communications using your cell phone. That’s one of the barriers that communities are working towards [addressing].”*

Specialty apps have also been developed, and are growing in number, to provide real-time data sharing while keeping data in the hands of Inuit. Two apps dealing with sea ice knowledge, SIKU and SmartICE, have been developed to promote safe travel and incorporate traditional land skills with modern technology.

CASE STUDY # 4: SmartICE and SIKU

As climate has warmed, the sea ice has become unpredictable for travel, meaning the knowledge of sea ice users is increasingly less consistent with unprecedented ice conditions. For example, in 2010 an extremely warm winter led to unpredictable sea ice in Nunatsiavut, resulted in 1 in 12 people falling through the ice while travelling²⁷. In order to empower Inuit communities to adapt to these increasingly unpredictable ice conditions, SmartICE (Sea-Ice Monitoring And Real Time Information for Coastal Environments) was co-designed to integrate Inuit knowledge of ice safety and travel with advanced data acquisition from remote monitoring technology.

SmartICE developed a stationary sensor to remotely monitor daily snow and ice thicknesses and relay them to communities via satellites (the SmartBUOY) and a mobile sensor pulled behind a snowmobile along community trails (the SmartQAMUTIK), which measures snow and ice thickness both in real time for the benefit of the operator and as a colour-coded track for use by the community once the operator returns home. The scientific data generated by SmartICE is shared through SIKU, an Inuit Knowledge Social Network Application.

SIKU is a mobile app and web platform by and for Inuit, which provides tools and services for ice safety, language preservation and weather. Released in 2019 by the Arctic Eider Society, users can share observations about dangerous conditions, hunting stories, and Inuit knowledge, as well as adding local Inuktitut dialects to profiles. SIKU ensures each user has control over all intellectual property and data sharing, resulting in data and knowledge remaining with the individual user or community²⁸.

To meet the urgent need of communities for ice monitoring and to mobilize the knowledge gained from prototype deployments in Nain and Mittimatalik (Pond Inlet), SmartICE transformed into a non-profit work-integrated social enterprise that has hired and trained 68 operators across 17 communities, and opened a Northern Production Centre in Nain, Nunatsiavut, for trained Inuit youth to assemble our SmartBUOY sensors. In addition, sea-ice travel safety information based on Inuit Qaujimaqatugangit has been shared with the wider public (Figure 3).

For Trevor Bell, SmartICE founder and University Research Professor at Memorial University of Newfoundland, “As a social innovator, SmartICE harnesses the vast potential of young Inuit women and men to embrace science, technology and traditional knowledge as a vehicle for sustainable employment and well-being in their communities. It focuses on building partnerships to train and employ Inuit youth as producers, operators and technicians of our technology, while also seeking to engage northern communities for social and economic development.”

Success has come in the form of multiple awards and prizes: Arctic Inspiration Prize (2016), United Nations Momentum for Change Award (2017), and the Governor General’s Innovation Award (2019). However, most notably is the recognition this technology brings to the communities, to improve ice-travel decision-making and share knowledge, as there is currently a waitlist for expansion into more communities²⁷.

