



MOUNT ARROWSMITH BIOSPHERE REGION RESEARCH INSTITUTE

ANNUAL REPORT 2022 - 2023



JUNE 2023

Prepared by: Mount Arrowsmith Biosphere Region Research Institute (MABRRI)

Prepared for: Vancouver Island University's Associate Vice-President, Research and Graduate Studies, Dr. Nicole Vaugeois and Provost and Vice-President Academic, Dr. Michael Quinn



**MOUNT
ARROWSMITH
BIOSPHERE REGION
Research Institute**



Students, faculty, and staff at MABRRI acknowledge that the Mount Arrowsmith Biosphere Region is within the unceded territories of Snuneymuxw First Nation, Snaw-naw-as First Nation, Qualicum First Nation, K'ómoks First Nation, Tseshaht First Nation, Hupacsath First Nation, and Ditidaht First Nation, and are grateful to have an opportunity to live and learn in this beautiful place.

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Executive Summary

The Mount Arrowsmith Biosphere Region Research Institute's (MABRRI) Annual Report was compiled in accordance to VIU's policies and procedures with regards to Research Institutes. This report provides an overview of MABRRI, including its history and existing research plan, as well as the administrative structure and advisory committee. Ultimately, the purpose of the Annual Report is to highlight the work that was undertaken in the 2022-2023 fiscal year. This report includes a comprehensive list of all MABRRI projects that occurred between April 1, 2022 and March 31, 2023 and the number of community partners and organizations associated with each project. Additionally, the report includes a full list of the VIU students, staff, and faculty that collaborated in one or more of MABRRI's projects this past year. A list of MABRRI's achievements, a review of the financials, and what is projected for the 2023-2024 fiscal year are also included in this report.

MABRRI Highlights

MABRRI conducts, supports, and facilitates research that meets the environment, social, cultural, and economic sustainability goals of the Mount Arrowsmith Biosphere Region (MABR).

Over **\$1.2 M** in research funding awarded

21 VIU students employed

13 Full-time staff

3 Visiting researchers

37 Projects

23 Presentations delivered



24 VIU faculty and staff engaged

Collaborated with

427

community partners from a
variety of organizations

170 Citizen science volunteers

Participated in

85

outreach and education events

Context

The **Mount Arrowsmith Biosphere Region** (MABR) is located within the unceded territories of the Snaw-naw-as First Nation, Qualicum First Nation, Hupacasath First Nation, Ditidaht First Nation, Tseshaht First Nation, Snuneymuxw First Nation, and K'ómoks First Nation (Mount Arrowsmith Biosphere Region [MABR], n.d. a). Approximately 50,000 residents live within the 118,000-hectare area (49°07' to 49°23'N; 124°06' to 124°40'W) (MABR, n.d. a). The biogeographic zones range from high alpine (1817 metres at the peak of Mt. Arrowsmith) to 300 metres below sea level, and human activities within the biosphere region include forestry, aquaculture, and agriculture, as well as a range of rural to urban land uses (MABR, n.d.a).



The United Nations Education, Scientific, and Cultural Organization (UNESCO) granted the biosphere reserve designation in 2000 as part of its Man and the Biosphere Programme (MABR, n.d.b). The MABR¹ was designated in recognition of the unique mix of ecosystems, the transect of elevations from the peak of Mount Arrowsmith to the depths of the Salish Sea, and the ongoing development pressures on the lands and waters within the biosphere region. Once designated, UNESCO requires that biosphere reserves serve their region and the world as sites of excellence that demonstrate improved ways to resolve human/environment conflicts through local community efforts and sound science (United Nations Educational, Scientific and Cultural Organization [UNESCO], n.d.). The MABR is one of 19 biosphere reserves in Canada, with 738 designated worldwide as of 2022 (UNESCO, 2022).

The boundaries of the MABR are based on the provincial watersheds, encompassing the headwaters of Mount Arrowsmith (1817 m), Mount Moriarty (1603 m), Mount Cokely (1619 m), and the Nanoose peninsula (MABR, n.d. a). It includes the complete watersheds of the Englishman and Little Qualicum Rivers, French Creek, and many smaller tributaries (MABR, n.d. a). The MABR also includes the Ballenas/Winchelsea Islands Archipelago and the surrounding marine area, six provincial parks, and the Parksville-Qualicum Beach Wildlife Management Area.



Figure 1: Map of Canadian Biosphere Reserves

¹It is noted that the term “region” is used instead of “reserve” for the Mount Arrowsmith Biosphere Region, although it is a UNESCO-designated biosphere reserve. This change was made in 2015 following a discussion at the Roundtable. The term “reserve” has legal meaning in Canada, is a federal government construct that was not developed by the First Nations at the Roundtable, and has a geographic definition that is simply not accurate: the biosphere area is not a reserve, preserve, or otherwise protected by the UNESCO designation. The MABR was renamed as “region” to recognize the jurisdictional authority of First Nations, and to provide a more accurate geographic descriptor of the area. It is noted that the Clayoquot Biosphere Region has also amended their name, and other biosphere reserves across Canada are considering the amendment.

Table of Contents

Purpose of this Report.....	1
History of MABRRI	2
Current Administrative Structure	5
Advisory Committee	7
MABRRI Research Plan	8
MABRRI and the Sustainable Development Goals.....	10
VIU Faculty and Staff Involvement.....	11
Project Involvement	12
Activities and Achievements	14
Contributions made to the Research Experiences of Students and the Community	19
Projected Planning.....	24
References	25
Appendix A.....	26

List of Figures

Figure 1: Map of Canadian Biosphere Reserves.....	v
Figure 2: Review Process	1
Figure 3: Location of the Mount Arrowsmith Biosphere Region	2
Figure 4: Administrative Structure of MABR	6
Figure 5: Members of the MABR Roundtable	7
Figure 6: MABRRI's Research Priority Areas.....	8
Figure 7: MABRRI Strategic Plan for Research and Education 2023-2025	9
Figure 8: United Nations 17 Sustainable Development Goals	10

List of Tables

Table 1: List of Staff and Faculty Involved.....	11
Table 2: List of Projects and Number of Community Members and Organizations Involved	12
Table 3: List of Student Research Assistants.....	17
Table 4: Total Number of Research Outputs and Knowledge Mobilization.....	18

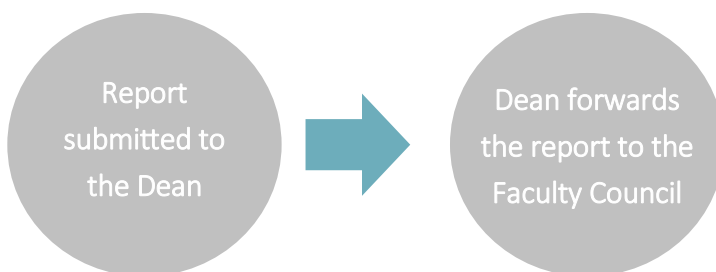
Purpose of this Report

This report is supplied to Vancouver Island University's (VIU) Associate Vice-President, Research and Graduate Studies and Provost and Vice-President Academic.

The report is the summative review covering the past fiscal year from April 1, 2022 to March 31, 2023 for the Mount Arrowsmith Biosphere Region Research Institute (MABRRI), conducted in accordance with Policy 31.11 *Research and Scholarly Activity Centres and Institutes* (RSACI) and Procedure 31.11.001.

Annuals reports must be submitted by the Director to:

a.



b.



Figure 2: Review Process

History of MABRRI

MABRRI was recommended as a University Research Institute by VIU's Provost and Vice-President, Academic and Senate, and approved by the Board of Governors in 2014. The Institute was established subsequent to the MABR transitioning from a charitable not-for-profit model to a regional roundtable, spearheaded by VIU and the City of Parksville.



Figure 3: Location of the Mount Arrowsmith Biosphere Region

MABRRI conducts, supports, and facilitates research that meets the environmental, social, cultural, and economic sustainability goals of the MABR and upholds the mandate of the UNESCO Man and the Biosphere Programme. The purpose of UNESCO's Man and the Biosphere Programme is to improve the relationships between people and their environments through a global network of locally managed and internationally recognized biosphere reserves (UNESCO, 2017). Biosphere reserves support and facilitate collaboration between Indigenous Peoples, stewardship organizations, all levels of government, corporations, academic institutions, and residents. Partners work together to address the four complementary functions of all biosphere reserves: (1) conservation of biodiversity; (2) sustainable

development; (3) support for research, monitoring, and education; and (4) support mitigation and adaptation to climate change. In Canada, we also strive towards a fifth objective; (5) reconciliation with Indigenous Peoples.

Biosphere reserves seek to inspire a positive future by connecting people and nature today. The Research Institute also works to uphold VIU's research and academic plans by creating projects and initiatives that have regional impact and are relevant to First Nations, governments, and local communities.

MABRRI is committed to student success through engagement in community-based applied research. MABRRI offers VIU students paid and volunteer research experiences to help them build their personal capacity and academic curriculum vitae while contributing to VIU's goals relating to experiential learning, local relevance, and scholarly activity.



