

MARINE PLAN PARTNERSHIP FOR
THE NORTH PACIFIC COAST

NORTH VANCOUVER ISLAND MARINE PLAN ANNUAL REPORT

2020



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TABLE OF CONTENTS

Message from the NVI Marine Plan Implementation Team	2
Acknowledgements	3
Executive Summary	4
Implementation Progress details	6
Ecosystem-Based Management Indicator Monitoring	24
Looking Ahead	25
Appendix A – Completed NVI Implementation Studies, 2019-2020	26
Appendix B – NVI Marine Plan Advisory Committee Membership, 2019-2020	27
Appendix C – NVI Technical Team, 2019-2020	28



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MESSAGE FROM THE NVI MARINE PLAN IMPLEMENTATION TEAM

On behalf of the Nanwakolas Council and the Province of British Columbia, the North Vancouver Island (NVI) Plan Implementation Technical Team is pleased to present its 2019-2020 Annual Report describing implementation activities during the period of April 1, 2019 to March 31, 2020.

We are pleased to report significant progress in most Plan topic areas and look forward to continuing this important collaborative work. We hope that you enjoy learning about what we have accomplished during Year 5 of implementation of the NVI Marine Plan.

Sincerely,

John Bones (Co-lead, Nanwakolas Council)

Sally Cargill (Co-lead, Province of B.C.)



Photo credit: Barb Dinning.

ACKNOWLEDGEMENTS

We wish to express our sincere gratitude to all the individuals who participated in activities contributing towards the implementation of the North Vancouver Island Marine Plan in 2019-2020. Thanks go to the member First Nations of the Nānwakolas Council: Mamalilikulla, Tlowitsis, Da'naxda'xw Awaetlala, Wei Wai Kum, and K'omoks, and to the Province of B.C. The valued input and advice of members of the Marine Plan Advisory Committee (MPAC) is gratefully acknowledged. These representatives from various marine sectors and interests, as well as local governments, continue to provide expert advice, time, and enthusiasm to the development, review and completion of implementation projects. We would also like to thank the independent consultants, Marine Plan Partnership (MaPP) contractors and other collaborators who helped us to make the past year a successful one.

We also wish to acknowledge the ongoing financial support of funders who contributed to the Great Bear Sea Fund at Tides Canada Initiatives Society.

EXECUTIVE SUMMARY

This annual report outlines key achievements, progress and challenges related to implementation of the NVI Marine Plan in the 2019-2020 fiscal year. The NVI MaPP partner priorities during the fiscal year of implementation were cultural protection, EBM monitoring, economic development, conservation, and governance.

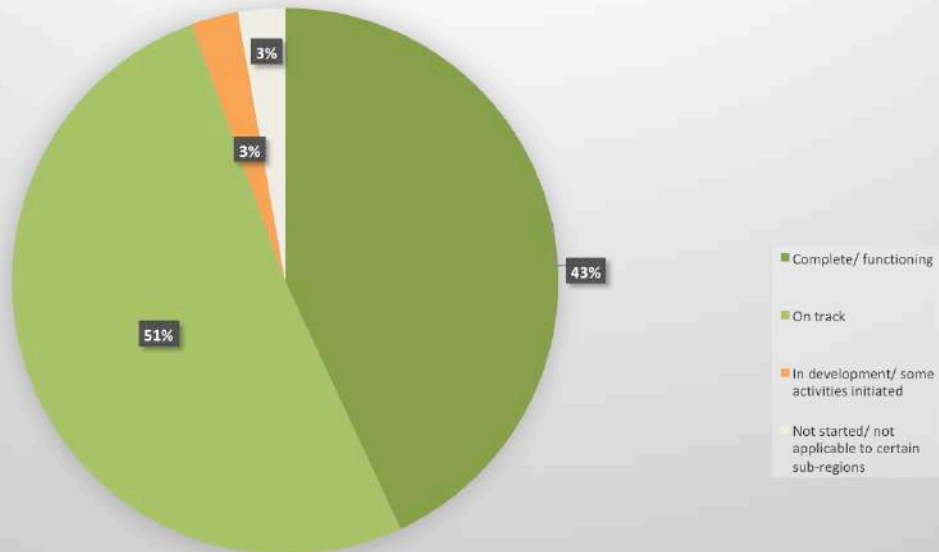
Implementation activities occurred in all five MaPP outcome areas: governance and collaboration; marine zoning; stewardship, monitoring and enforcement; sustainable economic development and healthy communities; and, climate change and adaptive management. In particular, good progress has been made in cultural protection, EBM monitoring, economic development, and marine protection planning. The Guardian Program has played a strong role in supporting the fieldwork components of these projects, particularly EBM monitoring, archaeological assessments and the aquaculture projects.



Challenges faced during the implementation year were those generally associated with management of a large number of contracts, including delays in contract award and delays associated with review of final products. A continuing challenge in the reporting year also related to the dependence on Guardian program staff to assist with or contribute to MaPP projects in the face of many other competing demands for their time.

Looking ahead to 2020-2021, implementation activities are intended to continue key, ongoing activities such as the EBM monitoring program, complete work that was initiated during the past 1-2 years such as the Archaeological Pilot Project, and initiate new priority projects, including plan amendments.

