



NORTH ISLAND COLLEGE



RESEARCH AND INNOVATION

IMPACT REPORT 2025

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Welcome

Over the past decade, the Centre for Applied Research, Technology and Innovation (CARTI) has been a key contributor to North Island College’s commitment to providing research and learning opportunities that are both relevant and responsive to community needs. This is demonstrated through the variety of research projects successfully developed and delivered across the college region, each designed to address the unique needs of local communities.

Congratulations to the entire CARTI team, your efforts have secured millions of dollars in research funding to support economic growth in the region and have provided numerous faculty and students with opportunities to engage in meaningful research projects. We look forward to CARTI’s continued growth, including the expansion of research opportunities, continued contributions to economic development within the college region, and further opportunities for faculty and students to engage in critical research initiatives.

Tony Bellavia
Vice President, Academic

Applied Research at North Island College continues to be a catalyst for collaboration, innovation, and community impact across Vancouver Island and beyond. The 2024-2025 year has been marked by significant achievements that reflect our commitment to fostering applied research partnerships, supporting regional economic development, and creating opportunities for students to engage in real-world problem-solving.

Through strong connections with industry, non-profit organizations, and Indigenous communities, CARTI has advanced projects that address local challenges while contributing to global conversations on sustainability, technology, and social innovation. Our work this year demonstrates the power of applied research to drive meaningful change—including our work supporting innovation by emerging businesses in the seaweed sector, our marine technology innovations leading to enhanced knowledge of our marine ecosystems, or our work on the ground with local organizations to enhance our community resilience.

It’s been a pleasure for me to witness the impact achieved by this amazing team. I hope that you will also be inspired by the projects described in this report.

Naomi Tabata
Director, Envision North Island

About CARTI

North Island College's (NIC) Centre for Applied Research, Technology and Innovation (CARTI) has been leading community-engaged applied research projects since 2012. NIC is committed to fostering applied research and social innovation projects as fundamental experiential learning opportunities where students develop transferable skills while increasing the college's contribution towards the socioeconomic needs of the community.

NIC and CARTI are also committed to reconciliation and Indigenization of principles and protocols in research. In NIC's Working Together Indigenization plan, our commitment to seven protocols are the foundation and framework for our continued promise to Indigenous education and CARTI uses these protocols in our research activities.

CARTI Fast Facts

Fiscal Year 2024/25

57 Community and industry partners

33 Paid student research assistants

28 Projects



We're honoured to acknowledge the traditional territories of the combined 35 First Nations of the Nuu-chah-nulth, Kwakwaka'wakw and Coast Salish traditions, on whose traditional and unceded territories the college's campuses are situated.

Seaweed Innovation Hub

With growing momentum and interest in seaweed, and building on a decade of CARTI-led research and innovation, CARTI has formalized the Seaweed Innovation Hub to provide cutting-edge, cross-sector innovation support; state-of-the-art field, lab, and processing equipment; and knowledge transfer and training to First Nations, industry and community organizations.

The Seaweed Innovation Hub collaborates with small and medium size enterprises, rights holders, stakeholders, communities, and organizations to enhance seed production, increase processing capacity, conduct market analyses, and develop new products to boost the sector's global competitiveness.

INNOVATION WITH INDUSTRY/COMMUNITY

Current Projects:

- Sector and company business case development
- Ecologically and commercially appropriate seed production
- Low-carbon, low-risk processing infrastructure and systems
- Innovative methods in kelp restoration and monitoring



First Nations,
Industry, and
Community
Partners

EQUIPMENT

Mobile and stationary processing units, bioreactor, drones, and kelp hatchery

KNOWLEDGE TRANSFER AND TRAINING

- Stackable micro-credentials from site planning to commercialization
- Community/industry workshops
- One-on-one mentorship
- Virtual Seaweed Series
- Student research assistants