MABRRI's mission is to advance a program of inquiry that involves all regional stakeholders in meaningful explorations of issues of local relevance. By harnessing the knowledge of the MABR community and the interdisciplinary strengths of students, staff and faculty at VIU, MABRRI seeks to be a centre for collaborative research, innovation, and knowledge sharing that will elevate the relationship between people and nature in the biosphere region.

A brief history of where MABRRI started in 2014 to where MABRRI is now, is outlined below:

2014

MABRRI was officially approved as a VIU Research Institute in 2014. As outlined in the proposal to create the Research Institute, it was stated that the Institute will:

- Encourage research relating to the Biosphere Reserve;
- Acquire and manage funding for student-focused research;
- Engage the community in participatory research;
- Meet the reporting and outreach requirements of UNESCO; and
- Achieve the goals of VIU's Academic Plan.



Dr. Pam Shaw was named MABRRI's Research Director by former Vice President, Academic and Provost, Dr. Dave Witty. The Provost's Office funded two employees to assist with VIU's new partnership in a UNESCO-designated biosphere reserve: Linda Brooyman was hired full-time to advance MABRRI, while Monica Shore was hired part-time to advance the MABR of which the Provost was the Director. Graham Sakaki was hired during his undergraduate degree as a Work-Op Research Assistant (Bachelor of Arts in Geography, specializing in Natural Resource Management). Three internal grants (VIU Research Awards Committee funding) provided a research budget of just over \$20,000.00 during the first year of operation.

2022



Jumping forward to 2022, MABRRI brought in more than a million dollars in revenue. With this funding, MABRRI was able to employ 21 part-time VIU students on 37 projects throughout the academic year. Additionally, MABRRI's full-time team grew to 13 staff. However, MABRRI's greatest achievement in 2022 was measured in our new and ongoing relationships. Regionally, many new partnerships were formed, and the breadth of research and community engagement projects expanded, as well. In total, MABRRI engaged with 427 community partners, and 170 citizen scientists were involved in projects. Additionally, MABRRI hosted and/or participated both virtually and in-person in 85 outreach and education events and delivered 23 presentations. MABRRI has become a recognized name among municipalities, First Nations, researchers, funders, and community members alike. MABRRI continues to work diligently to raise the profile of VIU and expand the range of opportunities available to students.

Current Administrative Structure

The image on the next page illustrates the current internal administrative structure of MABRRI (Figure 4).

Over time, this structure has evolved from an ad hoc three-person team formed in August 2014 to an administrative structure that is intended to:

- Create research experiences for students;
- Help students build capacity in project management;
- Ensure rigor in research design;
- Assist students in building field skills and experiences in community engagement;
- Assist students in building qualitative and quantitative research skills;
- Assist students in advancing presentation and report writing skills;
- Ensure full project oversight by faculty on every research project;
- Provide a point of contact for community members, First Nations, local governments, and agencies interested in engaging students in community-based, applied research;
- Ensure compliance with VIU policies and regulations for staff; and
- Ensure full compliance with VIU's guiding documents and principles.

The **Research Director** and **Regional Research Institute Manager** guide MABRRI's day-to-day operations.

Assistant Managers work alongside the Research Director and Regional Research Institute Manager and provide direct assistance in daily processes.

Coordinators are graduates from a VIU undergraduate or graduate program, and coordinate multiple research projects and community engagement initiatives.

Senior/Junior Research Assistants are graduates or current students from a VIU undergraduate or graduate program who have moderate to high experience at MABRRI and are given higher levels of responsibility on individual projects and/or are working on more than one project.

Student Research Assistants are undergraduate or graduate students with limited experience at MABRRI and are given less responsibility, and generally working on one project.

Special Projects Assistants are graduates or current students from a VIU undergraduate or graduate program who are employed at a part-time capacity to work on specific projects and may have a specialization in a certain field (e.g. GIS and remote sensing, communications and social media, etc).

Visiting Scholars and Researchers are part of the administrative structure on occasion, and must be: self-funded; have research that engages VIU students; engage in research of that matches MABRRI's vision and focus areas; and engage in research that meets all VIU ethical, policy, and regulatory requirements.

Citizen Scientists are students, faculty, and community members who engage with MABRRI for specific research projects or volunteer opportunities, such as the Forage Fish Spawning Habitat Monitoring Project, annual BioBlitzes or community engagement events.

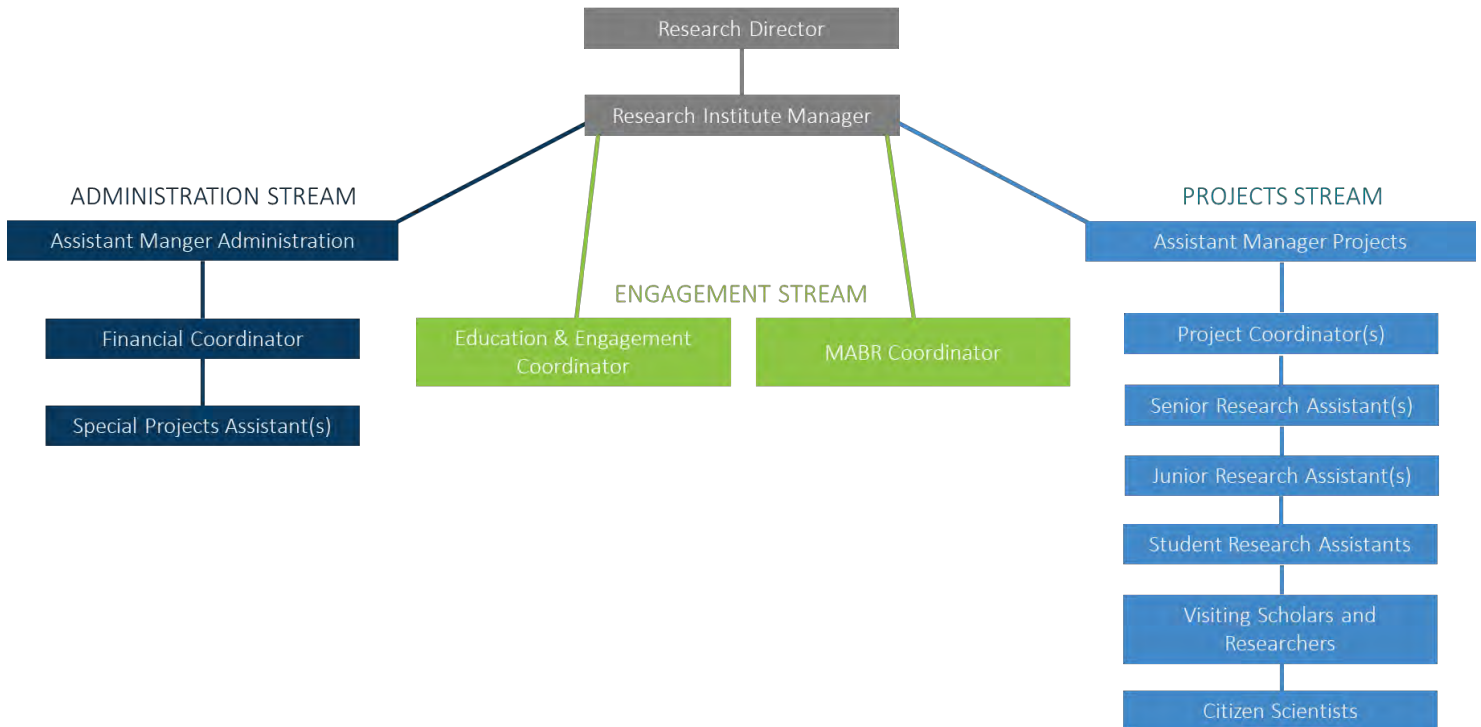


Figure 4: Administrative Structure of MABRRI

As MABRRI grows financially and expands project work and community engagement initiatives, we were able to hire more full-time and part-time employees this fiscal year. With more employees, MABRRI updated the administrative structure to accommodate a growing institute. The new administrative structure is intended to be built out as efficiently as possible, branching into three different streams: Administration, Projects, and Engagement. Each stream has their own working processes and responsibilities, with the goal of less overlap of tasks across positions. We believe this new structure is key to ensuring we each have time to focus on the individual roles of the positions within the organization.

MABRRI is currently located in Building 305, Room 442 and expands to other locations across the Nanaimo campus to accommodate the number of students working on projects. Due to the COVID-19 pandemic, full-time and part-time MABRRI employees implemented hybrid work arrangements that included time at home and time at the office in order to maintain the entire team's safety.

Advisory Committee

MABRRI’s research program is developed at an annual meeting with the MABR Roundtable. The members of the Roundtable serve as the Advisory Committee, and shape the research program by providing direction and information on issues important to the local community.

Members on the Roundtable include First Nations, private entities, agencies, and levels of government with jurisdictional interests in the MABR. Current members are as shown below. MABRRI is also an active member of the Roundtable. In the 2022-2023 year, the Roundtable welcomed two new community representatives, Ray Woroniak and Catherine Watson. Additionally, Renée Jamurat from Islands Trust, Anne Skipsey from the Town of Qualicum Beach, and Sylvia Martin from the City of Parksville joined as new members of the Roundtable.

Membership at the Roundtable is entirely voluntary. The Roundtable is not a legal entity, and the MABR is not a not-for-profit agency. Instead, the partners at the Roundtable have agreed to work together to forward the mandate of UNESCO for biosphere reserves, support the activities of MABRRI, and to move toward greater levels of cooperation and sustainability for the mid-Island area.