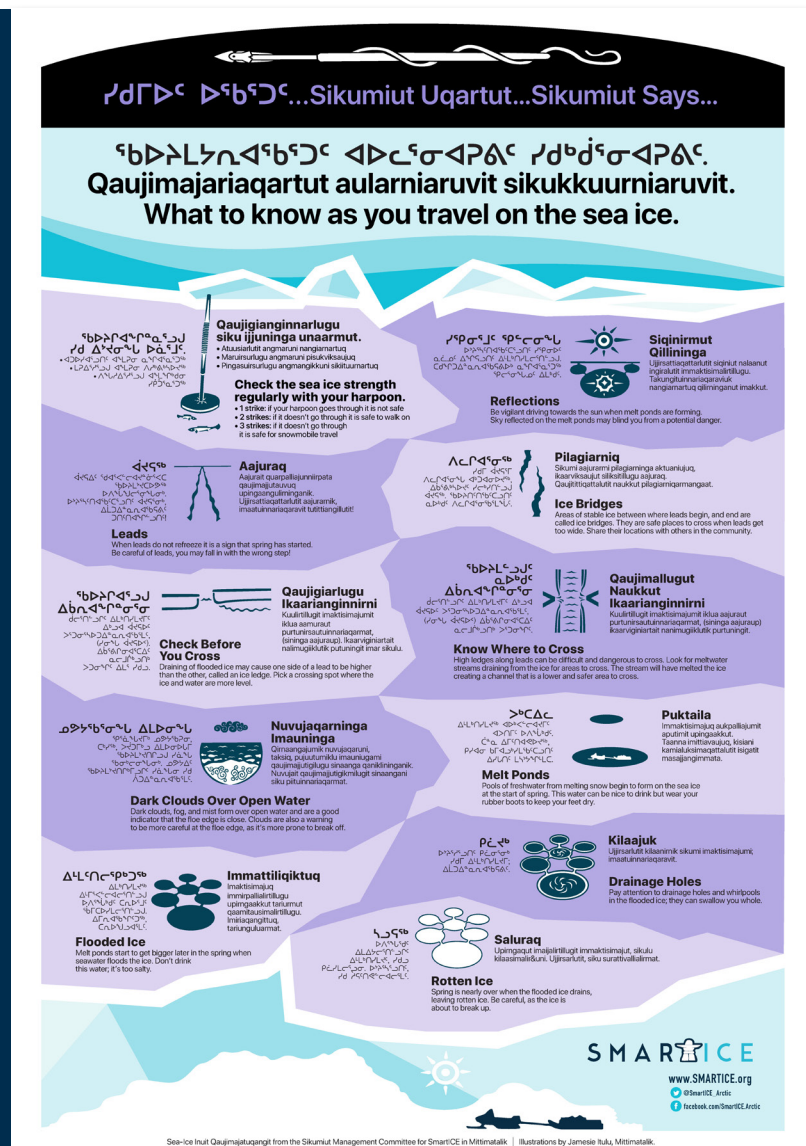


Figure 3: SmartICE team members Katherine Wilson and Andrew Arreak have co-designed with the SmartICE Inuit management committee in Mittimatalik—self-named Sikumiut—two posters that illustrate important sea-ice travel safety information based on Inuit Qaujimaqatugangit.

KEY FINDINGS:

BARRIERS TO OCEAN LITERACY

Throughout the conversations with interview participants and documents reviewed, there were numerous barriers identified that prevent organizations and OL-related initiatives from operating to their full potential: 1) funding and logistical challenges to living and working in Inuit Nunangat; 2) technology and integration with life in remote communities; 3) access, ownership, sharing, and storage of data; and 4) jurisdictional, institutional, and systemic barriers .

1. FUNDING AND LOGISTICAL CHALLENGES TO LIVING AND WORKING IN INUIT NUNANGAT

Because initiatives occur in remote locations with unpredictable changes in weather, costs for implementing and maintaining programs can present challenges. Weather delays and long travel distances can increase budgets exponentially, and prevent many programs from operating. In addition, most initiatives are small-scale in nature and have to manage or leverage large sums to accomplish their goals. As Jamie Snook, Executive Director, Torngat Secretariat, notes: *“Without a sufficient amount for a budget, our board or DFO are not going to generate sufficient knowledge related to the Nunatsiavut region or further north in Inuit Nunangat.”*

Regional organizations such as Nunavut Tunngavik Inc. (NTI), which is the organization responsible for “coordinating and managing Inuit responsibilities set out in the Nunavut Agreement and ensures that the federal and territorial governments fulfill their obligations,”²⁹ identified funding as a key issue. According to Paul Irngaut, Department of Wildlife and

Environment Director at NTI: *“Money. It’s always an issue. Being a non-profit organization we have to rely on funds from other organizations.”* Federal organizations working with Inuit on ocean research, for example, are also not immune to funding challenges, as funds that they receive are typically earmarked for certain policies and have restrictions on how they can be spent, often not in alignment with community interests. According to Robert Young, Division Manager at DFO:

“We don’t have access to Coast Guard ship funds. We don’t have sufficient access to operating funds to collect monitoring and research data that’s necessary for a more complete understanding of how the Arctic ecosystem is working.”

Short funding cycles for academia require a significant investment of resources to acquire and maintain funding year after year, often

with lag times between funding cycles. As Sonia Wesche, Assistant Professor at the University of Ottawa, shares: *“timelines are not always synched up in terms of how quickly the community and regional partners want things to move, and the way that universities work. It’s a real challenge for everyone involved.”* Even when funding is available, sustaining large sums over time can be daunting for organizations, with financial capacity tied to long-term program success. The [Arctic Inspiration Prize](#) (AIP) has acknowledged this is an important criterion in selecting programs to fund. Long-term sustainability of programs is important to the selection process as expressed by Katie Blasco, Operations Manager, about their award winners: *“Once their Prize funding runs out, we don’t want the projects to die, we want them to continue. They [award winners] have to acknowledge what systems they have in place to be able to manage the prize money properly. And a lot of times groups will team up with more established organizations to help with financial management of the project. But for some groups*

it’s hard to find these kinds of support systems, so it makes long-term sustainability a challenge.” As expressed by [Students on Ice](#) Founder Geoff Green, C.M., long-term partnerships with Inuit organizations and communities require an understanding of what funding will be available and constant communication with communities:

“We are trying to always be ahead of the curve, working with communities to anticipate what emerging funding opportunities there might be, and how/if, those opportunities align with the wants and needs of the communities.”

From the perspective of [Oceans North](#), deploying resources in communities is vital to advancing conservation. Susanna Fuller, Vice President of Operations and Projects, noted: *“It is important that communities see real value in advancing ocean research and conservation initiatives. Often, long term funding precludes good jobs in monitoring and guardianship that ensure the durability of community lead projects.”*

Finally, there are also individual barriers for families to pass on knowledge and land skills to their children. As shared by Douglas Esagok, Inuvik Hunter and 2015 ArcticNet Inuit Recognition Award Winner: *“A lot of people just don’t have the means to do it [go hunting] or they have a nine to five job that leaves them very little time to do things like that. It’s the employment rate that has a lot to do with it and people just can’t afford the equipment; it’s getting so expensive, just to buy a snow machine, nowadays it’s like [costs as much as] buying a small car.”*

Along with the above funding and logistical challenges commonly identified by participants there is a related aspect, that of the frequent turnover of qualified personnel. As many noted, there is no shortage of ocean knowledge, skills, and expertise in the region. However, even where funding is secured, qualified individuals are highly sought after, leading to



Photo: NU Flag, Sanikiluaq © Carie Hoover



Photo: Arctic char drying outside home in Gjoa Haven © Natta Summerky/Students on Ice Foundation

staffing changes, and frequent loss of capacity at an organizational and/or programming level. This occurs across sectors. As Brian Burke, Executive Director, Nunavut Fisheries Association shared when discussing the challenges of retaining high-level employees in the commercial fisheries sector:

“You have developed good trained people, it’s hard in many cases to keep them in the fishery, there’s so many opportunities for them in other marine sectors or within their communities.”