Seed production innovation

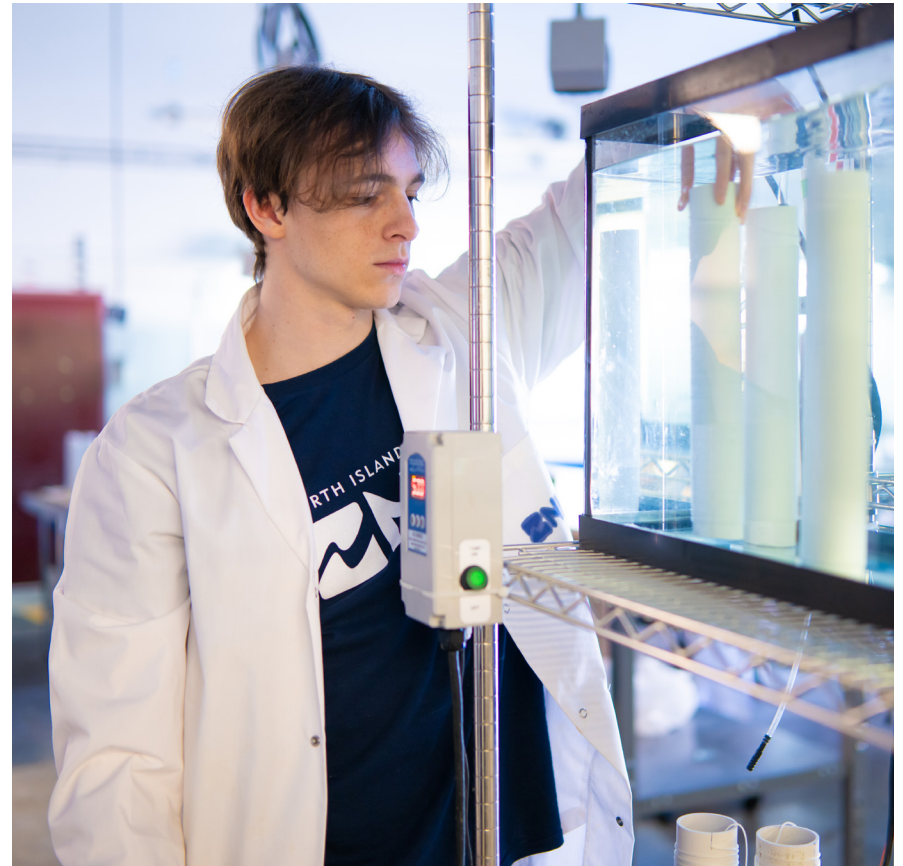
Critical to the hub is a seaweed bioreactor purchased from Victoria-based Industrial Plankton. The bioreactor allows CARTI to work with seaweed businesses and restoration organizations to enable predictable and continuous seed supply, improved quality control, increased yields, and new efficiencies in seaweed seed production.

Impact

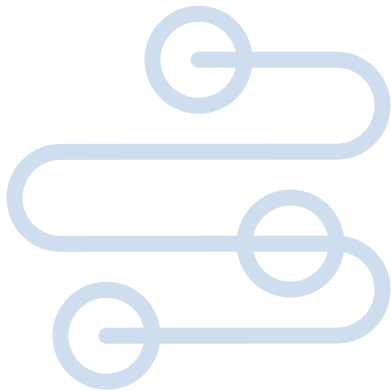
The SIH supports innovation and impact in seaweed hatchery techniques, habitat restoration, farming and wild harvesting, processing, and product and business development. For example, in 2025 our researchers worked with Bee Sea Kelp to test and improve their seaweed seeding and outplanting product, which resulted in evidence-based marketing for their products. We also supported Sea Forest to develop a new product, and collaborated with Mike Wright and Associates to develop innovative kelp restoration techniques.



Industry Partner, Tom Campbell, West Coast Kelp, collecting bull kelp samples.



Student Research Assistant, Senne Vandebek, checks on kelp spools in the Seaweed Innovation Lab. The spools are used for restoration, cultivation and testing approaches.



