

COASTAL OCEAN RESEARCH INSTITUTE

OCEANWATCH

Howe Sound/Alt'ka7tsem Strategic Plan 2019 – 2021



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Formed by the Howe Sound Community Forum, the Ocean Watch Task Force (OWTF) is a collaborative group of locally elected government representatives, planning staff, NGOs and First Nations working to advance relevant actions proposed in Ocean Watch: Howe Sound Edition (2017). The OWTF advanced the development of the Marine Reference Guide and, with support from Ocean Wise, has completed this Strategic Plan to guide local government protection of the Atl'ka7tsem/Howe Sound region over the next three years.

The Strategic Plan provides a framework for continuing collective local government efforts. In collaboration with First Nations, senior governments and NGOs, the plan identifies local government strategies and actions, organized under six goals, to restore and protect the marine and coastal health of this spectacular and ecologically important area.

Although Skwxwú7mesh Uxwumixw/Squamish Nation is a member of the OWTF, its representatives did not have the opportunity to comment on the Strategic Plan due to timing conflicts. The OWTF recognizes that First Nations have, since time immemorial, been the stewards of Atl'ka7tsem/Howe Sound and that their continued management of their territory has supported the region's ongoing recovery. The OWTF sees the Strategic Plan as a living document subject to review and change as advised by First Nations knowledge holders.

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Table of Contents

EXECUTIVE SUMMARY	2
INTRODUCTION	5
1. STRENGTHEN LOCAL GOVERNMENT CAPACITY TO PROTECT MARINE AND COASTAL ECOSYSTEMS	7
1.1 Build Local Government Capacity for Marine Protection.....	7
<i>Possible Actions:</i>	7
1.2 Strengthen Local Government Marine and Coastal Protection Tools	8
<i>Possible Actions:</i>	8
1.3 Take Local Action to Protect and Restore Priority Species and Habitats	8
<i>Possible Actions:</i>	8
2. COLLABORATE ON MARINE AND COASTAL PLANNING AND MANAGEMENT	9
2.1 Continue with Regional Collaboration.....	9
<i>Possible Actions:</i>	9
2.2 Collaborate with First Nations Marine Planning.....	9
2.3 Collaborate on Crown Land and Marine Planning and Management.....	9
<i>Possible actions:</i>	9
3. SUPPORT & USE MARINE DECISION-MAKING AND REPORTING TOOLS	10
3.1 Create and Use the Marine Reference Guide	10
<i>Possible Actions:</i>	10
3.2 Cooperate with CORI on Ocean Watch Howe Sound, 2nd Edition	11
<i>Possible Action:</i>	11
4. STRENGTHEN MONITORING AND ENFORCEMENT OF LAWS AFFECTING HOWE SOUND.....	11
4.1 Collaborate With Senior Government on Monitoring and Enforcement.....	11
<i>Possible Actions:</i>	11
4.2 Protect Marine Water Quality	12
4.3 Manage the Impacts of Marine Tourism and Recreation.....	12
<i>Possible Actions:</i>	13
4.4 Collaborate on Problem Vessels and Structures	13
<i>Possible Actions:</i>	13
5. ADDRESS CLIMATE CHANGE IMPACTS ON COASTAL ECOSYSTEMS	13
5.1 Collaborate Regionally on Climate Change Mitigation and Adaptation.....	13
5.2 Address Impacts of Sea Level Rise and Stream Flow Changes	14
<i>Possible Actions:</i>	14
6. SUPPORT MARINE AND COASTAL EDUCATION AND STEWARDSHIP	14
<i>Possible Actions:</i>	14
APPENDIX A. LOCAL GOVERNMENT ENVIRONMENTAL PROTECTION TOOLS	16

Abbreviations used throughout this document

- **CC** – climate change
- **DFO** – Fisheries and Oceans Canada
- **ECCC** – Environment and Climate Change Canada
- **ENV** – Ministry of Environment and Climate Change Strategy
- **FLNRORD** – Forests, Lands, Natural Resources and Rural Development
- **HC** – Health Canada
- **LG** - local government bodies, including regional districts (RDs), cities, municipalities, districts, etc.
- **M&E** – monitoring and enforcement
- **NGOs** – Non-governmental organizations, non-profit and community organizations
- **TC** –Transport Canada

EXECUTIVE SUMMARY

In 2017, the Coastal Ocean Research Institute (CORI)¹ produced the [Ocean Watch: Howe Sound Edition \(2017\)](#) report (OWHS) on the status of coastal ocean health in the sound. The Howe Sound/Atl'ka7tsem Community Forum (HSCF), a roundtable of First Nations, local and regional governments working on common issues in the sound, was a key partner. CORI has been supporting the Ocean Watch Task Force (OWTF) of the HSCF to advance local government actions in the report. This Strategic Plan addresses items 1 – 3 of the OWTF Terms of Reference (below). The next step is Item 4, implementation process.