Figure 5: Members of the MABR Roundtable

MABRRI Research Plan

The 2023-2025 Strategic Plan for Research and Education was developed through 2022 and involved engagement with the MABR Roundtable. Highlights from the Plan include MABRRI's research priority areas (Figure 6), which are aligned with the strategic objectives of UNESCO's MAB Programme (see Section 2 History of MABRRI). The 2023-2025 Strategic Plan for Research and Education can be found in Appendix A.

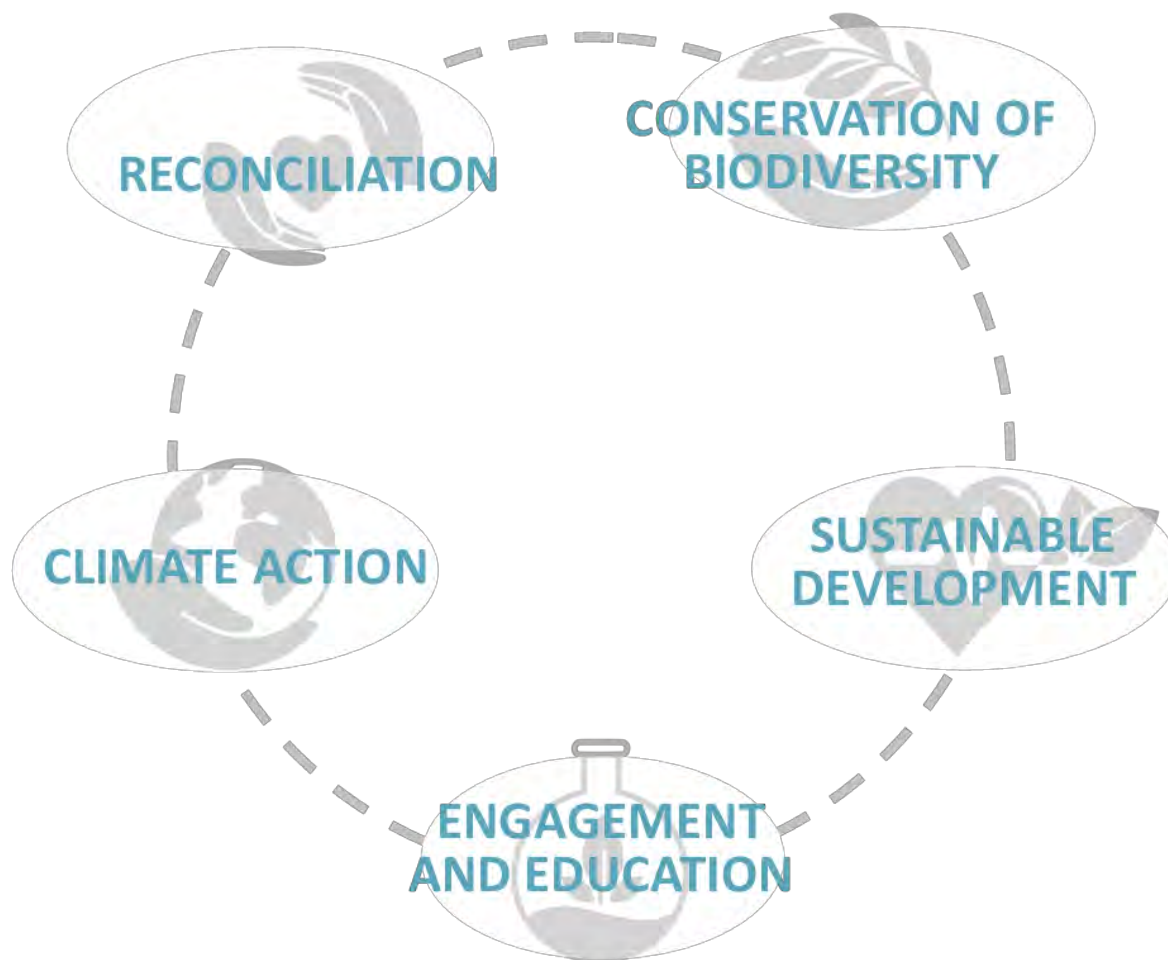
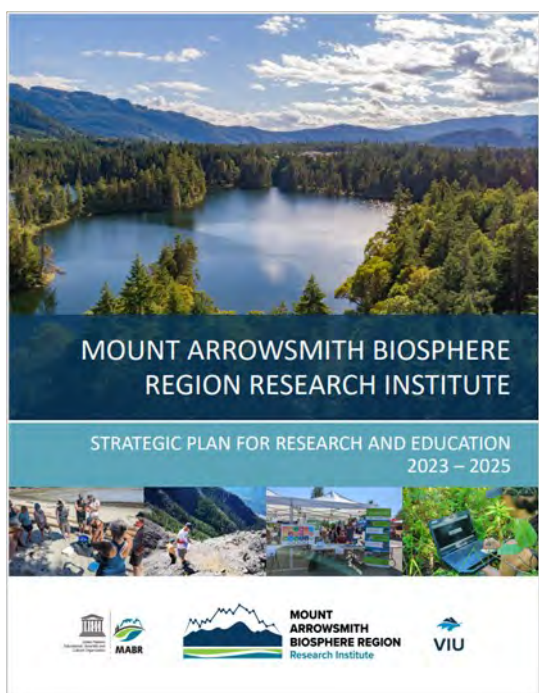


Figure 6: MABRRI's Research Priority Areas

The overarching objective of MABRRI's work is to support the mandate of the MABR, UNESCO's MAB Programme, and align with the priorities and values of VIU. MABRRI's objectives for conducting research are to:

1. Continue to establish meaningful partnerships with a diverse range of people, organizations, and communities in the MABR;
2. Continue to foster relationships with local First Nations based on trust and mutual respect by adhering to the Guiding Principles established in 2015 for collaboration with First Nations (see Appendix A);
3. Facilitate respectful dialogue between MABR stakeholders to determine the current research needs within the MABR;
4. Advance the research goals of the MABR community by providing logistical support, equipment, training, and expertise and encouraging community-based participatory research;
5. Provide a venue for regional partners to share knowledge, review current research, and collaborate on solutions to increase the environmental, social, cultural, and economic sustainability of the region;
6. Provide practical hands-on learning experiences to students at VIU and opportunities for conducting relevant applied research in the MABR;
7. Integrate education about sustainable development, science, and culture in the MABR into VIU course curricula and other educational venues in the region, and;
8. Promote a diverse range of perspectives through interdisciplinary research and collaboration.



Also contained in the Plan is MABRRI's *Vision for Collaboration* with our stakeholders. Building long-term relationships is key to this objective; ideally, research projects will fit the needs of our partners, provide meaningful research experiences for our students, and be of benefit to VIU and the surrounding area. The term “mutual benefit” is the key foundational component of these partnerships.

Figure 7: MABRRI Strategic Plan for Research and Education 2023-2025

MABRRI and the Sustainable Development Goals

In 2015, the United Nations developed the 17 Sustainable Development Goals (SDGs). The SDGs are part of the 2030 Agenda for Sustainable Development and are applicable to all countries (United Nations, 2021). The 17 Goals call all nations, regardless of economic status, to take action towards fostering the social, economic, and cultural prosperity of their citizens while simultaneously caring for and protecting the earth (United Nations, 2021). The achievement of these goals requires efforts from all levels and sectors. As such, the importance of the SDGs has been recognized worldwide by many groups and organizations as an opportunity to help achieve the global agenda.

In 2022, VIU released the new *Strategic Plan 2021-2026* which has identified the SDGs as one of the institution's four key considerations. In addition, through MABRRI's work to conduct, support, and facilitate research that meets the environmental, social, cultural, and economic sustainability goals of the MABR, the SDGs play an important role in the work we engage in. Therefore, all of MABRRI's projects touch on the SDGs in some way. Throughout this report, projects or initiatives that are described will be accompanied with icons of the SDGs that are relatable to the work.



Figure 8: United Nations 17 Sustainable Development Goals

VIU Faculty and Staff Involvement

MABRRI is different from other research institutes in that it is not attached to one researcher or faculty at VIU, nor is it limited to a single research focus: instead, MABRRI is open to the participation of all students and staff, across all faculties and campuses, and across an unlimited range of creative investigations. The 118,000-hectare biosphere region contains a wealth of research opportunities – from endangered species to aging human populations, from ancient fish weirs to high-tech industries, from languages spoken to ways of governance – the potential research questions are as varied as the topography of the MABR.



MABRRI is different, as well, in that UNESCO holds the designation for the MABR and there are actions and reporting requirements that must be met to maintain this designation. A positive element of this are the national and international connections made possible through the Canadian Biosphere Reserves Association, the Canadian Commission for UNESCO, EuroMaB, and other programme sectors of the United Nations.

VIU and the local community benefit from the founding of MABRRI through new scholarly activity that involves the wider community and advances knowledge on the history, culture, lands, waters, species, and people in the region.