Learn more about additional CARTI & Seaweed
Innovation Hub projects on our website:
www.nic.bc.ca/research

Social Innovation Projects

Denman Feeding Denman

The Denman Island Growers and Producers Association (DIGPA) aims to expand grain and pulse cultivation to support local food and livestock feed needs. While members have had success with small-scale trials, gaps in information and equipment limit production at a scale suitable for Denman Island's 1,500 residents and its small, mixed-condition fields. This research builds community awareness, farmer capacity, and innovative small-scale equipment, with lessons shared with other communities facing similar challenges.

Impact

The project engaged the Denman Island community in advancing food security and local self-sufficiency. With support from student research assistant Kayla Storkson, the team presented our research at Denman Island's Seedy Saturday event, where over 30 free wheat seed packets were distributed to residents. Kayla and the project lead also conducted variety trials for dried beans on Denman and wheat in Royston. In the fall, the team co-hosted a Seedfest event that enabled residents to thresh, clean, and mill their own seed using small-scale equipment. The event also supported experiential learning for North Island College engineering students focused on appropriate small-scale agricultural technologies.



Rows of wheat growing on Denman Island.



Mapping CV ICCE for Older Adults living with Dementia

This project uses a participatory approach to map the ecosystem of services and supports for older adults living with dementia and their caregivers in the Comox Valley. Guided by the TransForm collaboration's seven principles for integrated community care, the research reflects diverse needs, preferences, and formal and informal supports. Community engagement and capacity building help identify existing resources and gaps needed to better support people living with dementia and their carers in the region.

Impact

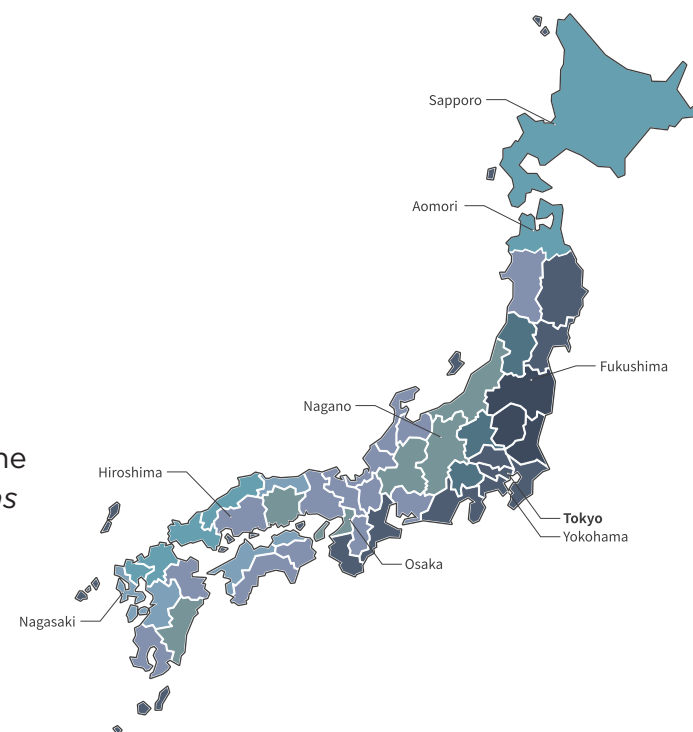
The Mapping the Dementia Care Ecosystem in the Comox Valley study aims to improve care for older adults living with dementia while providing NIC students with valuable hands-on research experience. Through this work, students built skills and professional networks, with one continuing on a CARTI-supported project and another pursuing a health career focused on supporting older adults.

Japanese Canadians of Vancouver Island

In this project, researchers and community partners are writing and publishing two books in which they will uncover the inter-connected legacies of Japanese Canadians on Vancouver Island by focusing on the social, economic and cultural contributions of these settler communities to Canada and beyond. The first book is titled *Japanese Canadians of Vancouver Island* and the second book is called *There Once was a Community: Japanese Canadians from Nanaimo, B.C., Canada Before, During and After Internment*.