Similarly, but from an education perspective, several participants shared the impacts of staff turnover. Johan Stroman, Community Educator and Education Consultant, ISR, commented:

“There are both the short-term people who have a negligible impact and the short-term people who come in and have a huge impact. But in terms of sustained support for a program, the ideal would be passionate committed teachers who stay for a period of time so that that training or that support isn’t lost.”

In some instances, as Trevor Lucas, a hunter from Sachs Harbour, NWT adds: *“There are not enough people able to teach the youth to go out on the land.”*

2. TECHNOLOGY AND INTEGRATION WITH LIFE IN REMOTE COMMUNITIES

Technological barriers were identified under multiple forms, including: limited technology or internet access, having to use or integrate multiple systems, and finding more seamless ways to integrate technology with Inuit culture.

First, internet connections are more expensive, slower, unreliable, and have lower data usage than in other places in Canada. *“But I think IT [information technology] and in particular the access to streaming and to internet is a really important [issue] because I think it’s very easy in today’s setting to assume because we’re living in 2020, that that access is available everywhere, and in some [communities] it really isn’t.”* Johan Stroman, Community Educator and Education Consultant, ISR

Limitations of internet and cell tower ranges and lack of access to cellular service in most communities means that finding creative solutions to gather data when out on the land is essential. As noted by Ashlee Cunsolo, Director, Labrador Institute, Memorial University of Newfoundland,

“Everyone already has their own [electronic] devices. And as one of the people with whom we were working on the app development explained, ‘we don’t want another program [app], we just want it to be part of our life’ and easy to integrate. Finding technological options that work for people, in order to gather data, which people prioritize and find important, then, can be one possible strategy for enhancing Inuit-led monitoring in the North.”

Being out on the land requires multiple technologies to remain safe as identified by Paul Irngaut at Nunavut Tunngavik Inc.:

“Communication doesn’t only go through internet and bandwidth. There’s also VHF that the community needs. Like long-range VHF for proper communication so that we have more resources, like search and rescue. We need more range within some of the communities because once somebody gets lost it’s either you can’t communicate with them or you don’t know where they are. So these kind of barriers are really challenging for a community to have when you don’t have the proper resources.”

Specific to the challenges of ensuring technology is used in culturally and educationally appropriate ways, the following points were raised by participants:

“We have so much technology now at our fingertips that we can be online without even having those backgrounds or those skills because of the tools and the equipment and what’s available now. There is a diminishing amount of conversation. People don’t socialize in small communities like they used to, so that part of it is getting farther away, the more advanced in technology we get.” Derrick Pottle, Hunter, Artist, and Community Member Rigolet

“We still need to ask questions that engage people individually and personally and provide opportunities in a learning context where they can share their own thoughts, feelings, and concerns amongst themselves so that the educational process is viewed as generative, because even if we could connect every single school in Canada to 5G Wi-Fi streaming internet there’s amazing stuff that you can do in a learning context but so much of it still comes down to these basic principles, making sure that we wed the best information and the best access to key data with place-based learning that engages people at a local level.” Johan Stroman, Community Educator and Education Consultant, ISR

3. ACCESS, OWNERSHIP, SHARING, AND STORAGE OF DATA (OCEAN KNOWLEDGE)

Although there is a vast amount of ocean knowledge held within the communities, not all community members are able to access it. Furthermore, relationships with southern partners can result in expert knowledge being collected and exported from the communities, without any reporting back. This prevents that knowledge being directly applied in ways that benefit communities. Below is a brief sample of perspectives shared by interview participants:

“There’s lots of them [researchers] that come and take their data and never really share it with the community, and that’s starting to change too now. The Hunters and Trappers Committee is sending out people that deal with the research applications on a daily basis, and starting to make themselves more involved with research and how it’s carried out in our region and maybe playing a bigger part in how things are done. And to me that’s what it should have been like right from day one. We’re getting there, and we’re getting there slowly, but at least we’re getting there.” - Douglas Esagok, Inuvik Hunter and 2015 ArcticNet Inuit Recognition Award Winner

“A huge barrier in ocean work is obviously access, knowing what’s out there and not having a central hub.” - Dustin Whalen, Natural Resources Canada

“But that piece [knowledge], having it accessible and making sure that it’s documented for future use, and for comparisons in the future, and having a baseline to work from as to what it looks like today and what it’s going to look like tomorrow.” - Jackie Kidd, Education Coordinator, Arctic Eider Society

“More knowledge about equity within resource access would be very valuable to Nunatsiavut, but also to others in Inuit Nunangat. There needs to be more knowledge about how organizations gain access to resources and where the flow of money actually goes and who actually benefits from these resources. I’m thinking about healthy people and healthy communities and sustainable communities. And I think if there was more knowledge shared about these inequities it could help ensure more access and more benefit [to communities].”-Jamie Snook, Executive Director, Torngat Secretariat