Many VIU faculty and staff have been part of the research initiatives completed in the last year as project leads, technical experts, student mentors, and occasional volunteers at activities hosted by MABRRI. The depth of knowledge and commitment of staff at VIU is astounding: involvement in research generally does not include financial benefits or a reduced course load, but this has certainly not been a barrier to involvement.

The following staff and faculty from VIU were involved in projects with MABRRI this year:

Alan Gilchrist	Geoff Ball	Matthew Bowes
Bettina Ruhstein	Irlanda Price	Marlene Rice
Carl Buttersworth	Jessie Magee-Chalmers	Mark Holland
Daniela Fischer	John Morgan	Margot Croft
Don Alexander	Lindsey Chase	Nancy Hamilton
Farhad Moghimehfar	Lindsay McCunn	Rachel Stern
Florence James	Lori Evans	Roisin Mulligan
Geraldine Manson	May Norman	Sylvie Lafreniere

Table 1: List of Staff and Faculty Involved

Project Involvement

Partnerships are key to upholding MABRRI's mandate, mission, and vision for research. Many of MABRRI's accomplishments could not be done without the ongoing support and enthusiasm from community individuals, groups, and partners. We are grateful to all who have come together in a collaborative effort to make this year a success. Included below are the number of agencies, First Nations, local governments, community members, and volunteers that MABRRI has engaged with over the last year on short-term initiatives and ongoing projects.



Project	Community Members Involved	Organizations Involved
Aboriginal Coalition to End Homelessness Society Property Search: Indigenous Gathering Space	2	1
Amazing Places	2	1
Braiding United Nations Global Agendas: Supporting the SDGs and UNDRIP through the Canadian Mountain Network	9	2
CBRA Reconciliation Reports	3	2
Chamber of Commerce Business Community Survey (Parksville & Area CC, Town of Qualicum Beach CC)	1	1
Coastal Forest Plant Phenology Research & Monitoring Project	8	2
Community Watershed Monitoring Network	3	1
Denman Island Housing Policy Review	1	1
Ecological Accounting Process (EAP)	31	10
Ecological Research as Education Network (EREN) Permanent Forest Plots	1	1
Forage Fish Spawning Habitat Monitoring	101	25
Gerald Island Restoration Project	1	1
Global Observational Research Initiative in Alpine Environments (GLORIA)	5	1
Indigenous Homes Innovation Initiative (IHII)	6	2
Interior Spaces Project (VIU Campus Development)	3	1

International Journal for UNESCO Biosphere Reserves	5	5
KFN Renderings Part 2	4	1
MABR BioBlitz	4	2
MABR Youth Program	2	0
Marine Debris Surveying	11	1
Milner Gardens & Woodland Strategic Plan Survey	0	1
Nanoose Bay Recreational Shellfish Harvest Monitoring Project	32	2
Pacific IPCA Centre	38	17
Qualifying UNESCO Buffer Zones as Other Effective Conservation Measures (OECMs) within the MABR	34	21
Sayward Reports: Housing Needs Assessment, Age-friendly Plan, Active Transportation Study & Demographics and Land Base Report	4	2
SDG Youth Community Grant	1	1
Snaw-naw-as First Nation Garden of Spiritual Healing	13	1
Snaw-naw-as First Nation Highway Signage Project	6	4
Traditional Plant Workshop	4	2
The View from 2117: Canadian Mountain Network	6	5
Timing Windows in the Regional District of Nanaimo	2	2
Town of Qualicum Beach Development Approvals Review Project	22	1
Traditional Place Names	2	1
Universities and the SDGs (VIU SDGs)	10	8
Vancouver Island Economic Alliance (VIEA): Wood Recovery and Fuel	4	4
VIU People Plan Refresh	22	1
Wetland Mapping & Monitoring in the Regional District of Nanaimo	24	6
TOTAL	427	105*

Table 2: List of Projects and Number of Community Members and Organizations Involved

*Please note that 105 is the total number of organizations involved, however, some are involved in multiple projects.

Activities and Achievements

Highlighted Activities

The following provides a snapshot of research projects and/or community engagement initiatives but should not be considered a full report on all actions that were completed between April 2022 and March 2023. As MABRRI typically has more than 20 projects running at one time, including every project would have resulted in a very lengthy report. If interested, up-to-date information on each project is available on MABRRI's [website](#).

Forage Fish Spawning Habitat Monitoring Program

MABRRI's forage fish project has been ongoing since 2017, made possible through the dedication of community members who volunteer their time to contribute to an ever-growing network of citizen scientists throughout coastal British Columbia. The program aims to minimize data gaps existing in British Columbia surrounding forage fish spawning activities. The sampling methodology focuses on identifying spawning beaches used by Pacific sand lance and surf smelt. As a member of the British Columbia Forage Fish Monitoring Network, we can collaborate and share resources with many other organizations conducting forage fish research, and submit data to the open-access database, Strait of Georgia Data Centre. MABRRI could not do this work without the continued support of our sponsors at the Sitka Foundation and the Pacific Salmon Foundation.





Ecological Accounting Process (EAP)

MABRRI has worked with the Partnership for Water Sustainability of BC (PWSBC) for the past six years, trialing the Ecological Accounting Process (EAP). EAP is a methodology developed by Tim Pringle to incorporate natural assets into municipal management. EAP considers land use and conservation to be of equal value, and provides municipalities with a methodology to determine how much should be invested in maintenance and management of stream corridors and riparian ecosystems. Now that EAP has been successfully tested in multiple streams within municipalities in BC, MABRRI is partnering with PWSBC and three local municipalities, the Regional District of Nanaimo, the City of Nanaimo, and the Municipality of North Cowichan, to operationalize EAP over the next three years. The objective of this phase is to improve the effectiveness of EAP as a strategy within municipalities in BC, by further refining, sharing with a wider audience, and working with partners to address associated research questions.



Braiding United Nations Global Agendas: Supporting the Sustainable Development Goals and Declaration on the Rights of Indigenous Peoples through the Canadian Mountain Network

Completed in 2022, Braiding United Nations Global Agendas was a multi-phase project in which MABRRI assessed the research and knowledge sharing initiatives within the Canadian Mountain Network (CMN) to highlight the ways in which they support the United Nations Declaration on the Rights of Indigenous Peoples and the Sustainable Development Goals. With CMN initiatives that support the braiding of Indigenous knowledge with western science across Canada, this project highlighted the importance of Indigenous knowledge in place-based research settings. Through conversations with researchers and knowledge holders within the Network, this project illustrated the ways in which CMN's funded initiatives work to support all levels of positive action- from the community level to supporting global frameworks. The project was guided by a skilled Technical Advisory Committee and produced a series of reports and knowledge dissemination materials, which can be viewed on the [CMN's website](#).



Presenting on the project at CMN's Annual Knowledge Sharing Summit in June 2022.





Sayward Planning Reports

In 2022, MABRRI assisted the Village of Sayward, a small coastal community on Vancouver Island, with a series of planning documents to support their upcoming Official Community Plan update. This included an Age-Friendly Plan, an Active Transportation Study, a Demographics and Land Base Report, and a Housing Needs Report. MABRRI staff completed community engagement, survey dissemination and analysis, GIS mapping, demographic and housing data collection, and final reporting for the Village of Sayward. Policies and plans were informed by community input, past engagement, and existing initiatives in the community.



MABR Youth Program

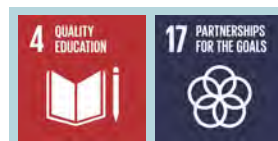
The MABR Youth Program is an ongoing initiative that was developed to introduce the MABR to youth in the region. Although there are numerous ecological education youth programs in the MABR, none of them specifically discuss the MABR or biosphere reserves. The Youth Program offers four unique workshops to schools in the region cost-free. Three workshops are tailored to elementary students and focus on coastal ecosystems, terrestrial ecosystems, and sustainable development. The fourth workshop is tailored to high school students and focuses on the United Nations Sustainable Development Goals (SDGs). Each workshop consists of an in-class presentation accompanied by interactive learning activities. In the coastal and terrestrial workshops, students also go on field trips to partake in experiential learning opportunities. Each of the workshops highlight the MABR and sustainability within the region.

In addition to the workshops, VIU students were hired in 2022 to develop a series of printable activities for youth to do at home, as well as Biosphere Booklets for teachers to use in the classroom. The Biosphere Booklets focus on various aspects of sustainability and utilize the current BC Curriculum to provide teachers with new and exciting ways to engage their students with sustainability at the local level. Each booklet includes a lesson plan and several activities, some of which can be taken outdoors. Booklets are currently available for grades 1-7.



Highlighted Achievements

The following highlighted achievements reflect this year's successes in upholding MABRRI's research plan, including: students hired to work on research projects and community engagement initiatives; outreach and education events that were attended or hosted; presentations that were delivered; conferences that were attended or hosted; and documents and reports that were completed.