Impact

The Japanese Canadians of Vancouver Island project has engaged with descendants of the pre-World War II families who were on Vancouver Island in 1942, providing them preliminary findings from our research that fills gaps in their family histories. Maps of each of the settlements on Vancouver Island are being drafted by the student research assistants and shared with the families.



Learn more about additional CARTI Social Innovation projects on our website: www.nic.bc.ca/research

Indigenous Language, Culture & Leadership

Learning Our Way

This project builds on long term relationships between NIC's Nursing program and First Nation Communities on Northern Vancouver Island address systemic racism and promote health equity for Indigenous people and communities on northern Vancouver Island.

This project designs, implements and evaluates transformative reconciliation initiatives in partnership with Indigenous communities, health authorities, post-secondary education institutions and North Island College.



Nursing students follow an Elder on the beach.

Impact

Community members reported that seeing nurses who had attended field schools in their communities increased trust, respect, and confidence in advocating for themselves within the health system. Field school participants described meaningful changes in practice, including greater awareness of Indigenous-specific racism, increased comfort with reconciliation-focused conversations, and

the integration of anti-racist approaches into daily work. Strong support from Indigenous partner communities and health and education providers enables the Learning Our Way project to continue, with resources and future opportunities shared through its website: <https://www.learningourwayfn.com/>

Virtual Reality Technology Innovation

This project examines whether virtual reality (VR) can effectively support initiatives important to the Huu-ay-aht First Nation, a remote Indigenous community on Vancouver Island. It explores the benefits and challenges of VR for education and tourism, assesses community interest, and aims to develop a culturally appropriate, sustainable VR experience or training program that provides long-term value. The project also focuses on building local capacity in emerging technologies and is carried out collaboratively with community members, college students, teachers, and local youth.



Lead Researcher, Tony Trudel, has a member of the community test out the virtual reality equipment in Bamfield.

Impact

Over the past several months, the research team has engaged with Huu-ay-aht citizens across generations. Youth at Bamfield Community School, Elders in the Nananiqsu (grandparent) group, members of the H̱awiih Council (comprised of Hereditary Leadership), and staff at the Anacla Government Office have participated in hands-on VR demonstrations and interviews. Through these activities, the team is gathering input on community needs, values, and concerns to inform culturally relevant, accessible, and engaging VR experiences.

Learn more about additional
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Outreach, Education, Knowledge Mobilization

Seaweed Series

The Seaweed Series highlights innovative work in the seaweed industry by local and international growers, processors, regulators, researchers, and business development professionals. In the one-hour online sessions, special guests from the seaweed industry talk about their work, followed by questions and discussions on their work.

Previous seminar topics and recordings are available at <https://www.nic.bc.ca/about-us/research/carti/projects/seaweed-series/>.

Seaweed Industry Training

CARTI is leading industry training to respond to research partners' needs that emerge through project collaboration. This year, training included hands-on sessions for seaweed hatchery and cultivation knowledge and skills, including bioreactor training, sori collection and processing, and kelp bed measuring and monitoring for ecological restoration and protection. Participants receive materials and basic toolkit associated with the sessions, and are able to reconnect with CARTI researchers as they apply their learning to their work. Next year training modules will focus on seaweed harvesting and processing.



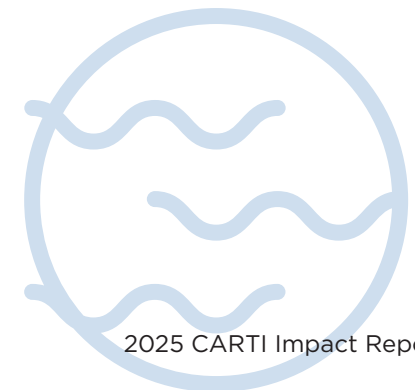
NIC Lead Researcher, Logan Zeinert, explains the bioreactors to Cascadia employee Alexandra Prest during the Seaweed Bioreactor Training.