4. JURISDICTIONAL, INSTITUTIONAL, AND SYSTEMIC BARRIERS

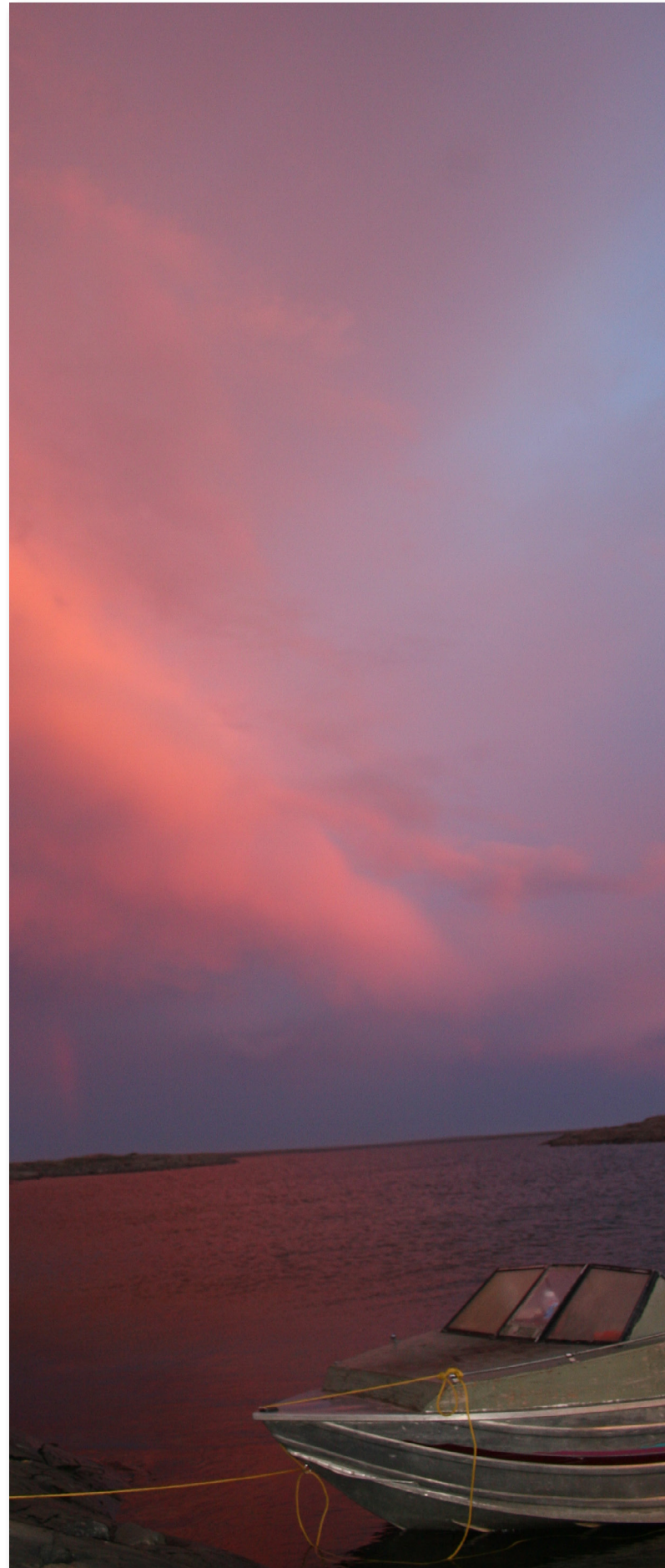
Management, decision-making, and knowledge of the ocean often follow institutional frameworks. Finding ways to navigate local, regional, and federal institutions, or cross geopolitical boundaries can inhibit initiatives. In addition, these jurisdictional, institutional and systemic barriers are often interconnected, at interplay with one another, and can slow progress in OL.

For example, the Nunavik Marine Region Wildlife Board, who first met in 2009 to establish marine co-management for waters off the coast of Nunavik, faced jurisdictional barriers that slowed progress in wildlife management. Mark Basterfield, the board’s Executive Director, explained the importance of relationships and breaking down those barriers: *“It’s very important for us to continue to develop our relationships with entities with shared interests. We are a young organization, and most government departments are fairly new at dealing with land claim organizations. So, there’s a lot of fostering situations where we can work together and figure out efficiencies without letting jurisdictional complexities bog down work that is important for the wildlife and the habitat and the ocean, and the people who rely on them.”*

Similarly noted by Michael Barrett, Associate Director Renewable Resources, Environment, Lands and Parks Department, Kativik Regional Government,

“I think we need to have much more interrelated communications between the regions and communities no matter what regions they’re in. Some of these government jurisdictional boundaries make it somewhat difficult.”

Within the federal government there are systemic barriers that are being considered. In particular, Robert Young, Division Manager, DFO, noted the challenges federal employees face when advocating for change within their own institution: *“I think what we need is our partners to understand that they have influence with the department [DFO]. Their voice is extremely important in communicating their priorities-or understanding how really the system is working. So if we’re going to make a change – if we want to make the change then it has to be stimulated by the interests of people outside of the department.”* He went on to highlight systematic barriers, whereby permanent employment at federal institutions is contingent upon university degrees or other southerly-focused criteria that often prevent the hiring of Inuit to lead programs. *“I’m looking to develop a collaboration with southern universities to come up with innovative plans so that we can get people to be trained in those [management, science] disciplines. We are [currently] relying exclusively on someone going into a four-year program and then, you know writing a Master’s thesis and a Ph.D. and doing a post-doc and all that kind of stuff. It’s not always culturally appropriate. If we had internal training programs that would allow that person to acquire those skills, if we can provide that training while they’re an employee and advance them through the Department.”*



KEY RECOMMENDATIONS AND KEY MESSAGES

1. REFRAMING OL TERMINOLOGY TO INCLUDE INUIT PERSPECTIVES

Most interview participants and documents from across all sectors did not use the term “ocean literacy.” Although in practice, many programs were aimed at increasing OL insofar as working to advance ocean knowledge, values, and actions; it was simply not framed as such.