1. Identify actions in OWHS that are within the mandate and reach of HSCF member communities.
2. Identify what members are already doing on these actions.
3. Identify selected LG actions, highlighting those that include policy integration and collaboration.
4. Recommend a process through which the selected actions get done.

The plan proposes collective **local government goals, strategies and actions** to protect marine and coastal environments in the Sound. (Note: The Squamish Nation is a member of the HSCF and representatives were involved in preparing the OWHS, but didn't review or approve this plan.)

AIMS OF THE STRATEGIC PLAN:

1. To support members of the Howe Sound/Atl'ka7tsem Community Forum to continue providing leadership in protecting coastal ocean health, including marine and coastal environments.
2. To provide a strategic framework for pursuing priority local and regional government goals, strategies and actions on coastal health over 2019-21.

TARGET AUDIENCES:

1. Howe Sound Community Forum, and member First Nations and Local Governments; and
2. HSCF partners and collaborators, including senior governments, NGOs, business and community organizations, and citizens.

CROSS-CUTTING THEME: Acknowledge First Nations historic stewardship of Atl'ka7tsem /Howe Sound, and collaborate with First Nations on protecting coastal ocean health.

GOALS, STRATEGIES AND ACTIONS:

1. STRENGTHEN LOCAL GOVERNMENT CAPACITY TO PROTECT MARINE AND COASTAL ECOSYSTEMS

1.1 Build Local Government Capacity for Marine Protection

- Provide opportunities for collective professional development and learning on marine and coastal issues for Howe Sound LG elected officials and staff, using existing resources.
- Encourage the development of local marine planning and management initiatives, by sharing models, examples and expertise from Howe Sound, and other B.C. marine and coastal initiatives.
- Consider creating a [Regional Conservation Fund](#), supported by a levy, trust fund and/or fees on coastal development, to support protection, mitigation and restoration.
- Seek funding for a shared marine planner to support LGs in using the Marine Reference Guide and other LG guidance, and to support regional collaboration.

¹ CORI was established by Ocean Wise Conservation Association.

1.2 Strengthen Local Government Marine and Coastal Protection Tools

- Inventory and disseminate LG marine and coastal planning resources and tools, especially [Island Trust Marine Protection resources](#).
- Collectively identify one or more promising resources or tools to apply on a region-wide basis.

1.3 Take Local Action to Protect and Restore Priority Species and Habitats

Marine Protected Areas: Increase the area of Howe Sound covered under MPAs.

Eelgrass: Work with DFO, FLNRORD, and NGOs to protect important eelgrass.

Salmon: Protect estuary habitat important for spawning and rearing salmon, and other species.

Protect eagles and other birds.

2. COLLABORATE ON MARINE AND COASTAL PLANNING AND MANAGEMENT

2.1 Continue with Regional Collaboration

- Continue to participate in and support the HSCF semi-annual meetings and information-sharing.
- Continue to support the OWTF work to advance LG's role in protecting coastal ocean health.
- Consider new/revised governance options to strengthen LG regional coordination.
- Organize occasional thematic workshops and forums to advance priority topics.
- Inventory and disseminate reports, plans and strategies on Howe Sound ecosystems.
- Identify options for a long-term secretariat for the HSCF, including supporting the plan.
- Secure funding and expertise to increase regional marine planning capacity for Howe Sound.
- Liaise with and support the [Howe Sound/Atl'ka7tsem UNESCO Biosphere](#) initiative.

2.2 Collaborate with First Nations Marine Planning

Cooperate with the Squamish Nation in developing the Squamish Nation *Alt'ka7tsem/Howe Sound Marine Use Plan*, as requested by the Nation.

2.3 Collaborate on Crown Land and Marine Planning and Management

- Collaborate with FLNRORD to improve LG consultation on Crown land tenures under the *B.C. Land Act*, including forest licenses and foreshore leases.
- Continue to liaise with FLNRORD on the *Howe Sound Cumulative Effects Assessment*, which will assess the condition and trends for key environmental values as an aid to decision-making.