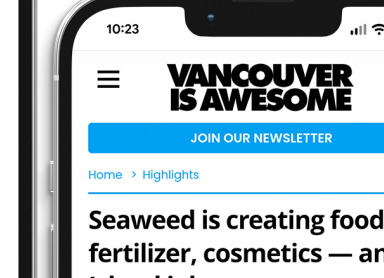
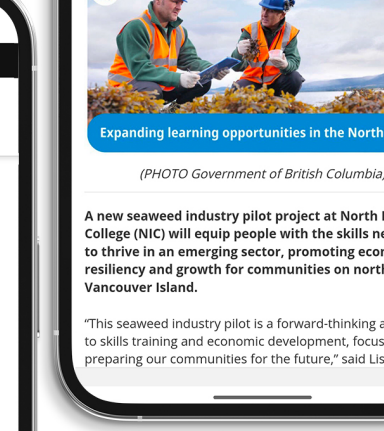
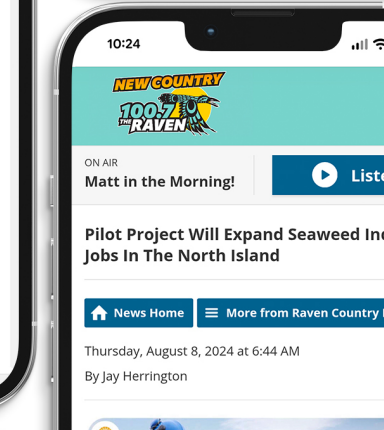
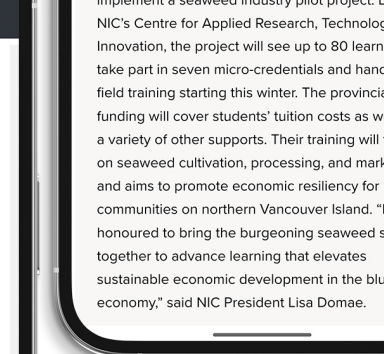
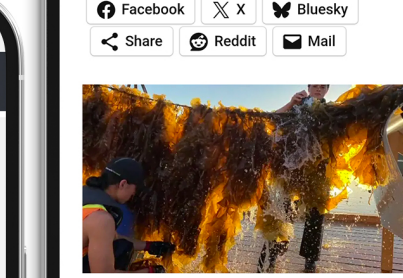
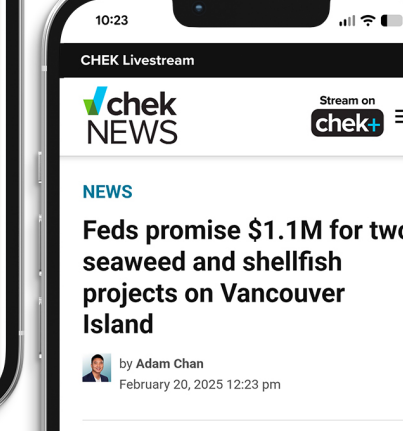
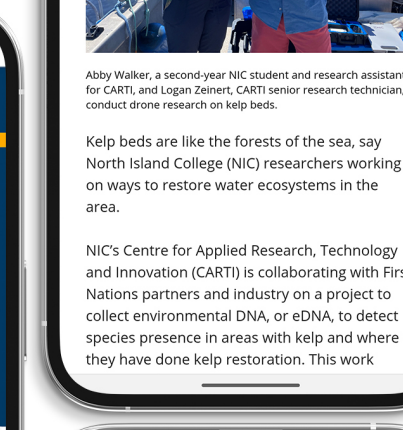
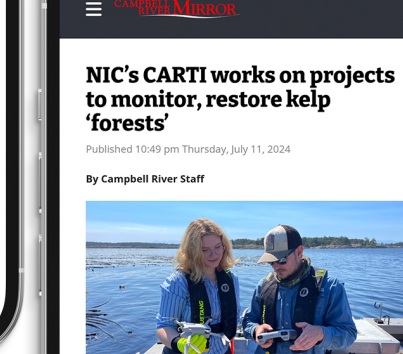
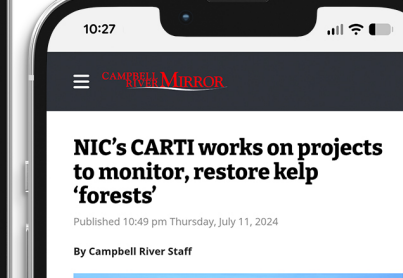