- Redefine the “ocean” to include land, ice, water, and coast.
- Reframe OL terminology in a way that acknowledges its importance in Inuit Nunangat. As noted by Sonia Wesche, Assistant Professor, University of Ottawa, *“I think it takes a concerted effort and it takes time to make the idea of ocean literacy, or ocean values and relationships more overt. We have to talk about it.”*
- Find ways for existing initiatives that are practicing components of OL to identify their work as contributing to the broader national and international work on OL. This will contribute to empowering a global citizenry to value and contribute to ocean sustainability.

2. LONG-TERM INVESTMENTS IN PROGRAMS AND PEOPLE

Successful programs take time to grow, and require sustained funding. Program recognition and impact grow as participants move into mentorship positions or employees take on higher-level positions. Establishing long-term funding for successful initiatives will help programs to succeed and retain capacity.

- Connect communities to learn from one another’s successful initiatives, helping them to adapt or create their own.
- Prioritize funds for Inuit programs, and keep funds in communities to run programs.
- Create jobs that align with Inuit realities and culture, and allow people to remain in their communities.

3. INUIT AS DECISION-MAKERS (AND KEEPERS OF OCEAN KNOWLEDGE)

- Ensure decisions regarding the ocean and the data collected remain with Inuit. Data sharing should find culturally appropriate ways to ensure ocean knowledge is retained within communities.
- Increase training of southern partners to learn/understand Inuktitut, IQ, and cultural connections to the ocean.

- Accept Inuit knowledge (and Indigenous Knowledge more broadly) outside of the region *“I’ll say that acceptance of traditional knowledge would be one of the key components to better understanding what ocean literacy [as a field] is planning to do.”* - Paul Irgaut, Nunavut Tunngavik Inc.
- Make OL initiative materials, including key communication tools and resources, available in Indigenous languages.

4. INCREASED CONNECTIONS WITHIN, AMONG, AND OUTSIDE OF COMMUNITIES

- Empower communities to develop and lead OL-related initiatives.
- Identify funding to support positions dedicated to OL and provide recognition within communities. Allow these people to lead as the community liaison.
- Find ways to increase community conversations around the ocean and ecosystems, beginning with strengthening connections and knowledge sharing between youth and elders. Learn from elders and hunters to highlight the extensive knowledge held within communities, and build recognition of Inuit Knowledge.
- Support knowledge sharing and conversations between communities through community coordinators, specialty programs or gathering opportunities (in-person or virtual).
- Invest in infrastructure to support sharing of knowledge: better internet connections, locally-owned data servers, and access to technology to facilitate these connections.
- Develop school curricula that enable Inuit students and elders to share their knowledge about, and connection to, the ocean with non-Inuit outside of their communities.

5. PARTNERSHIP SUPPORT FOR LOCALLY-RELEVANT, PLACE-BASED OCEAN EDUCATION AND TRAINING

- Develop Inuit-centric curricula in Inuit Nunangat schools.
- Continue and expand on land-based learning experiences to help Inuit develop skills required for travel, hunting, and build capacity for jobs in ocean science and management fields.

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28. Arctic Eider Society. SIKU The Indigenous Knowledge Social Network Press Release. in *Press Conf. Public Launch* (Halifax, NS, 2019).
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APPENDIX A: FOCUSED DOCUMENT SCAN LIST

The document scan list reflects the reports and resources that were recommended by regional COLC members and study participants, providing important regional and background context. The scan helped to inform and guide aspects of the regional engagement phase, including interview questions, participant recruitment, and points of interconnectivity.

In total, over 70 documents were scanned. Any documents that were referenced in the report appear in the reference section above. All relevant recommended OL assets (e.g., information resources) appear in the Inuit Nunangat OL Asset Map Table. The rest of the documents, 41 total, appear in the list below.

1. Association of Canadian Universities for Northern Studies (2017) Research Excellence in Yukon: Increasing Capacity and Benefits to Yukoners in the Social Sciences, Humanities and Health Sciences
2. Aurora Research Institute (2016) Aurora Research Institute Strategic Plan 2016-2026
3. Beaufort Sea Partnership (2009) Integrated Ocean Management Plan for the Beaufort Sea: 2009 and beyond. Inuvik, NWT
4. Benoit LE, Benoit and Associates (2011) On Thin Ice: An overview of the governance of Hudson Bay
5. Bujold R, Simon M (2018) Final Report of the National Advisory Panel on Marine Protected Area Standards. Fisheries and Oceans Canada, Ottawa, ON
6. Carter N, Dawson J, Joyce J, Ogilvie A (2017) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Gjoa Haven, Nunavut community report). University of Ottawa, Ottawa, ON
7. Carter N., Dawson J, Parker C, et al (2018) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Tuktoyaktuk, Inuvialuit Settlement Region, Northwest Territories community report). University of Ottawa, Ottawa, ON
8. Carter NA, Dawson J, Knopp J, et al (2018) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Cambridge Bay, Nunavut community report). University of Ottawa, Ottawa, ON