Progress Towards Implementation of Strategies Identified in Year 5 Work Plans



IMPLEMENTATION PROGRESS DETAILS

The initial focus for the NVI Technical Team was to address plan objectives and strategies that lay the foundation for achieving key partner priorities. Plan implementation priorities were identified based on issue significance, sequencing and dependencies, and alignment with other sub-regional and/or regional work. The partner priorities for the 2019-2020 fiscal year were cultural protection, EBM monitoring, economic development, conservation, and governance. Key achievements during the fiscal year of implementation are described below in accordance with MaPP strategic outcomes and relevant plan strategies. Although all the strategies within this report are organized within the five key outcome areas, some strategies could align with more than one outcome area.

The Strategy Status definitions are as follows:

Complete/functioning	Of the <u>discrete</u> activities intended to be undertaken for this strategy, all are completed. Of the <u>continuous</u> activities intended to be undertaken for this strategy, all are fully operational and ongoing.
On track	All <u>discrete</u> activities intended to be undertaken for this strategy in the relevant budget year (i.e., Year 2, Year 3 or Year 4) are completed. All <u>continuous</u> activities intended to be undertaken for this strategy in the relevant budget year are fully operational.
In development / some activities initiated	Of the activities intended to be undertaken for this strategy, some have been initiated or are in development, but not all are yet complete/ functioning.
Not started / not applicable to certain sub-regions	No activities for this strategy have been initiated or planned for the time period or geography (region/sub-region).
At risk / significantly behind schedule	Activities for this strategy are not progressing as planned, are behind schedule, or are projected to be behind schedule based on foreseeable risks.

Outcome 1: Governance and Collaboration – *Strengthening the model of collaborative oceans governance.*

Highlights of achievements for the 2019-2020 fiscal year are as follows:

- The NVI team has developed a communications strategy that identifies, and outlines core communications needs and opportunities, as well as identifying potential tools (e.g., videos, brochures, signage), audiences and high-level messaging. A 12:30-minute video about the NVI region including key ecological features, cultural sites and values, MaPP initiatives (Guardian programs, EBM monitoring, archaeological surveys, etc.) and activities (log handling, shipping and boating, recreation, etc.) was completed in January 2020. The video is to be used by the Guardians for education and outreach to visitors within their territories. The video was uploaded to the MaPP and Nanwakolas Council websites and shared through Facebook communications. In March 2020, the video was submitted to the Georgia Strait Alliance for consideration in their Festival of Ocean Films, celebrating Oceans Day in June 2020.
- The NVI Marine Plan Advisory Committee met twice for two-day meetings in May and November 2019. The meetings were to provide project updates; to receive feedback on final draft Protection Management Zone (PMZ) management plans; and to convene a workshop on marine governance, which led to a report of recommendations for First Nations, provincial and federal governments. The final step will be to bring the recommendations to the respective governments for review and consideration.
- Management plans developed for 10 PMZs will undergo partner review in the summer of 2020. Following internal review, non-MaPP partner Nations with traditional territories overlapping the locations of those PMZs will be contacted by the Province for management plan review and discussion.
- The Nanwakolas member Nation Guardian Programs participated in BC Parks Ranger training held in Parksville in May 2019 and also participated in a workshop on regulatory compliance with Provincial operational staff in December 2019.
- Discussions between the Province and Nanwakolas member First Nations regarding the protection measures for loxiwe are delayed pending internal discussion with Nanwakolas to evaluate economic vs. cultural trade-offs and alternative tools for management.
- The 2018/2019 Annual Report has been completed and was posted to the MaPP website.

A full list of strategies related to this MaPP outcome is in Table 1.



Photo credit: Scott Harris. BC Parks Ranger Training, May 2019.

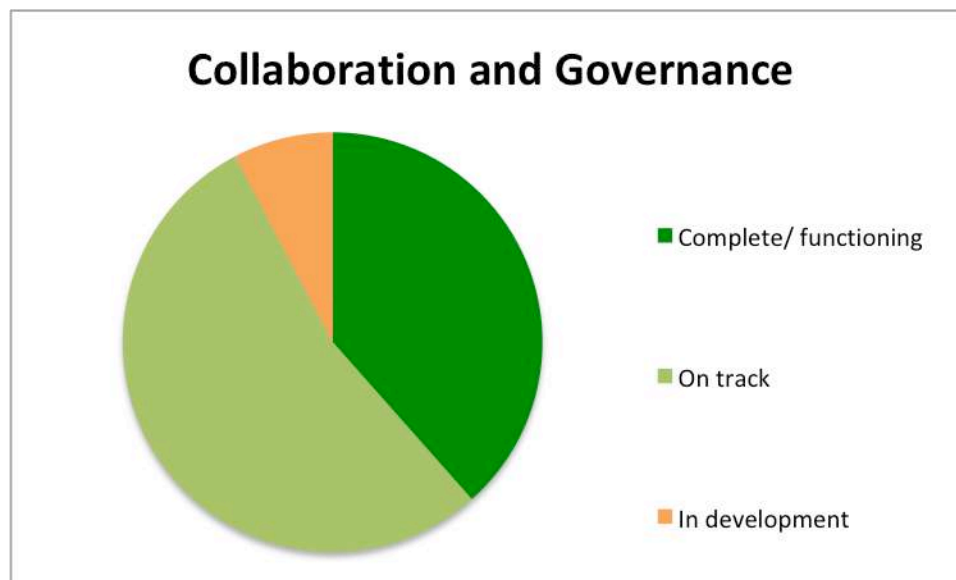
Table 1. List of collaboration and governance strategies in the approved 2019-2020 work plan.¹