MABRRI's Student Research Assistants

Name	Enrolled Program	Undergraduate/Graduate
Adam Smith	Masters of Community Planning	Graduate
Adrian Myszka	Masters of Community Planning	Graduate
Alicia McLean	Masters of Community Planning	Graduate
Andrew Nisha Gnanasingarajan	Masters of Community Planning	Graduate
Caelen Middleton	Masters of Community Planning	Graduate
Desarae Poier	Biology	Undergraduate
Emma Adams	Masters of Community Planning	Graduate
Holly Yee	Masters of Community Planning	Graduate
Kate Fenton	Masters of Community Planning	Graduate
Maily Lai	Masters of Community Planning	Graduate
Mark Gledhill	Masters of Community Planning	Graduate
Mikaila Montgomery	Masters of Community Planning	Graduate
Nadine Wiepning	Masters of Community Planning	Graduate
Pooja Choudhary	Masters of Community Planning	Graduate
Shirley (Yi) Shi	Graphic Design	Undergraduate
Sam Bass	Geography	Undergraduate
Sam Yagnyatynskyiy	RMOT	Undergraduate
Sierra Bready	Geography	Undergraduate
Samual Gerrand	Masters of Community Planning	Graduate
Vladis Tsybikov	Geography/ADGISA	Undergraduate
Vidhi Kyada	Masters of Community Planning	Graduate

Table 3: List of Student Research Assistants

MABRRI's Research Outputs and Knowledge Mobilization

Type of Research Output and Knowledge Mobilization	Total
Outreach and Education Events Attended and Hosted (including open houses, information booths, youth programs, partnership building meetings, training sessions, workshops, webinars, etc.)	85
Presentations Delivered	23
Conferences Attended and Hosted	9
Submissions (including reports, grants, publications, news articles, etc.)	52

Table 4: Total Number of Research Outputs and Knowledge Mobilization

Contributions made to the Research Experiences of Students and the Community

The previous section provided a snapshot of activities and achievements. This section will discuss in more detail further information on MABRRI's contributions to the research experiences of students and the community.

VIU People Plan Refresh

Developed in 2019, the VIU People Plan is the institutional strategic human resources plan for VIU and one of the six Foundation Plans that support the VIU Strategic Plan, People, Place, Potential and VIU's Vision, Ambition, and Values.

The People Plan Refresh is a review of the existing People Plan through extensive engagement opportunities with VIU employees to inform the drafting, approval, and implementation of VIU's renewed institutional People Plan. MABRRI was retained to lead and facilitate the engagement strategy with VIU employees throughout the fall of 2022. MABRRI initiated the engagement process by hosting an in-person Launch Event on October 12th at VIU's Nanaimo Campus. The event was promoted through VIU communication channels and posters were displayed all over the campus. The intent of the Launch Event was to inform VIU employees of the project and the various synchronous, asynchronous, online, and in-person engagement activities planned throughout the fall of 2022 to encourage participation while also gathering feedback through multiple styles of engagement.

There were multiple ways to be engaged and share feedback. The overarching engagement questions were the same, see below:

1. In your opinion, what needs to change or evolve in the current People Plan?
2. In your opinion, what works and needs to stay the same in the current People Plan?
3. What should be the vision for the updated People Plan?
4. What does the workplace look like in the future?
5. Share opinions on desired actions or strategies for the five Invitations to Actions in the current People Plan.

Feedback was gathered through the following style of engagement:

- Informational posters – a review of the informational posters showcasing the current People Plan highlights, work done to date, and success matrix.
- Poster-style engagement – using the sticky notes provided, participants provided feedback.
- Rapid chats – those who were in a rush were asked to participate in a rapid chat-style discussion on five questions in five minutes.
- Relaxed response - people who felt like having an in-depth conversation were invited for relaxed

response engagement.

- Asynchronous engagement – those who could not attend the Launch Event were given the opportunity to share their thoughts on the digital engagement platform, MIRO Board. A QR Code was provided to access MIRO. A dedicated email was also shared with the VIU employees to gather data.

In total, 43 VIU employees participated in the Launch Event. The entire first-year cohort of the Master of Community Planning Program was involved with the event facilitation. Following the Launch Event, MABRRI facilitated multiple Focus Groups and World Cafés at all three VIU campuses, including Nanaimo, Powell River, and Cowichan, and took advantage of already planned engagements.

Additionally, the MABRRI team met with the People Plan Advisory Committee during milestone stages to get their feedback on the engagement process and report back on some engagement highlights. In the spring of 2023, informed by the fall engagement feedback, the MABRRI team engaged the Advisory Committee in two in-person engagement sessions to facilitate more in-depth conversations about the People Plan Refresh. Data gathered from all the engagement events was comprehensively synthesized and handed over to VIU Human Resources to begin the data analysis and the drafting of the new People Plan. The MABRRI team will be consulted throughout this process.

“As a student who worked on the People Plan project, I found it very valuable to be able to engage directly with employees to learn and appreciate their perspectives. I discovered that the employees always put students first and that they value their work and their respective campuses. I learned about some effective engagement strategies and how they reflect the employees' responses about the aspects of the People Plan that were being reviewed. This knowledge and experience became part of my resume, and I will be able to apply it in future positions.” – Nadine Wiepning, Student Research Assistant



Qualifying UNESCO Buffer Zones as Other Effective Area-based Conservation Measures within the MABR

MABRRI and the MABR are grateful to be among the 19 biosphere regions across Canada to receive funding from Environment and Climate Change Canada for efforts towards enhancing conservation of biodiversity. MABRRI's multi-year project is focusing on activities that aim to enable some of the buffer and transition zones within the MABR to meet criteria for qualification as Other Effective Area-based Conservation Measures (OECMs). OECMs are areas that achieve long-term and effective in-situ conservation of biodiversity, outside of Protected Areas. OECMs offer an opportunity to increase support and recognition for conservation of biodiversity – and other locally relevant cultural, spiritual, and socio-economic values - under a range of management and governance regimes which can be implemented by local Indigenous Peoples, local communities, private organizations, and government agencies.

The designation of OECMs in Canadian biosphere regions aims to support Canada's goal of conserving 30% of land and water by 2030, by contributing to the Canadian Protected and Conserved Areas Database. Within the MABR, we are collaborating with local governments, environmental NGOs, First Nations, and landowners to protect areas of high conservation value that may be at risk of species and habitat loss, as well as engage in restoration activities to enhance natural ecosystems. The main goals of this project include:

1. Assessment of current buffer and transition zones to determine if expanded or modified zones could support biodiversity and conservation;
2. Work collaboratively with regional stakeholders to identify potential areas for OECM designation;
3. Undertake collaborative planning, development of management strategies, and land acquisition to support OECM designation; and
4. Support, participate in, and facilitate local and regional species and risk inventory assessments and restoration activities.



Throughout 2022, activities have included preliminary analyses and stakeholder discussions to identify suitable sites for OECM designation, partnership building with local organizations, and literature reviews. Additionally, one of the first major successes was contributing funding to a collaborative effort for land acquisition to protect 23 acres at the French Creek Estuary.



GLORIA

The goal of the Global Observation Research Initiative in Alpine Environments (GLORIA) project is to document the changes in alpine environments pertaining to species distribution and temperature over time, on both a local and global scale. Data gathered under this initiative is being used to gain an understanding of the key interconnection between alpine climates and biodiversity. Beyond monitoring the impact of changing climates on alpine peaks, GLORIA also aims to assess climate change-induced impacts on biodiversity and habitats while contributing to international efforts to mitigate the loss of biodiversity. As this is a global initiative, observations from target regions worldwide are being compiled under this program and are being shared within the scientific community. There are currently 34 countries participating in the program and 137 active GLORIA target regions.

In the summer of 2006, a target region was established on Mount Arrowsmith with the goal of using GLORIA protocols to create long-term alpine vegetation monitoring plots. The target region is composed of four summits (two upper summits and two lower summits), where each summit represents a varying altitude of vegetation patterns that characterize their respective mountain. Every five to seven years, researchers conduct vegetation surveys on the four summits to assess any visible changes in biodiversity. In addition, each plot has permanent data loggers buried 10cm below the surface that record hourly temperature data. This allows for continuous temperature data that can be directly linked to the health of the alpine vegetation.





MABRRI joined the project in 2016 and took lead of the Mount Arrowsmith target region in 2019. In 2022, the MABRRI team was accompanied by citizen scientists, expert alpine botanists, and VIU undergraduate students to complete the vegetation surveys and replace the temperature loggers on the two lower summit plots. All data collected from the vegetation surveys and temperature loggers were submitted to GLORIA's online database. The two upper summits were accessed a month later by helicopter to recce the plots and replace the temperature loggers. In 2023, the MABRRI team is seeking funding to conduct the vegetation surveys on the remaining two upper summit research sites.



Projected Planning

Continuing Research Plan and Continued Objectives Going Forward

The Strategic Plan for Research and Education was released in 2023 and will continue to guide MABRRI's research focus and objectives through to 2025. This Plan guides the day-to-day actions and long-term planning of MABRRI. The Plan is summarized in Section 5 of this report and attached in Appendix A.

Planned Changes to Membership and the Administrative Structure

While the Roundtable functions well for activities within the MABR, the extension of activities beyond the biosphere region's boundaries indicates the need for an internal committee. In addition, members at the Roundtable noted that their specific expertise is not with research, so additional oversight is required to focus on the research activities of the Institute. Also, Roundtable members noted that their interests are within the biosphere region, and not on research that would take place outside the boundary.