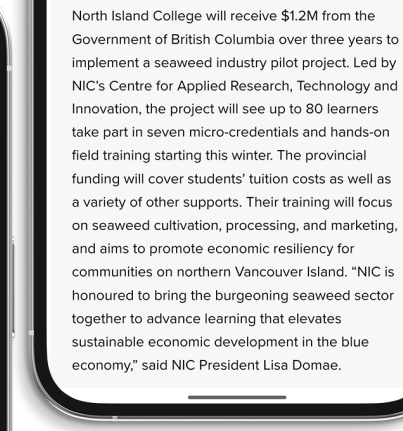
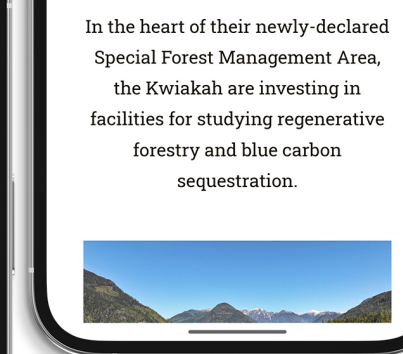
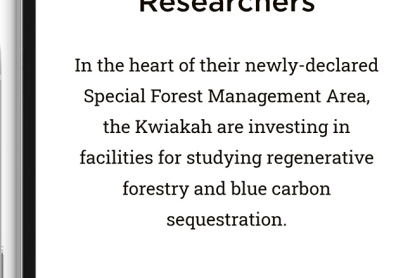
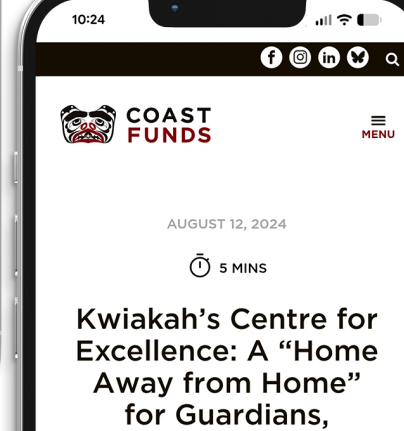
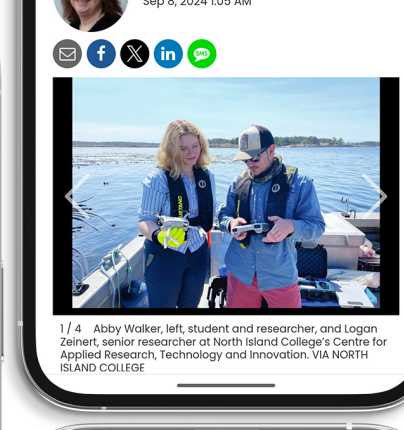
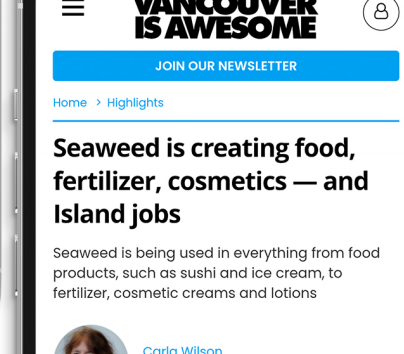
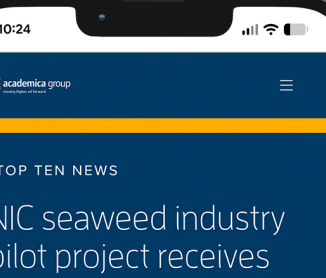
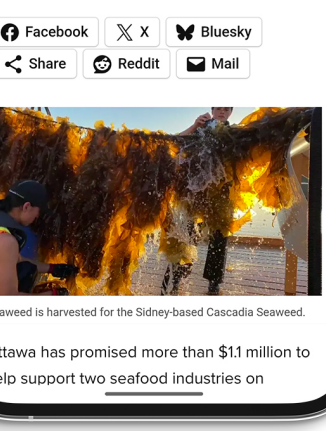
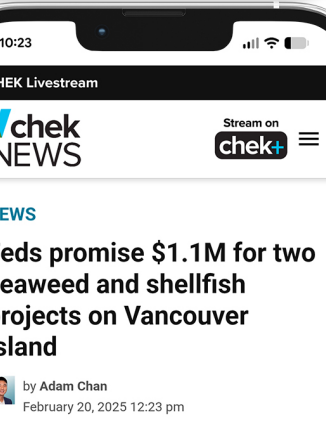
Seaweed Micro-Credential