Strategy	Status of Strategy
GCM 2.1.1 Increase opportunities for First Nations, local residents, local governments and stakeholders to provide input to marine management decisions.	On track
GCM 2.1.2 Increase First Nations, local resident, local government and stakeholder participation in management and development plans, including planning priorities.	On track
GCM 1.1.1 Review the adequacy of existing information and communication materials regarding marine governance and jurisdiction for various government agencies and First Nations.	Complete
GCM 1.1.2 Develop and/or improve information access and education on marine governance and jurisdiction.	In development
RCE 1.1.1 Jointly explore funding sources, new opportunities, and the use of new technologies with appropriate government agencies and local marine surveillance and enforcement programs	On track
RCE 1.1.2 Coordinate training for marine surveillance and enforcement with relevant agencies and organisations.	On track
RCE 2.1.1 Work with relevant government agencies to identify opportunities where Guardian Watchmen could participate in the surveillance of marine activities and the enforcement of marine regulations	On track
RCE 2.1.2 Increase the use of Guardian Watchmen programs to assist with monitoring and facilitating compliance with tenure provisions, marine plans and existing regulations. This could include, but is not limited to, ecological conditions, conservancies and protected areas, marine oil spill response, cultural and heritage resources, and related early warning systems.	On track
RET 2.1.2 Develop programs to increase the collection of information by First Nations through partnerships with institutions, industry and governments.	On track

¹ “First Nations” in the context of the NVI Plan objectives and strategies means member First Nations of the Nanwakolas Council who signed the Marine Plan in 2015. These were the Mamalilikulla, Tlowitsis, Da’naxda’xw Awaelatla, Wei Wai Kum, Kwiakah, K’omoks and Gwa’sala-’Nakwaxda’xw First Nations. The Gwa’sala-’Nakwaxda’xw First Nation is no longer a member of Nanwakolas Council and therefore such statements cannot be assumed to represent its current perspectives.

RET 4.3.1 Collaboratively develop and make available education materials to improve public understanding of, and caring for, marine cultural, heritage and ecological resources.	Complete/ Functioning
RET 4.3.3 Provide, and increase awareness of, opportunities for stewardship involving education, restoration and monitoring.	Complete/ Functioning
Communications – annual reporting	Complete/ Functioning
Stakeholder Engagement Meetings	Complete/ Functioning

Of the collaboration and governance strategies initiated in the 2019-2020 fiscal year, five are “completed/functioning,” seven are “on track,” one is “in development.”



Outcome 2: Marine Zoning - *Achieving a healthy marine environment, robust economy and strong communities through zoning.*

Highlights of achievements for the 2019-2020 fiscal year are as follows:

- The Partners have been engaged in technical and senior level discussions to develop an initial MPA network scenario and Nanwakolas staff are assisting member Nations in evaluation of MPA network components in their territories. An MPA Network Action Plan capturing the final, proposed Network components and proposed implementation activities is the expected final output of the joint planning process.
- A Section 16 Land Act reserve has been established in the Salmon River Estuary, and the NVI MaPP team will continue to work with the Province and member First Nations to support discussions around a potential Wildlife Management Area, or other designation.

A full list of strategies related to this MaPP outcome is in Table 2.

Table 2. List of marine zoning strategies in the approved year 2019-2020 work plan.

Strategy	Status of Strategy
CP 3.1.2 Encourage the Canada-British Columbia Marine Protected Areas Implementation Team to designate marine protected areas through the Network Strategy in a staged manner to minimise impacts on marine uses and activities.	On track
CP 4.2.1 Include First Nations in the Network Strategy review and selection of candidates put forward by First Nations, stakeholders, the public and the scientific community in their marine territories.	On track
CP 4.2.4 Include First Nations interests in the selection criteria for the Network Strategy candidate areas.	Complete

Of the marine zoning strategies in the 2019-2020 fiscal year, one is “complete / functioning” and two are “on track.”

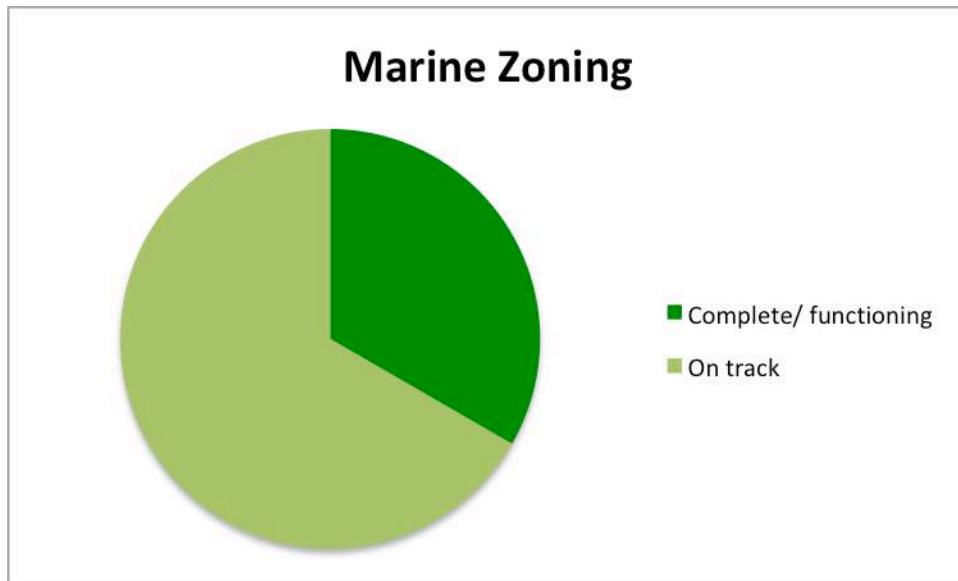


Photo credit: Barb Dinning.