9. Carter NA, Dawson J, Parker C, et al (2018) Arctic Corridors and Northern Voices Northwest Territories: governing marine transportation in the Canadian Arctic (Sachs Harbour, Inuvialuit Settlement Region, Northwest Territories community report). University of Ottawa, Ottawa, ON
10. Carter NA, Dawson J, Parker C, et al (2018) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Aklavik, Northwest Territories community report). University of Ottawa, Ottawa, ON
11. Carter NA, Dawson J, Parker C, et al (2018) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Inuvik, Inuvialuit Settlement Region, Northwest Territories community report). University of Ottawa, Ottawa, ON
12. Carter NA, Dawson J, Parker C, et al (2018) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Ulukhaktok, Northwest Territories community report). University of Ottawa, Ottawa, ON
13. Carter NA, Dawson J, Weber M (2019) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Coral Harbour, Nunavut community report). University of Ottawa, Ottawa, ON
14. Carter N, Dawson J, Cook A (2019) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Resolute, Nunavut community report). University of Ottawa, Ottawa, ON
15. Carter N, Dawson J, Joyce J, Ogilvie A (2017) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Arviat, Nunavut community report). University of Ottawa, Ottawa, ON
16. Carter N, Dawson J, Joyce J, et al (2018) Arctic corridors and northern voices: governing marine transportation in the Canadian Arctic (Pond Inlet, Nunavut community report). University of Ottawa, Ottawa, ON
17. Carter N, Dawson J, Parker C, et al (2018) Governing Marine Transportation in the Canadian Arctic KAPIANGAQIYUAQ (Our land, sea and ice are very critical): Paulatuk, Inuvialuit Settlement Region, Northwest Territories ARCTIC CORRIDORS AND NORTHERN VOICES. University of Ottawa, Ottawa, ON



18. Crown-Indigenous Relations and Northern Affairs Canada Canada's Arctic and Northern Policy Framework

19. Dawson J, Carter N, Luijk N Van, et al (2020) Infusing inuit and local knowledge into the low impact shipping corridors : An adaptation to increased shipping activity and climate change in Arctic Canada. Environ Sci Policy 105:19–36. doi: 10.1016/j.envsci.2019.11.013

20. Government of Northwest Territories (2018) 2030 NWT CLIMATE CHANGE STRATEGIC FRAMEWORK: What we heard: Summary of external review period

21. Government of Northwest Territories (2017) Knowledge Agenda: Northern Research for Northern Priorities

22. Greydanus K, Provencher JF, Carter NA, et al (2018) Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Salluit, Quebec community report). University of Ottawa, Ottawa, ON

23. Hamilton AL (2013) The Hudson Bay Complex in Flux: Contemplating the future of the world's largest seasonally ice-covered inland sea. The International Institute for Sustainable Development

24. Hudson Bay Consortium (2018) The Hudson Bay Summit Final Report

25. Hudson Bay Consortium startup planning committee, Arctic Eider Society (2016) A Timeline of Environmental Stewardship Efforts for the greater Hudson Bay Marine Region: Background of the Hudson Bay Consortium Initiative*

26. Ikaarvik, Oceanwise (2018) SciQ: Science and Inuit Qaujimajatuqangit: Research and Meaningful Engagement of Northern Indigenous Communities

27. Inuit Circumpolar Council Canada (2008) The Sea Ice is Our Highway

28. Inuit Tapiriit Kanatami (2018) National Inuit Strategy on Research

29. Inuit Tapiriit Kanatami (2017) Nilliajut 2: Inuit Perspectives on the Northwest Passage Shipping and Marine Issues. Ottawa, ON

30. ITK (2016) Inuit priorities for Canada's climate

strategy: A Canadian Inuit Vision for our common Future in our homelands

31. Johnston M, Dawson J, Stewart E, De Souza E (2013) Strategies for Managing Arctic Pleasure Craft Tourism: A Scoping Study. Thunder Bay, Ontario. disclaimer

32. Katutjiqatigiingit NT (2008) A Life Vest for Hudson Bay's Drifting Stewardship. Arctic 61:35–47

33. Makivik Corporation, Kativik School Board, Institute AC, et al (2014) PARNASIMAUTIK CONSULTATION REPORT On the Consultations Carried Out with Nunavik Inuit in 2013

34. Pizzolato L, Howell S, Dawson J, et al (2013) Climate Change Adaptation Assessment for Transportation in Arctic Waters (CATAW) Scoping Study: Summary Report. A report prepared for Transport Canada, Ottawa, ON

35. Polynya NW (2017) People of the Ice Bridge: The Future of the Pikiyasorsuaq North Water Polynya

36. Simon M (2017) A new shared Arctic leadership model. Indigenous and Northern Affairs Canada

37. Taukie D (2019) Inuit Marine Monitoring Program: Processes for Implementing an Ecosystem Approach to Management on Shipping, Tourism, and Exploration for the Nunavut Region

38. The PEW Charitable Trusts (2016) The Integrated Arctic Corridors Framework

39. World Wildlife Foundation (2018) Getting it Right in a New Ocean: Bringing Sustainable Blue Economy Principles to the Arctic. WWF Arctic Program, Ottawa, ON