Moving forward, MABRRI is keen to create a VIU Steering Committee containing members from multiple faculties across VIU as well as from the Scholarship, Research, and Creative Activity Office. While the Terms of Reference for this committee will be developed as the first task of the members, it is anticipated that it will mirror other VIU committees and contain highly committed individuals interested in supporting the community-based applied research agenda of VIU. It should be recognized that establishing this committee can take some time, but MABRRI is determined to create the internal committee, as it will be added value to the Research Institute.

As MABRRI grows financially and expands project work and community engagement initiatives, it is anticipated that more part-time and full-time employees will be hired next fiscal year.

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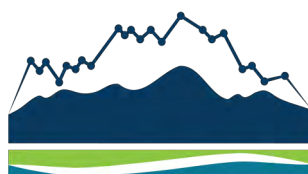
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Appendix A



MOUNT ARROWSMITH BIOSPHERE REGION RESEARCH INSTITUTE

STRATEGIC PLAN FOR RESEARCH AND EDUCATION
2023 – 2025



**MOUNT
ARROWSMITH
BIOSPHERE REGION**
Research Institute



The ideas and opinions expressed within this document are those of the Mount Arrowsmith Biosphere Region Research Institute team, and do not express those of Vancouver Island University, Mount Arrowsmith Biosphere Region, or the Mount Arrowsmith Biosphere Region Governing Roundtable.

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Executive Summary

The Mount Arrowsmith Biosphere Region Research Institute's *Strategic Plan for Research and Education* aims to provide the foundation for the Research Institute to become a regional and international leader in community-based, student-led research.

The 2023-2025 plan includes the next steps for the Research Institute, including objectives for conducting research in the Mount Arrowsmith Biosphere Region and surrounding areas, updated research priorities, as compared to the 2019-2022 plan, and our vision for collaborating with stakeholders in the region.

Table of Contents



Introduction	1
Context	2
MABRRI’s Objectives for Conducting Research	5
MABRRI’s Research Priority Areas	6
Vision for Collaboration	9
Conclusion	10
References	11
Appendix A: Culture of Engagement	12
Appendix B: Guiding Principles for Collaboration with First Nations	13

Introduction

The Mount Arrowsmith Biosphere Region Research Institute (MABRRI) is an academic entity at Vancouver Island University (VIU) that supports and conducts natural and social science research in the Mount Arrowsmith Biosphere Region (MABR) and surrounding areas. MABRRI was established at VIU in 2014 when the MABR transitioned from a charitable not-for-profit model to a regional roundtable partnership model spearheaded by VIU and the City of Parksville¹. MABRRI conducts, supports, and facilitates research that meets the goals of the MABR², the objectives and values of VIU³, and upholds the strategic objectives of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Man and the Biosphere Programme⁴.



2022 Wetland Mapping

MABRRI's mission is to advance a program of inquiry that involves all regional stakeholders in meaningful explorations of issues of local relevance. By harnessing the knowledge of the MABR community and the interdisciplinary strengths of students, staff and faculty at VIU, MABRRI seeks to be a centre for collaborative research, innovation, and knowledge sharing that will elevate the relationship between people and nature in the biosphere region.

Context

The purpose of UNESCO's Man and the Biosphere (MAB) Programme is to improve the relationships between people and their environments through a global network of locally managed and internationally recognized biosphere reserves⁵. In particular,

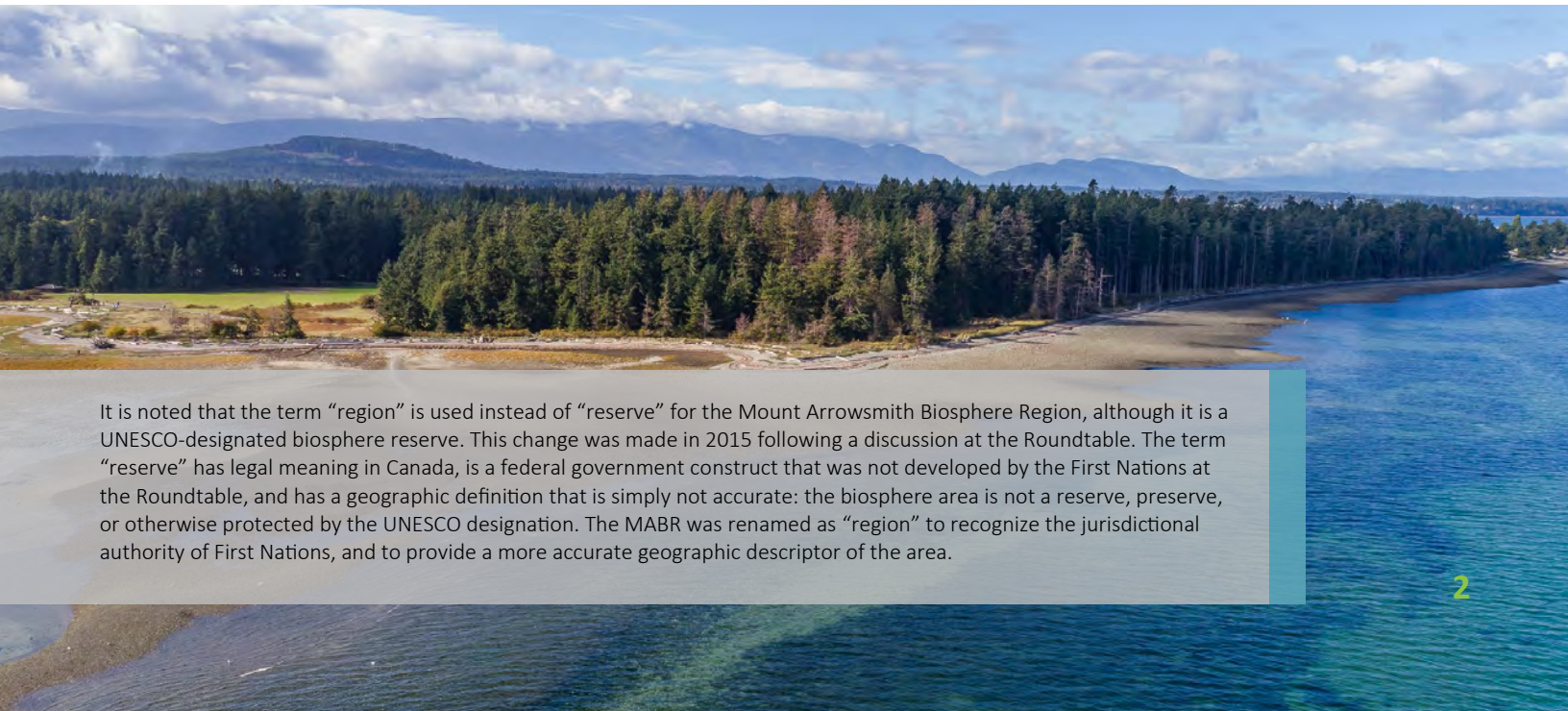
...the MAB Programme, through its World Network of Biosphere Reserves (WNBR) and its regional and thematic networks, will strategically address the Sustainable Development Goals (SDGs) through sustainable development actions in biosphere reserves, carried out in partnership with all sectors of society, to ensure the well-being of people and their environment^{4(p. 3)}.

Biosphere reserves support and facilitate collaboration between Indigenous Peoples, stewardship organizations, all levels of government, corporations, academic institutions, and residents³. Partners work together to address the four strategic objectives of the MAB Programme:

1. Conserve biodiversity, restore and enhance ecosystem services, and foster the sustainable use of natural resources;
2. Contribute to building sustainable, healthy and equitable societies, economies and thriving human settlements in harmony with the biosphere;
3. Facilitate biodiversity and sustainability science, education for sustainable development (ESD) and capacity building; and
4. Support mitigation and adaptation to climate change and other aspects of global environmental change⁴.

In Canada, we also strive towards a fifth objective;

5. Reconciliation with Indigenous Peoples.



It is noted that the term “region” is used instead of “reserve” for the Mount Arrowsmith Biosphere Region, although it is a UNESCO-designated biosphere reserve. This change was made in 2015 following a discussion at the Roundtable. The term “reserve” has legal meaning in Canada, is a federal government construct that was not developed by the First Nations at the Roundtable, and has a geographic definition that is simply not accurate: the biosphere area is not a reserve, preserve, or otherwise protected by the UNESCO designation. The MABR was renamed as “region” to recognize the jurisdictional authority of First Nations, and to provide a more accurate geographic descriptor of the area.

The MABR is located on Vancouver Island, extending from the top of Mount Arrowsmith – the highest mountain on Southern Vancouver Island⁶ – to 300 meters into the Salish Sea⁷ (Figure 1). The boundaries of the MABR make up the approximate boundaries of five major watersheds – Englishman River, Little Qualicum River, French Creek, Nanoose Creek, and Bonnel Creek⁷. Within 1186 square kilometers, the MABR encompasses many unique ecosystems ranging from high alpine and coastal forests to intertidal and marine habitats⁸. The drastic vertical range gives the MABR incredible biodiversity and makes it unique among biospheres in Canada⁸. The region is home to over 45,000 people and is also within the traditional territories of seven First Nations⁸: Qualicum, Snaw-naw-as, K’ómox, Snuneymuxw, Tseshaht, Hupacasath, and Ditidaht.