Outcome 3: Stewardship, Monitoring and Enforcement – *Enhancing stewardship of ecological and cultural values, and archaeological sites and areas through monitoring and enforcement.*

Highlights of achievements for the 2019-2020 fiscal year are as follows:

- The MaPP co-leads initiated a Pilot Project on Archaeology and Cultural Heritage in the sub-region and are working together with the BC Archaeology Branch, BC Parks, Natural Resource Officers (NROs) and the Ministry of Indigenous Relations and Reconciliation (MIRR) to advance components related to communications, archaeology surveys, and joint patrols to identify issues and possible approaches to achieve pilot goals of increasing protection and increasing the role of guardians in management and protection. In August 2019, a joint patrol with Tlowitsis and Mamalilikulla guardians, NROs, BC Parks, and contracted archaeologists spent two days visiting impacted sites and discussing the issues around protection. Contracted support was also put in place to develop a communication strategy for raising awareness of important cultural sites and proper use of sites within First Nations territories. Product development (e.g., brochures, signage) will occur in 2020-21.
- Archaeological inventory fieldwork by Nanwakolas member Nation guardians with contracted archaeologists occurred throughout the summer and fall. The contractor developed a report outlining the sites visited and the data collected.
- The EBM Coordinator worked with the NVI MaPP team and Guardian Program to implement an EBM monitoring strategy for kelp across the NVI sub-region. Data collected is being used by the Province and First Nations to inform kelp harvest quotas and management. In addition, the Guardian program monitored oceanographic data loggers, undertook estuary resiliency monitoring work in three estuaries, identified polluted sites requiring clean up and the locations of derelict and abandoned vessels, and provided logistical, monitoring and demobilization support for the kelp and shellfish aquaculture pilot projects.
- Nanwakolas guardians identified a number of priority shoreline restoration and cleanup sites within their territories, and have prepared plans for local, coordinated cleanup that will be actioned during the field season.
- Nanwakolas Council and Provincial representatives continued to participate in federal marine incident response programs, vessels of concern programs, places of refuge programs and others, through an agreement with Canada to collaborate in implementing Canada's Oceans Protection Plan.
- Applications for a Section 17 Land Act Designated Use Areas for log handling sites deemed surplus in a previous MaPP report have been submitted to the Province and are currently

being adjudicated. If the designations are made, a contractor will be sought to conduct site assessments to evaluate the potential areas for tourism opportunities.

- A three-year EBM monitoring strategy is currently being developed.
- The MaPP team is currently exploring data sets for additional EBM indicators including governance, socio-economic indicators and the protection of cultural sites.

A full list of strategies related to this MaPP outcome is in Table 3.

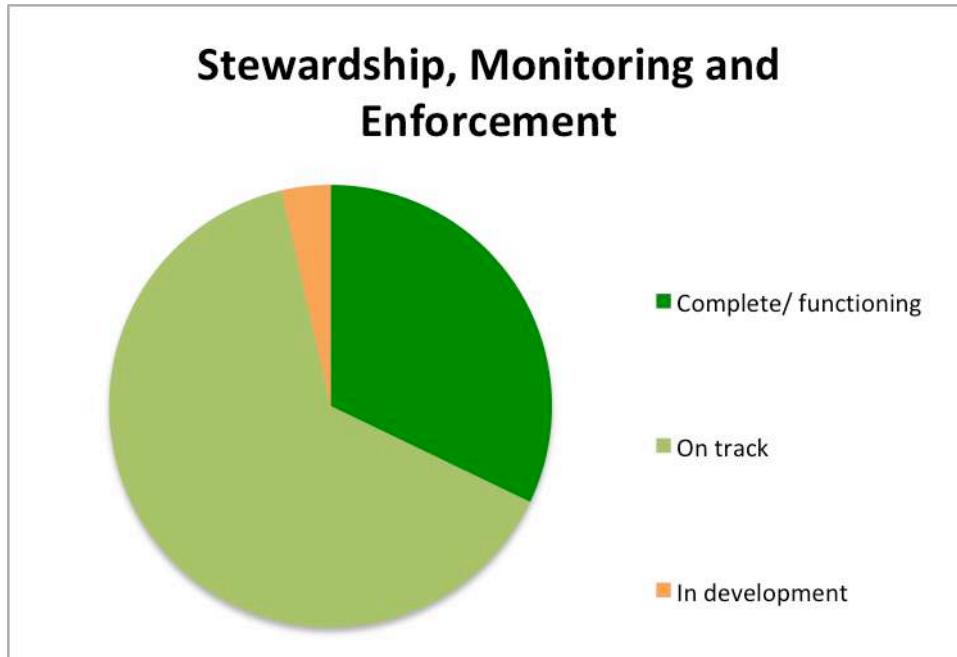
Table 3. List of stewardship, monitoring and enforcement strategies in the approved 2019-2020 work plan.¹