40. Yukon Government (2012) Department of Economic Development Strategic Plan 2012-2017

41. Yukon Government (2016) Government of Yukon Science Strategy

APPENDIX B: INTERVIEW PARTICIPANTS

Organization/Community/Initiative	Interview Participant(s)
University of Ottawa	Jackie Dawson
Nunavut Tunngavik Inc	Paul Irgnaut, Daniel Taukie
Laval University	Tiff-Annie
Community Member and Hunter, Rigolet, NU	Derrick Pottle
Labrador Institute, Memorial University of Newfoundland	Ashlee Consolo
Nunavut Fisheries Association	Brian Burke
Nunavut Marine Council	Colleen Parker
Natural Resources Canada	Dustin Whalen
Ikaarvik, Ocean Wise	Eric Solomon
Torngat Secretariat	Jamie Snook
Nunavik Marine Region Wildlife Board	Mark Basterfield
Fisheries and Oceans Canada	Robert Young
University of Ottawa, Food security researcher	Sonia Wesche
Inuit Circumpolar Council	Stephanie Meakin
SmartIce, Memorial University	Trevor Bell
Build Films	Trevor Gill
Students on Ice	Geoff Green
Renewable Resources, Environment, Lands and Parks Department Kativik Regional Government	Michael Barrett
SIKU, Arctic Eider Society	Jackie Kidd
Polar Knowledge Canada	Timothy Straka
Community Member/ Hunter Sachs Harbour, ISR	Trevor Lucas
Community Member/ Hunter Inuvik, ISR	Douglas Esagok
McMaster University	Gita Ljubicic
Community Educator and Education Consultant, Tuktoyaktuk ISR	Johan Stroman
Arctic Inspiration Prize	Katie Blasco
Tuk TV	Maeva Gauthier*, Michele Tomasino*

*Shortened interviews were completed after transcription services were completed. Ideas and discussion contributions to themes were documented and contributed to the regional report, but were not counted as interviews in this report.



APPENDIX C: INTERVIEW QUESTIONS

1. From your perspective, how does your organization (or community) foster a relationship with the ocean?
2. Is ocean literacy a useful or familiar term for you(r) organization? If so, how do you define it? If not, why?
3. What factors contribute to the success of your (organization's) work on ocean literacy? (can include ocean knowledge(s), ocean values, ocean action(s))
4. Can you provide some specific examples of positive impacts from your (organization's) work (specific to OL)?
5. What are the key challenges and barriers to your (organization's) work on ocean literacy?
6. What would you like OL to look like in Canada by 2030? How do you think we can get there?
7. Do you have any long-term goals for your organization goals for OL in Canada? If so, what are they? If not, why not?
8. How would you like to see ocean literacy defined in Canada?
9. Who would you identify as a leader in OL in Canada? Why?
10. What are your (organization's) most important partnerships, networks, collaborations, for ocean literacy work?
11. Are there any organizations (or communities/ groups) you would like to work with in the future (on OL)?
12. Are there any people within this region/sector that you think I should interview?



APPENDIX D: OL MAPPING TABLE LIST OF ORGANIZATIONS

Information from reports, pamphlets, websites were collected regarding these organizations/institutions and evaluated by the Inuit Nunangat Regional Coordinator for inclusion in the Asset Map. The list below represents organizations that are included in the [Inuit Nunangat Region OL Asset Map Table](#).

Education:

Churchill Northern Science Centre
Piruvik Centre
Nunami Sukuijainiq
Nunavut Arctic College
Ocean Wise
Nunavut Sivuniksavut
Nunavik Sivunitsavut
KANGIDLUASUK Student Program
Illaqsivik

NGO & Advocacy:

Arctic Research Foundation
Ecology North
Arctic Eider Society
Arctic Inspiration Prize
Inuit Circumpolar Council
Qarmaapik House
Students on Ice
Inuit Tapiriit Kanatami
Makivik
Qikitani Inuit Association
Nunavut Tunngavik Inc.
Oceans North
WWF
Pinnguaq
Tides Canada

Academia & Research

ArcticNet
StraightUpNorth
Nunaliit
Aurora Research Institute
Nunavut Research Institute
Arctic Corridors
Nunatsiavut Research Centre

Government

Industry Tourism, and Investment-Government of
Northwest Territories
Joint Secretariat
Nunatsiavut Government
Fisheries and Oceans Canada
Environment and Climate Change Canada
Torngat Secretariat
Katavik Regional Government
Natural Resources Canada

Nunavik Marine Region Wildlife Board
Nunavut Wildlife Management Board
Polar Knowledge Canada
Indigenous and Northern Affairs Canada

Community

From Scrap to Art
SmartIce
Makkuttukkuvik Youth Centre
ilinniapaa Skills Development Centre

Industry

Gaurdians of Tariuq
Nuna Group of Companies
Baffinland
Nunavut Fisheries Association
Nunavut Fisheries and Marine Training Consortium
Kavik Stantec
Stratos

Cultural Heritage

Naonaiyaotit Traditional Knowledge Project Atlas
Arctic Indigenous Wellness Foundation
Qaggiavuut
Chickweed Arts
NWT on the Land Collaborative
Qajaq Program
Traditional techniques tweaked to galvanize
indigenous northern artisans
Unaaq Men's Association of Inukjuak: Intensive
Traditional Program Development
Uqarluta / Let's Speak Inuinnaqtun!
Piqqusilirivvik Inuit Cultural School

Health

Qaujigiartiit Health Research Centre
Fostering open Expression among Youth (FOXY)
North in Focus

Media

Build Films
Angry Inuk
Tuk TV

Multi-sectorial Orgs

Hudson Bay Consortium
Beaufort Sea Partnership



APPENDIX E: RESEARCH ETHICS AND METHODS SUMMARY

Drawing on qualitative and quantitative methods through a collaborative research approach, the study focused on five Canadian regions (Atlantic, Inuit Nunangat, Pacific, St. Lawrence, and inland Canada), as well as nationally. As a Mitacs-funded and Canadian Ocean Literacy Coalition (COLC)-led project, the research team included postdoctoral fellows, graduate students, supervising professors at partner universities (Dalhousie, Ottawa, Simon Fraser and Trent), and an extensive network of industry/organizational partners located across Canada.