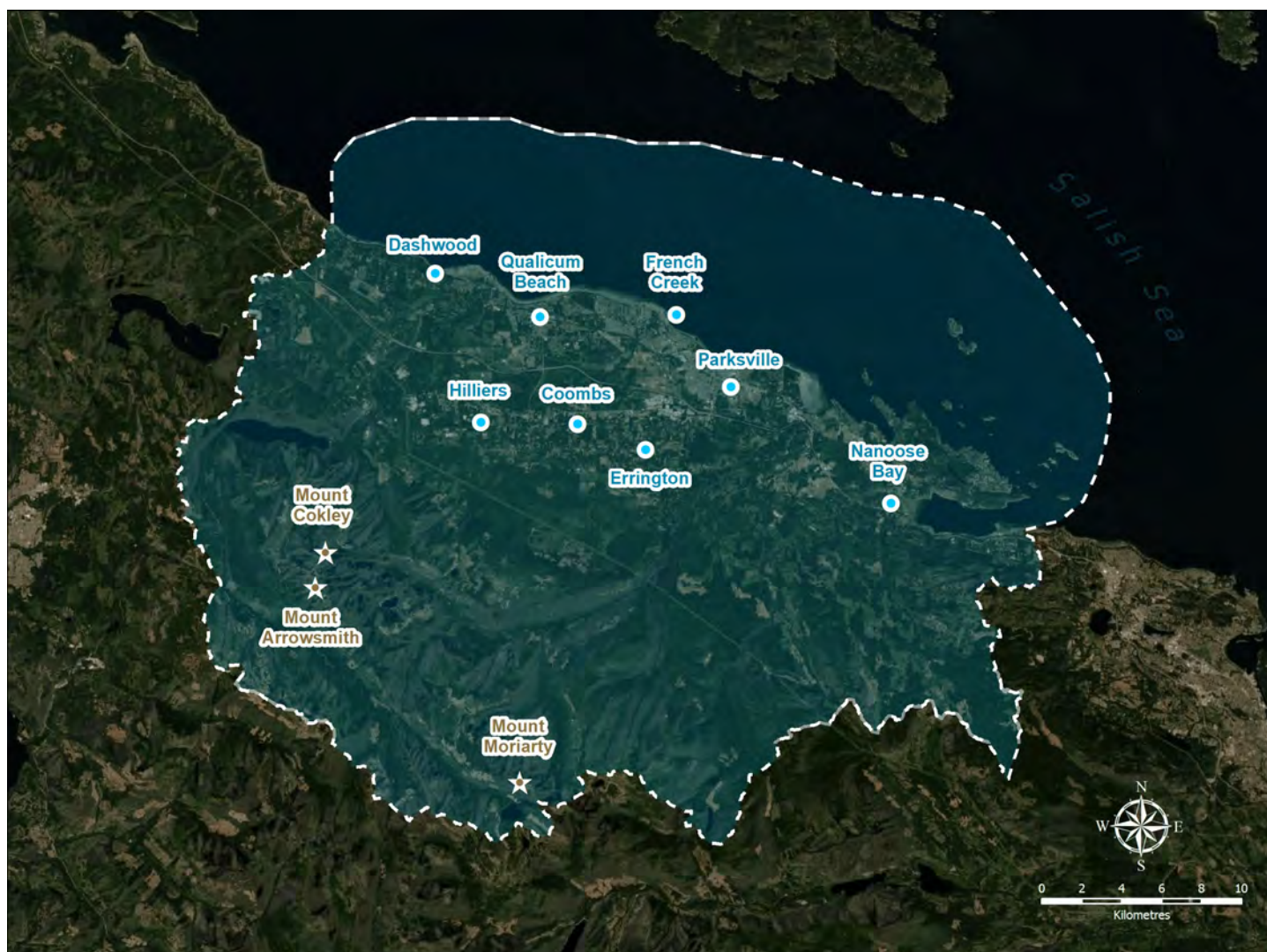


Figure 1: The location of the Mount Arrowsmith Biosphere Region on Vancouver Island

The MABR is currently governed by a Roundtable of stakeholders representing the following organizations: Snaw-naw-as First Nation, Qualicum First Nation, City of Parksville, Town of Qualicum Beach, Snuneymuxw First Nation, Parksville Qualicum Beach Tourism Association, Regional District of Nanaimo, Islands Trust, The Parksville & District Chamber of Commerce, Mosaic Forest Management, and Vancouver Island University¹. There are also two community representatives and one youth representative. The Roundtable members meet quarterly to discuss potential collaborative projects and initiatives, as well as issues that may be occurring in the region. The meetings are guided by two documents that were collaboratively developed by the Roundtable members: the MABR Roundtable Culture of Engagement (Appendix A), and the MABR Guiding Principles for Collaboration with First Nations (Appendix B). As the governing body of the MABR, the Roundtable members also serve as an Advisory Committee to MABRRI, and have therefore provided input on MABRRI's research projects, as well as on the development of this *Strategic Plan for Research and Education*.

Since the development of the previous *Strategic Plan for Research and Education* (2019-2022)⁹, MABRRI's level of research output and competency has increased. This plan will therefore serve to frame the objectives of all future research at MABRRI and refine the focus of research efforts and resources into updated priority areas that will best serve the MABR.

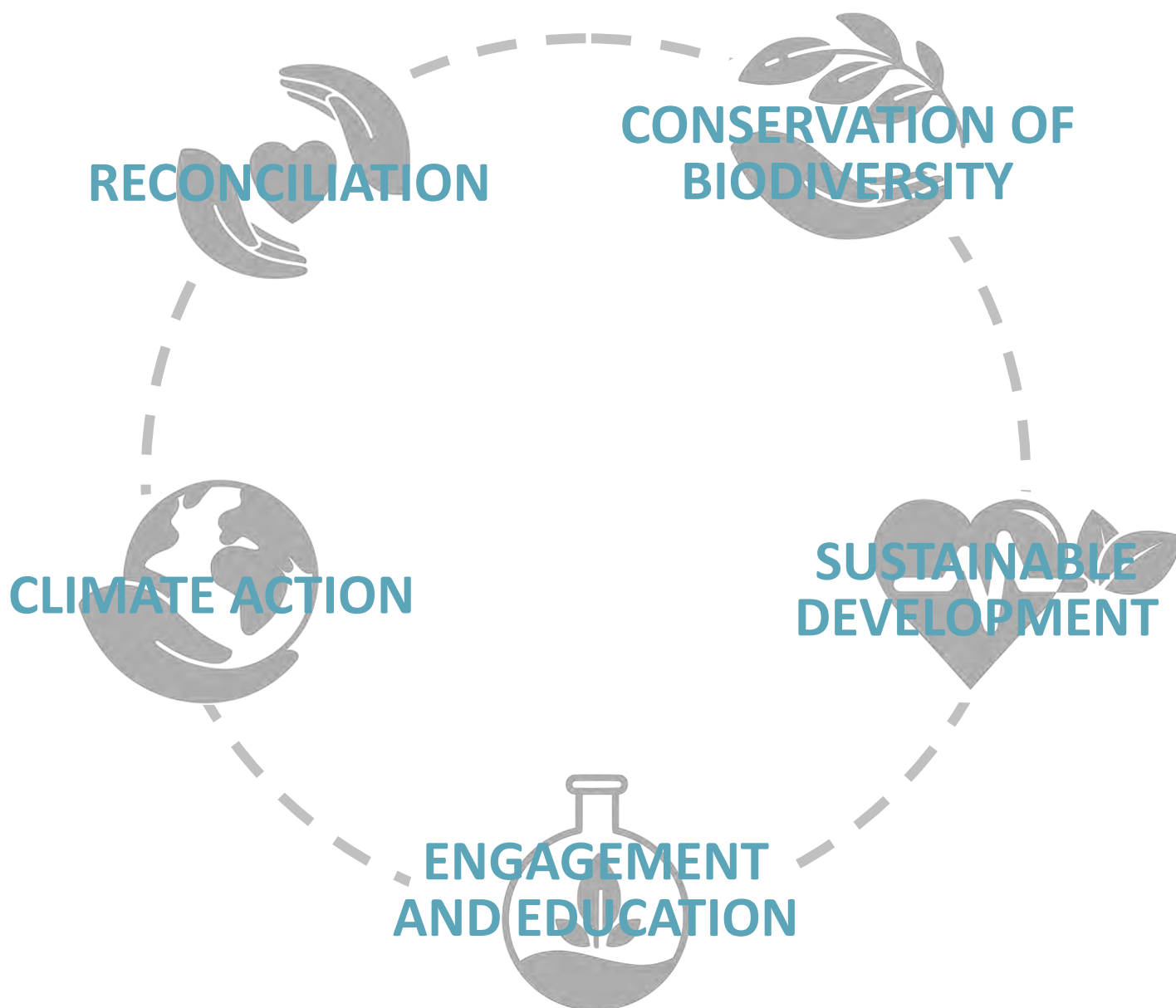
MABRRI's Objectives for Conducting Research

The overarching objective of MABRRI's work is to support the mandate of the MABR, UNESCO's MAB Programme, and align with the priorities and values of VIU. MABRRI's specific objectives echo that of the previous plan and are to:

1. continue to establish meaningful partnerships with people, organizations, and communities within and surrounding the MABR;
2. continue to foster relationships with local First Nations based on trust and mutual respect by adhering to the Guiding Principles established in 2015 for collaboration with First Nations (see Appendix B);
3. facilitate respectful dialogue between MABR stakeholders to determine the current regional research needs;
4. advance the research goals of the MABR community by providing logistical support, equipment, training, and expertise, and encouraging community-based participatory research;
5. provide a venue for regional partners to share knowledge, review current research, and collaborate on solutions to increase and maintain the environmental, social, cultural, and economic sustainability of the region;
6. provide practical, hands-on learning experiences to students at VIU and opportunities for conducting relevant applied research in the MABR;
7. integrate education about sustainable development, science, and culture in the MABR into VIU course curricula and other educational venues in the region;
8. promote a diverse range of perspectives through interdisciplinary research and collaboration; and,
9. ensure compatibility with VIU's strengths, values, and goals in all research activities, reflected in VIU's Strategic Plan 2021-2026, VIU's 2022-2027 Academic Plan, and VIU's SRCA Foundation Plan 2022-2027.