Strategy	Status of Strategy
P.1.1.6 Work with First Nations, local governments and industry to reduce pollution, limit degradation of sensitive areas and develop or improve action plans for the restoration of marine and adjacent upland uses using new technology, best management practices and other mechanisms. A priority area is Hardy Bay (SMZ 8).	On track
FO.3.1.1 Evaluate potential temporary alternative uses for log handling and storage sites during inactive periods	On track
P.4.1.2 Identify opportunities and funding for local and First Nations community participation in the restoration of priority sites, including sites with degraded habitat from past tenured activities.	On track
RET.4.3.3 Provide, and increase awareness of, opportunities for stewardship involving education, restoration and monitoring.	On track
RT.1.1.2 Identify and assess local and sustainable marine recreation and tourism expansion and development opportunities.	On track
CHR.1.1.1 Encourage proponents to provide existing and new information regarding cultural and heritage resources to Nanwakolas member First Nations and local communities.	In development
CHR.3.1.2 Develop a joint action plan based on the vulnerability assessment of human impacts (Strategy 3.1.1) that includes a description of legislative tools and how they apply, restrictions on access and/or visitation guidelines, an efficient process for managing development where cultural or heritage resources may be or are being impacted, and appropriate communications tools.	On track
CHR.4.1.2 Support the development of Nanwakolas member First Nations guidelines for sharing information about cultural resources and the intended use of this information. S.4.1.3 Develop a provincial government/ Nanwakolas member First Nations pilot project on the conservation and protection of cultural resources.	On track

Strategy	Status of Strategy
CHR.4.1.6 Support the collaborative development of an educational strategy between Nanwakolas member First Nations and stakeholders on member First Nations culture, traditional ecological knowledge, relationship to the marine environment and procedures for working with First Nations. Include cross-cultural workshops and culturally appropriate information (such as magazines, websites and signage) for broad access by user groups and recipients of provincial tenures.	On track
CHR.1.1.2 Undertake additional cultural and archaeological surveys and ongoing research for culture and heritage resources.	On track
RET.1.1.2 Work with organisations, institutions, industry and governments to develop robust and objective baseline research and monitoring programs.	On track
RET.2.1.2 Develop programs to increase the collection of information by First Nations through partnerships with institutions, industry and governments.	On track
RET.2.1.3 Encourage research institutions and industry to use First Nations in conducting research programs.	On track
RET.4.1.1 Collaborate with research agencies, organisations and universities to reassess the status of research gaps and existing resources for EBM and create an implementation plan to address opportunities.	On track
RET.5.1.4 Improve research programs to inform understanding of climatic and oceanographic dynamics, ecological responses to climate change, and potential climate refugia.	On track
RCE.1.1.2 Coordinate training for marine surveillance and enforcement with relevant agencies and organisations	Complete/ Functioning
RCE.2.1.1 Work with relevant government agencies to identify opportunities where Guardian Watchmen could participate in the surveillance of marine activities and the enforcement of marine regulations.	Complete/ Functioning
RCE.2.1.2 Increase the use of Guardian Watchmen programs to assist with monitoring and facilitating compliance with tenure provisions, marine plans and existing regulations. This could include, but is not limited to, ecological conditions, conservancies and protected areas, marine oil spill response, cultural and heritage resources, and related early warning systems.	Complete/ Functioning
CHR.1.1.2 Undertake additional cultural and archaeological surveys and ongoing research for culture and heritage resources.	Complete/ Functioning

Strategy	Status of Strategy
CHR.3.1.2 Develop a joint action plan based on the vulnerability assessment of human impacts (Strategy 3.1.1) that includes a description of legislative tools and how they apply, restrictions on access and/or visitation guidelines, an efficient process for managing development where cultural or heritage resources may be or are being impacted, and appropriate communications tools.	Complete/ Functioning
CHR.4.1.1 Establish a provincial government/ <u>Nanwakolas</u> member First Nations agreement to address such topics as surveillance and enforcement of cultural resources in Guardian Watchmen programs	Complete/ Functioning
CP.1.1.1 Through applicable processes identify and propose new conservation and protection areas for ecosystem and species representation and resilience, special or unique marine areas or features, and protection of First Nations cultural resources	Complete/ Functioning
RET.1.1.2 Work with organisations, institutions, industry and governments to develop robust and objective baseline research and monitoring programs.	Complete/ Functioning
A.3.1.1 Identify appropriate sites with high shellfish aquaculture capability for First Nations tenure opportunities. Priority areas are the North Shore/Boswell Inlet (SMZ 1), Port Neville (SMZ 25), Booker Lagoon (SMZ 11) and Kalogwis (SMZ 22)	Complete/ Functioning
P.2.1.2 Work with relevant government agencies to confirm the locations of abandoned and derelict vessels, and establish a working group with local government, First Nations and relevant government agencies to identify the owners and potential funding sources, and to develop a risk-based action plan for phased vessel removal.	On track
P.3.1.1 Assess spill preparedness and response management capacity from appropriate government agencies, industry and community perspectives.	On track
P.3.1.3 Work with appropriate government agencies, industry and local communities to establish locally specific Geographic Response Plans and response centres, including training, preparation and equipment for effective response to both local and regional marine spills.	On track
P.3.1.4 Establish a working group that includes appropriate government agencies and First Nations to address marine spill challenges, including financing, industry response times and capacity, spill management techniques, cleanup levels and standards, improved training and preparedness and response mapping systems.	On track

Of the stewardship, monitoring and enforcement strategies undertaken in 2019-2020 fiscal year nine are “complete/functioning,” 18 are “on track,” and one is “in development.”