In order to co-develop a national OL strategy based on regional findings and recommendations, the team engaged in three central lines of inquiry:

1. reviewed regional ocean-related studies, reports, policies, media, and other publicly available documents for linkages to OL through a focused document scan. This process also contributed to OL mapping.
2. conducted semi-structured interviews and a comprehensive asset mapping methodology to understand the ways in which OL is being interpreted and implemented regionally across nine pre-identified sectors; and
3. conducted a national online ecosystem survey (COLS - Canadian Ocean Literacy Survey), as well as a National Poll, conducted by Nanos Research, for the general Canadian public.

In addition to the above lines of inquiry, an arts-based methodology was used led by a team of artists (one per region), 3 youth workshops (e.g., focus group approach), and a Canadian media content analysis and social media scan.

Interview data was organized by key questions (see Appendix C) and then coded and categorized into key themes. The findings from the interviews were then examined with the findings from the OLM (regional/organizational) Survey* and the COL (national) Survey. A convenience sample of self-identified participants within the COLC network was used along with a snowballing technique to further expand the initial sample (i.e., participants suggested others to interview and participate in the OLMSurvey). This report primarily focuses on data collected from participants who are directly engaged in OL or in other ocean-related work. Data collected from a random sampling of the Canadian public took place via the national poll conducted by Nanos Research and the arts-based research data.

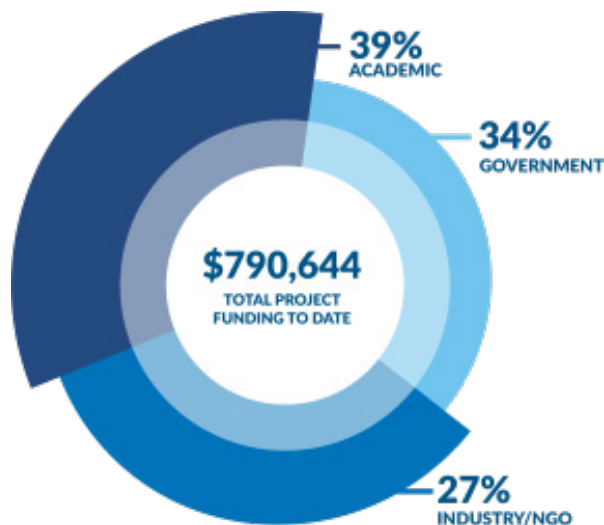
To view these research tools and related reports, please visit: <https://colcoalition.ca/research-tools/> and <https://colcoalition.ca/our-projects/regional-reports/inuit-region/>. All research tools and protocols were approved by Dalhousie Research Ethics, REB# 2019-4891 as the lead (national) research institution, as well as Trent University IEC/DERC Ethics #25944 for the Inuit Nunangat regional protocol. Further approvals were granted by Aurora Research Institute (#16679) and the Nunatsiavut Government Research Advisory Committee (#10269769), with exemptions granted by the Nunavut Research Institute and Nunavik Research Centre/ Makivik.

Validation: The draft Inuit Nunangat Regional report, in-depth case studies, and a baseline table with OL initiatives organized by sectors were sent for review to the participating organizations and individuals. This final report reflects this review process.

* The Inuit Nunangat region did not employ the OLM Survey, rather key initiatives were entered by the regional coordinator to capture a variety of OL initiatives across the region, as presented in Appendix D.



APPENDIX F: RESEARCH PROJECT FUNDING



The COLC is comprised of NGO, government, academic, industry, and philanthropic organizations. Our funding reflects this collaboration.

Total Project Budget to date: **\$790,644**

Federal Government

\$266,630

Fisheries and Oceans Canada	\$200,000
Environment and Climate Change Canada	\$20,000
Polar Knowledge Canada	\$25,000
Science Horizons Internship Program	\$13,750
Ingenium (Canadian Museum of Science and Technology)	\$5,000
Natural Sciences and Engineering Research Council of Canada	\$2,880

Industry/NGO/Philanthropic

\$220,750

Students on Ice	\$63,750
Ocean Wise	\$50,000
NIVA Inc.	\$25,000
Clean Foundation*	\$25,000
Canadian Commission for UNESCO	\$18,000
Stratos Inc.	\$15,000
McConnell Foundation	\$10,000
Ocean Networks Canada	\$9,000
Baffinland	\$5,000

* with support from Environment and Climate Change Canada

Academic

\$303,264

Mitacs	\$169,664
Ocean Frontier Institute	\$80,000
Marine Environmental Observation, Prediction and Response Network	\$23,600
Ocean Frontier Institute Seed Fund	\$20,000
Marine Institute	\$10,000