MABRRI's Research Priority Areas

For the 2023-2025 Plan, MABRRI is focusing its research efforts and capacity on the five strategic objectives of the MAB Programme, as detailed on page 2. These priority areas have been updated since the last *Strategic Plan for Research and Education*. Although MABRRI's priority areas themselves align with the strategic objectives of the MAB Programme, sub-objectives have been added to fit the relevance and need of the MABR and surrounding communities. It should be noted that the priority areas below are listed in no particular order, each area will be provided equal attention.





CONSERVATION OF BIODIVERSITY | Conserve biodiversity, restore and enhance ecosystem services, and foster the sustainable use of natural resources

- Maintain strategic, multi-disciplinary partnerships to achieve sustained conservation of biodiversity
- Support long-term data collection and ecological monitoring, and protect and uphold land-based knowledge
- Seek out sustainable, long-term core funding for conservation, restoration, and enhancement projects
- Coordinate participatory research to support community initiatives that enhance environmental sustainability



SUSTAINABLE DEVELOPMENT | Contribute to building sustainable, healthy and equitable societies, economies and thriving human settlements in harmony with the biosphere and surrounding region

- Establish and/or support collaborative initiatives that contribute to harmonious social, environmental, cultural, and economic well-being
- Promote, support, and engage in initiatives in the MABR and surrounding communities that align with the Sustainable Development Goals (SDGs)
- Contribute to community planning initiatives that explore, establish, and demonstrate innovative approaches to fostering resilient and sustainable communities



ENGAGEMENT AND EDUCATION | Facilitate biodiversity and sustainability outreach, education for sustainable development (ESD) and capacity building

- Promote collaboration and support community initiatives that enhance environmental, social, cultural, and economic sustainability
- Enhance knowledge transfer and dissemination in the region
- Strengthen accessibility of community research and education, and provide learning opportunities for VIU students, employees, and the surrounding communities
- Promote and enhance human-nature connectedness



CLIMATE ACTION | Support mitigation and adaptation to climate change and other aspects of global environmental change

- Promote education and awareness of climate change in a local context
- Maintain multi-disciplinary partnerships that support localized adaptation and mitigation to climate change
- Conduct projects that strengthen understanding of the impacts of climate change in the region
- Participate in continuous learning and contribute to initiatives that foster climate-resilient communities in the MABR and surrounding region



RECONCILIATION | Reconciliation with Indigenous Peoples

- Develop and maintain relationships with Indigenous communities and Peoples in the region
- Through free, prior and informed consent, collaborate on initiatives with local Indigenous governments, communities, and organizations that foster positive reciprocity and support Indigenous-directed outcomes
- Maintain openness to learning and unlearning through the processes of Two-Eyed Seeing and braiding knowledge systems

Vision for Collaboration

As outlined in MABRRI's research objectives, a main focus of the institute is the formation of collaborative research projects with various stakeholders in the region. An integral part of MABRRI's vision for collaboration starts with building foundational relationships in the community. In building these relationships, MABRRI is better able to learn about the needs and interests of its partners, which can then be used to identify the most suitable projects to collaborate on. In addition to building relationships in the greater community, MABRRI will also be forming these relationships with students at VIU. There are many ways to incorporate student learning in MABRRI projects, and provide students with relevant research experience in their chosen field. MABRRI hopes to pair some of these students with interested community partners to establish projects that will be mutually beneficial.

One of MABRRI's research objectives is to meet the research needs of the MABR by being open to any person who comes forward with a research project. At the same time, the institute is still growing and developing with a small, dedicated research team. This makes it essential for MABRRI to focus its efforts on a selective number of projects at one time to allow for quality of research and a reasonable turn-around time for projects. In order to balance these needs, MABRRI invites community members and stakeholders to propose project ideas, recognizing that the institute cannot directly conduct and manage each project brought forward; MABRRI can, however, provide advice, technical expertise, contacts, and equipment to assist with project development and initiation. To speak to a member of the MABRRI coordinator team please visit the MABRRI [website](#).



2022 Marine Debris Survey



2022 Forage Fish Citizen Science Training

Conclusion

The next several years are full of opportunity for MABRRI, as the institute continues to develop and expand its research capabilities. During this time, MABRRI hopes that many more people and partners will become involved in its research initiatives and contribute to its success through their innovative ideas, expertise, and passion for the MABR and surrounding regions. This Strategic Plan for Research and Education is meant to serve as a guiding document for the development of MABRRI's research initiatives over the course of the next three years. This document is not intended to limit the creativity, drive, or ideas of knowledge holders, experts or researchers in the region. Within the research priority areas outlined in this plan, there are many areas of overlap between topics, which MABRRI seeks to capitalize on as opportunities for collaboration and knowledge exchange. With its community-based, interdisciplinary approach to research and a dynamic research team, MABRRI is well on its way to becoming a leader for applied social and natural sciences research.



2022 Wetland Mapping



2022 Promotional booth at RockVIU

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Appendix A:

Culture of Engagement

Culture of Engagement

MABR Roundtable



At the Mount Arrowsmith Biosphere Region Roundtable, we engage with one another and with the land and culture around which we gather in the following ways:

- 1) We acknowledge the Traditional Territories within which our meetings are held.
- 2) We demonstrate respect for Indigenous protocol as individuals and as a group, upholding the MABR's Guiding Principles for Collaboration with First Nations.
- 3) Our communication is open, honest, transparent and unemotional, and we are comfortable and willing to discuss potentially sensitive topics.
- 4) Before entering the gathering place, we hang bad feelings on a nail outside the door.
- 5) We work together to reach common goals for the betterment of our region.
- 6) We leave personal wants outside.
- 7) We are open to new perspectives, we seek to understand where each person is coming from, and we share information and beliefs in an environment of trust.
- 8) We listen to each other and work together to ensure that everyone has an opportunity to speak.
- 9) We keep personal stories that are shared in confidence inside this room.
- 10) We arrive and depart feeling at ease, and we look forward to meeting again.

Appendix B: Guiding Principles for Collaboration with First Nations



Collaboration with First Nations

First Nations have lived on the lands that encompass the Mount Arrowsmith Biosphere Region (MABR) since time immemorial. The First Nations of the Salish Sea have a unique relationship with the lands and waters that transcends time. It is a relationship rooted in a deep, rich cultural connection to nature; a connection and relationship that has informed their way of life.

Through its Man and Biosphere Programme, the United Nations Educational Scientific and Cultural Organization (UNESCO) has recognized the MABR for the outstanding qualities of the traditional territories of the First Nations.

MABR's institutional partners, initiated by a collaboration between Vancouver Island University and the City of Parksville, want to work with First Nations in a respectful and supportive relationship that recognizes the special association that each Nation has with its traditional territory, including the MABR. As a UNESCO biosphere region, MABR should complement the interests of the First Nations; not compete with them. To that end, all institutional partners will be directed by the following Guiding Principles in their MABR-related work.

Guiding Principles

The MABR's work will be premised upon processes, procedures and protocols that reflect a collaborative, comprehensive and collegial course of action with First Nations that is rooted in Guiding Principles that:

1. Honour the deep, rich, cultural connection to the land and the sea; a connection and relationship that informs First Nations way of life;
2. Honour the fact that First Nations have lived from time immemorial in their traditional territories and, through that special relationship as stewards of the land, have a unique association with the MABR;
3. Explore and promote ways and means of enhancing the role of the MABR within the region while being respectful of First Nation interests;
4. Continue to develop a trusting and respectful relationship with First Nations and support appropriate projects that First Nations would like to collaborate on, protecting the confidentiality of knowledge or culturally sensitive information of First Nations communities;
5. Establish respectful processes that value First Nation perspectives, methods of decision-making, cultural values and historical connections to the land;
6. Identify First Nation community engagement opportunities and associated research that relates to the mandate of the MABR;
7. Ensure that the interests and perspectives of First Nations frame future discussions about the MABR;
8. Work with First Nations to identify potential sources of funding to undertake MABR-related initiatives of interest to First Nations;
9. Promote the Mandate and Goals of the UNESCO designation in general and the MABR in particular while recognizing that First Nations have a special relationship with the MABR lands that transcends time and creates a special bond with the MABR.