Outcome 4: Sustainable Economic Development, Healthy Communities – *Fostering a new ecosystem-based marine economy for improved community and human well-being.*

Highlights of achievements for the 2019-2020 fiscal year are as follows:

- Both the kelp and shellfish growth project have been completed and report delivered by the contractor. Additionally, feasibility reports were created outlining the costs and infrastructure needed to develop a kelp aquaculture and a shellfish aquaculture farm. Discussions are taking place with Nanwakolas member Nations to explore the results of the pilot projects and feasibility studies, and potential interest in future commercial operations.
- Nanwakolas member Nations collaborated with the BC Marine Trails Network Society and provincial staff to identify management recommendations for camping sites proposed as Network sites in their traditional territories, and recommended some sensitive sites be removed from the BCMT website.
- A training needs assessment report was received by contracted support in August 2019 and shared with the MPAC, outlining gaps and priorities for human resource training in different marine economic sectors.
- Discussions were held with Indigenous Tourism BC and are arranging two workshops with the Nanwakolas Nation: Cultural Storytelling and First Host. These workshops are geared toward supporting tourism operations already in operation to help staff develop programming which meets their vision.
- The Marine Plan Advisory Committee has formed a working group to explore concepts and opportunities for projects to support the local fisheries economy. The first meeting of this small working-group was held in March 2020 and helped to consider the desired scope of this program.

A full list of strategies related to this MaPP outcome is in Table 4.

Table 4. List of sustainable economic development and healthy communities strategies in the approved 2019-2020 work plan.¹

Strategy	Status of Strategy
RT.1.1.1 Undertake a review of infrastructure, transportation, market entry and other barriers/challenges to participation in recreation and tourism opportunities.	Complete / Functioning
RT.1.1.2 Identify and assess local and sustainable marine recreation and tourism expansion and development opportunities.	Complete / Functioning
RT.1.1.3 Work with industry and local communities to develop a strategy for attracting pocket cruise ships to improve the use of existing infrastructure.	Complete / Functioning
CE.1.2.1 Identify and prioritise marine economic development opportunities and constraints for local communities, including social and ecological constraints.	Complete / Functioning
P.1.1.2 Assess the vulnerability of existing and potential marine uses and activities that are sensitive to pollution from marine and adjacent upland sources. Priorities are sewage outfall impacts on shellfish areas in Hardy Bay (SMZ 8), loxiwe in the Broughton (PMZ 7), and existing and new conservation and protection areas – see Chapter 5.	Complete / Functioning
FO.4.1.1 Develop and implement a process for restoring log handling and storage sites and adjacent areas that are not included in the strategic network of log handling and storage sites (Strategy FO.1.1.2).	Complete / Functioning
A.3.1.1 Identify appropriate sites with high shellfish aquaculture capability for First Nations tenure opportunities. Priority areas are the North Shore/Boswell Inlet (SMZ 1), Port Neville (SMZ 25), Booker Lagoon (SMZ 11) and Kalogwis (SMZ 22) – see Chapter 5.	Complete / Functioning
A.5.1.1 Build on existing marketing strategies for EBM aquaculture products produced in association with existing seafood marketing organisations.	Complete / Functioning
A.5.1.2 Develop branding and marketing based on EBM products developed by First Nations.	Complete / Functioning
FEAV.1.1.2 Work with appropriate agencies to investigate the feasibility of establishing new fisheries related economic opportunities. Priority areas include Port Neville (SMZ 25) and Loughborough Inlet/Matlaten/Stafford/Apple River (SMZ 29)	On track
FEAV.2.1.1 Support opportunities for local and First Nations investment, partnership and participation in sustainable BC seafood processing activities and operations.	On track
FEAV.6.1.1 Encourage processors to work with fishermen to evaluate the ability of processing infrastructure to be altered in response to changes in species and timing of harvests.	On track
FEAV.6.1.2 Incorporate changes in sea level, storm frequency and intensity in designing fisheries infrastructure within areas identified in vulnerability assessments as high risk.	On track

RET.3.1.1 Work with existing regional and local committees to identify and address gaps in training and establish programs to educate community youth about opportunities for marine sector employment training.	Complete / Functioning
RET.3.1.2 Increase multi-sector cooperation to create a critical mass for training opportunities for mutual certifications.	Complete / Functioning
RET.3.1.3 Evaluate current human resource needs and future sector growth as the basis for training programs.	Complete / Functioning
RET.3.1.4 Encourage training and hiring of local residents for jobs in the marine economic sectors.	Complete / Functioning
RET.2.1.3 Encourage research institutions and industry to use First Nations in conducting research programs.	Complete / Functioning
RET 1.1.1 Support independent, government, industry and academic funding for, and collaboration on, the development of a marine research program strategy that is consistent with a national research strategy. Include priority topics such as thresholds for pollutants, long-term marine ecosystem health assessments, impacts of light pollution on seabirds and other species, climate change, and analysis of existing data sets (including recreational dive site datasets for ecological values).	Not started / Not applicable in certain sub-regions
RET.1.1.3 Provide local opportunities for hands-on and applied research training.	Not started / Not applicable in certain sub-regions

Of the sustainable economic development, healthy communities strategies undertaken in 2019-2020, 14 are “complete/ functioning,” four are “on track,” and two are “not started.”