NIC Trades & Technical Programs, with support from CARTI, offered a seaweed production and processing microcredential (MC). 12 students participated in the first iteration of the MC this Spring (2025) and the program delivered to 36 students again in the Fall (2025), with a hybrid learning model to support participation of students from remote communities.



Student field trip to Klahoose First Nation.





Student Profiles

Student research assistants are critical to CARTI and our work to tackle community and industry challenges through innovation. CARTI connects with local businesses and organizations so we can find solutions together. Hiring student research assistants for research projects provides relevant skills training to students and complements their classroom learning while supporting local businesses and services. These positions also help build a skilled local workforce, increasing future employment and innovation potential in the region.

Amber Urbshas



Amber Urbshas, in the foreground, checking on Geoducks with Lead Researcher Logan Zeinert and fellow student research assistant, Shea Watson.

Projects working on:

- The Seaweeds Innovation Hub
- Central Coast Geoduck
- Kelp Habitat Banking

I've worked with CARTI for 1.5 years. I've been lucky enough to visit the Heiltsuk First Nation territory of Bella Bella and the Kitasoo Xai'xais territory of Klemtu twice now, for the Central Coast Geoduck project. Both trips were incredible experiences with welcoming communities that had a lasting impact on me. I feel lucky to have gotten to travel to, and work with the Heiltsuk and Kitasoo Xai'xais First Nations.

CARTI gave me opportunities I might never have experienced, always ensuring students feel included and are both learning from, and enjoying their work.

The experience with CARTI and NIC was a great introduction to a healthy workplace that supports and values team members.

The environment included both supervised and autonomous work where students learn to take responsibility of their project, and when to ask for help. My time at CARTI has taught me to keep my standards high for future employment, that I should feel valued and encouraged in future workplaces.

Tylar Neuman



Tylar Neuman

Project(s) working on:

- Kelp Restoration

I have worked with CARTI for just over five months. The hands-on experience and friendly, helpful work atmosphere gives me the ability to constantly learn new things, try new things, and ask questions without feeling stressed or worried about making mistakes.

The experience gained from working with CARTI will provide transferable skills and knowledge that I can apply throughout the rest of my career. The business relationships fostered through CARTI work also provide me with unique opportunities for future career development.