Sustainable Economic Development, Healthy Communities

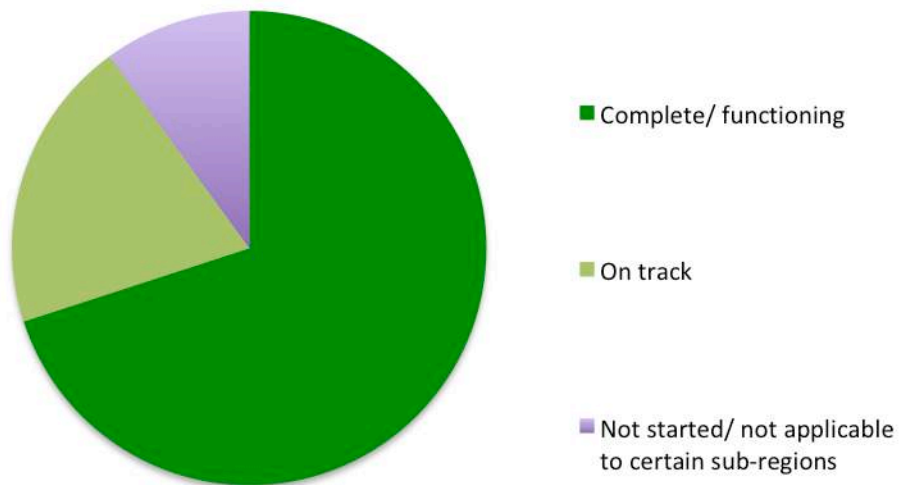


Photo credit: Barb Dinning

Outcome 5: Climate Change and Adaptive Management – Undertaking studies and plans to better address the effects of climate change in the MaPP region.

Highlights of achievements for the 2019-2020 fiscal year are as follows:

- Monitoring of climate change indicators relevant to marine plan outcomes is underway through the EBM monitoring program, and the estuary monitoring work being planned will have a strong focus on climate change and resiliency to potential impacts.
- A contract was awarded to assess risk to different activities, uses and sectors from climate-induced effects on ocean conditions. This will also include a gap analysis and recommendations for priority work to address risk. This contract is scheduled to be delivered in June 2020.

A full list of strategies related to this MaPP outcome is in Table 5.

Table 5. List of climate change and adaptive management strategies in the approved 2019-2020 work plan.

Strategy	Status of Strategy
CE.5.1.1 Work with communities, industry, stakeholders and relevant government agencies to identify and assess the vulnerability of existing marine uses and activities to climate change, and the risks of climate change on the viability of those activities.	On track
CE.5.1.2 Identify the level of adaptability of existing marine industries, including the use of potential monitoring indicators, and develop strategies for adaptation or alternative practices.	On track
CHR.5.1.1 Develop action plans, based on climate change vulnerability assessments, for responding to the potential effects of climate change, such as inundation, erosion, and access limitations, on cultural and heritage resources, including food sources.	On track
RT.4.1.1 Determine which tourism activities are vulnerable to climate change, and assess new business and tourism impacts and opportunities due to climate change.	On track
RET.5.1.2 Gather traditional, local, industry (e.g., aquaculture) and scientific knowledge of climate change (e.g., flooding, severe marine storms, acidification) to better understand the potential impacts of climate change and develop response or adaptation measures.	On track
RET.5.1.3 Using preliminary climate change vulnerability assessments and other resources, prepare a climate change vulnerability assessment for the Plan Area to identify priorities including protection of ecosystems and cultural and heritage resources; economic risks and opportunities; impacts on community infrastructure; and community design/planning.	On track

Of the climate change and adaptive management strategies undertaken in 2019-2020 all six are “on track.”

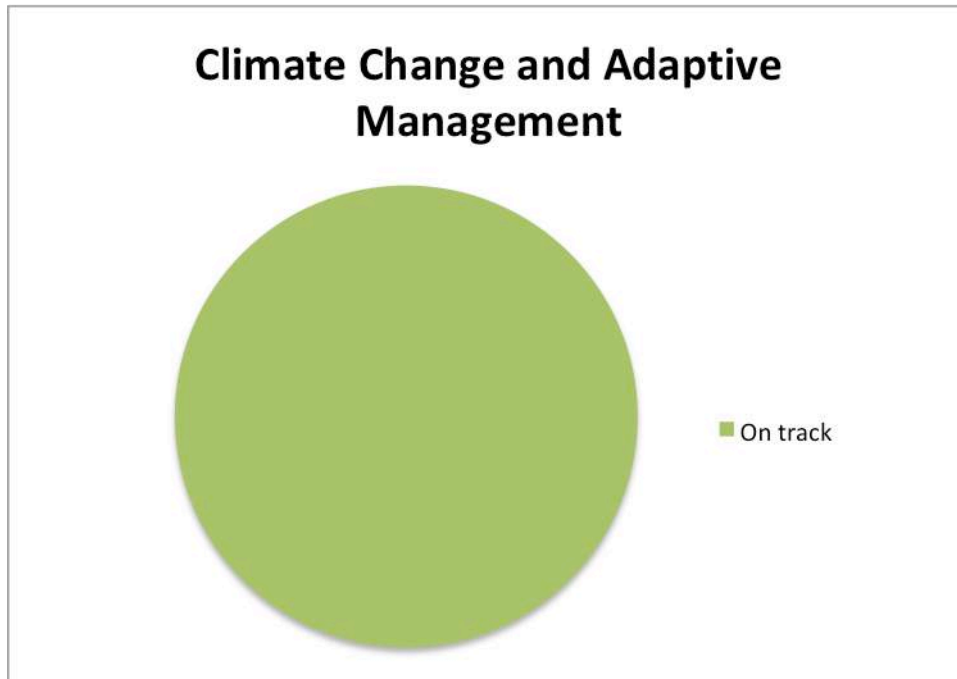




Photo credit: Markus Thompson

ECOSYSTEM-BASED MANAGEMENT INDICATOR MONITORING

See 2019 MaPP North Vancouver Island Kelp Surveys (Thalassia Environmental, 2020).

LOOKING AHEAD

In the next fiscal year of implementation (2020-2021) the NVI Team will continue to focus on projects in all MaPP outcomes which were started in the 2019-2020 fiscal year that require additional activities, and will engage MPAC members on all aspects of implementation.

New projects are anticipated for the following topics:

- Development of communications products for use in the Cultural and Heritage Pilot Project area
- Assessment of Cultural and Heritage Pilot Project Results and Next Steps
- Indicator reporting for a public audience
- Plan amendments
- Supporting the local fisheries economy
- Engagement in management and monitoring of protection and conservation areas

Ongoing work is anticipated for the following topics:

- Implementation of the Cultural and Heritage Action Plan
- Guardian Program engagement
- EBM monitoring
- Estuary resilience monitoring
- Climate change risk/vulnerability assessment
- Geographic response planning
- MPA network planning process
- Stakeholder engagement
- Annual reporting

Efforts will continue by both partners to support agreements that enable Guardian programs to assist with monitoring and facilitate compliance with provincial tenure provisions and existing regulations, consistent with the marine plans.

APPENDIX A – COMPLETED NVI IMPLEMENTATION STUDIES, 2019-2020

Topic	Author	Title	Date completed
Shellfish Aquaculture	Don Tillapaugh	Tlowitsis Shellfish Aquaculture Pilot (TSAP) Project Progress Report, April 1 – June 30, 2019	24 September 2019
Shellfish Aquaculture	Don Tillapaugh	Tlowitsis Shellfish Aquaculture Pilot (TSAP) Project Annual Report #2, April 1, 2018 – March 31, 2019	16 October 2019
Aquaculture Feasibility	Don Tillapaugh	MaPP NVI Scallop Farm Feasibility Study	2 April 2019
Kelp Aquaculture	Don Tillapaugh	Tlowitsis Marine Plant Pilot (TMMP) Final Report, April 1 – June 30, 2019	6 February 2020
Kelp Aquaculture	Don Tillapaugh	Tlowitsis Marine Plant Pilot (TMMP) Project Part 2: Commercial context of biological results	19 December 2019
EBM Monitoring	Thalassia Environmental	2019-2020 MaPP End of Year Report	16 April 2020
EBM Monitoring	Thalassia Environmental	2019 MaPP North Vancouver Island Kelp Surveys	20 January 2020
Training Needs Assessment	Human Capital Strategies	An Assessment of Marine-Related Sector Training & HR Needs on North Vancouver Island	9 August 2019
Marine Governance	KWC Planning	Governance Inventory	8 August 2019

APPENDIX B – NVI MARINE PLAN ADVISORY COMMITTEE MEMBERSHIP, 2019-2020

Name	Sector
Bruce Storry (Member)	Coastal Forestry
Bharat Adhikari (Observer)	Coastal Forestry – BCTS
Christina Mardell (Observer)	Coastal Forestry – BCTS
Richard Snowdon (Member)	Commercial Tourism
Jim McIsaac (Member)	Commercial Fishery
Dan Edwards (Alternate)	Commercial Fishery
Bill Wareham (Member)	Marine Conservation
Ross Jameson (Alternate)	Marine Conservation
Richard Opala (Member)	Finfish Aquaculture
Jim Abram (Member)	Local Government – Strathcona Regional District
Charlie Cornfield (Member)	Local Government – City of Campbell River
Kermit Dahl (Alternate)	Local Government – City of Campbell River
Rod Sherrell (Member)	Local Government – Regional District of Mt Waddington
Jeff Long (Alternate)	Local Government – Regional District of Mt Waddington
Leighan Wishart (Member)	Local Government – District of Port Hardy
Fred Robertson (Alternate)	Local Government – District of Port Hardy
Mike Kelly (Member)	Port Hardy Harbour Authority
Peter Stockdill (Member)	Public Recreation
Nick Heath (Alternate)	Public Recreation
Chuck Ashcroft (Member)	Public Recreational Fishing
Jeremy Maynard	Recreational Fishing Service Providers
Don Tillapaugh (Member)	Shellfish Aquaculture
Todd Russell (Alternate)	Shellfish Aquaculture

APPENDIX C – NVI TECHNICAL TEAM, 2019-2020

Name	Title
John Bones	Co-Lead, Nanwakolas Council of First Nations
Sally Cargill	Co-Lead, Province of B.C.
Scott Harris	Marine Planner, Nanwakolas Council of First Nations
Barb Dinning	Marine Planner/GIS Analyst, Nanwakolas Council of First Nations
Alexandra Barron	Projects Coordinator, NVI MaPP
Kylee Pawluk	Projects Coordinator, NVI MaPP
Josie Byington	Projects Coordinator, NVI MaPP

WHERE TO GO FOR MORE INFORMATION

The Marine Plan Partnership:
<http://mappocean.org/>

Marine Plan Partnership for the North Pacific Coast | MaPP is a partnership between the Government of B.C. and First Nations.