CARTI Team

CARTI Administration Team



Naomi Tabata
Director



Rhianna Nagel
Manager



April Whalen
Administrative Support
Assistant



Sarvin Ergin
Administrative Officer,
Projects and Budgets

CARTI Team



Allison
Byrne



Emma
Courtenay



Heidi
Deagle



Lisa
Domae



Joanna
Fraser



Georgie
Harrison



Jordan
Hawkswell



Dennis
Lightfoot



Scott
McGregor



Matt
Neuwirth



Sarai
Racey



Tony
Trudel



Evelyn
Voyageur



Logan
Zeinert

Funders



Pacific Economic Development Canada

Développement économique Canada pour le Pacifique



Ministry of Post-Secondary Education and Future Skills



Fisheries and Oceans Canada

Pêches et Océans Canada



Ministry of Jobs, Economic Development and Innovation



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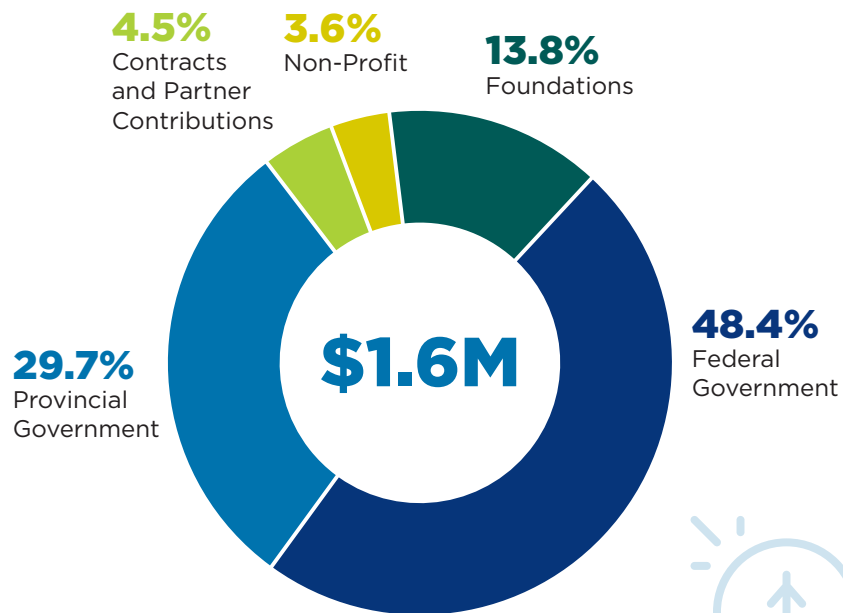
JAPANESE CANADIAN LEGACIES



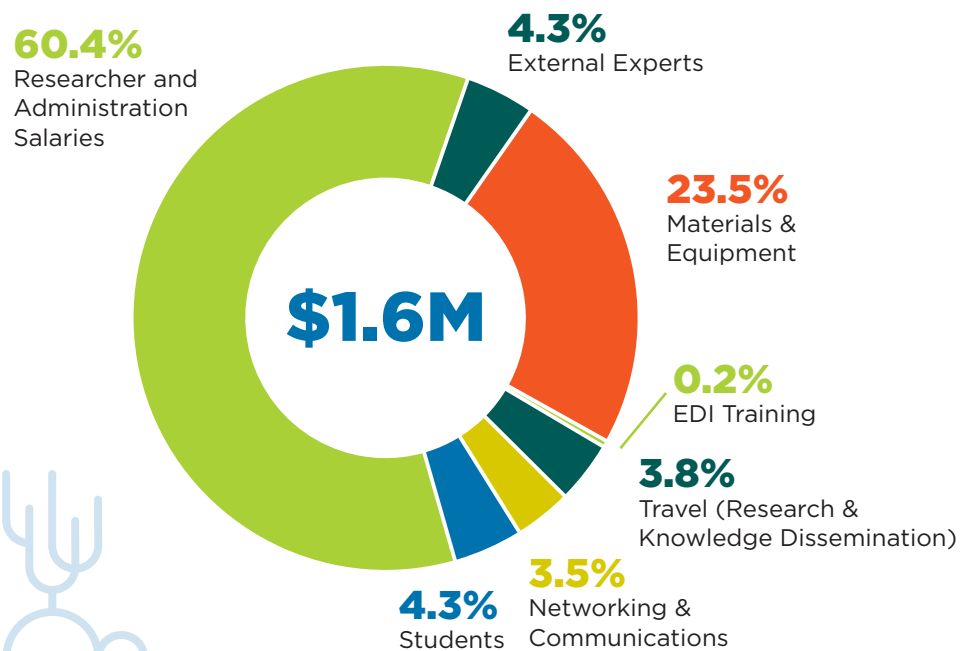
Helping People Help Others



Revenue



Expenses





NORTH ISLAND COLLEGE



RESEARCH AND INNOVATION

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