3. SUPPORT & USE MARINE DECISION-MAKING AND REPORTING TOOLS

3.1 Support development, maintenance and implementation/use of the [Howe Sound/Atl'ka7tsem Marine Reference Guide](#) (MRG) by local governments.

3.2 Cooperate with CORI on Ocean Watch Howe Sound, 2nd Edition

4. STRENGTHEN MONITORING AND ENFORCEMENT OF LAWS

4.1 Collaborate With Senior Government on Monitoring and Enforcement

- Pursue formal LG regional participation in Transport Canada's *Oceans Protection Plan*.
- Establish a collaborative body involving senior government, LGs, First Nations, NGOs and/or adapt an existing process to improve regional coordination on M & E.

4.2 Protect Marine Water Quality

Work with senior government agencies (TC, DFO, ECCC, ENV) to address water issues, especially preventing the entry into the marine environment of contaminants from land-based activities.

4.3 Manage the Impacts of Marine Tourism and Recreation

Work with senior government agencies (TC, DFO, FLNRORD, ENV) to assess compliance with laws and regulations affecting tourism and recreation on Crown lands, foreshore and marine areas, and strengthen enforcement, as needed.

4.4 Collaborate on Problem Vessels and Structures

- Contribute collectively to the Vessel of Concern (VOC) Inventory being compiled by Coast Guard (2019); with Bill C-64² coming into force, DFO seeking LG input in assessing risks in the region.
- Build on past collaboration on VOC to establish a multi-stakeholder body (e.g., senior governments, First Nations, LGs, NGOs) and process to share information and find solutions.

5. ADDRESS CLIMATE CHANGE IMPACTS ON COASTAL ECOSYSTEMS

5.1 Collaborate Regionally on Climate Change Mitigation and Adaptation

Work collectively to learn about and apply available LG resources through workshops and other forms of peer learning and experience sharing, e.g., [BC Climate Action Toolkit](#); [Islands Trust resources](#).

5.2 Address Impacts of Sea Level Rise and Stream Flow Changes

- Increase local capacity to adapt to sea level rise and extreme weather events, (e.g., storms, flooding, landslides, extreme heat and drought), especially in high flood risk areas.
- Share resources and best practices on planning for sea level rise and flood hazard management.
- Work with DFO to strengthen LG regulations protecting riparian areas.
- Work with BC Hydro and DFO to ensure sufficient water flow for fish spawning and migration.

6. SUPPORT MARINE AND COASTAL EDUCATION AND STEWARDSHIP

- Develop a program to educate and engage local communities and visitors about Howe Sound/Atl'ka7tsem as a bioregion, link the content and methods to strategies 1 – 5.
- Integrate the results of citizen science into LG planning and development decisions.
- Support ongoing education, citizen science and stewardship initiatives through publicity, technical assistance, partnerships and/or funding. (See list of groups in OWHS 2017, p. 183.)

² An Act respecting wrecks, abandoned, dilapidated or hazardous vessels and salvage operations.

INTRODUCTION

In 2017, the Coastal Ocean Research Institute (CORI) produced a report providing a snapshot of coastal ocean health in Howe Sound. The [*Ocean Watch: Howe Sound Edition*](#) (OWHS 2017) and *Executive Summary* analyzed available information on the state of the coastal environment in the Sound, and proposed actions to address issues of concern. The report was based on research, workshops and discussions with First Nations, government agencies, businesses, NGOs and citizens. A key partner was the Howe Sound/Atl'ka7sem Community Forum (HSCF), a roundtable of First Nations, local and regional governments that has met for over 20 years to address issues of common concern in the Sound.

Since release of this publication, CORI has been supporting follow-up work on action planning, implementation and reporting. This includes supporting the formation of, and active participation in, the Ocean Watch Task Force (OWTF), which consists of a sub-set of HSCF members and staff, to take a leadership role in addressing issues and actions identified within the OWHS 2017, relevant to local governments and First Nations (Box A.)

Box A. Ocean Watch Task Force: Terms of Reference

1. Identify the actions in the OWHS 2017 that are within the mandate and reach of HSCF member communities.
2. Identify what Local and Squamish Nation Governments are already doing on these actions.
3. Identify selected actions for implementation by Local Governments, highlighting those that include policy integration and collaboration.
4. Recommend a process through which the selected actions get done.

With CORI's support, three action tools have been developed to date:

1. *Master List of Government Actions (all levels of government)* to protect coastal ocean health in Howe Sound. These were extracted from OWHS 2017, synthesized and updated, with suggested lead organizations for each (available from CORI);
2. *OWTF Strategic Plan 2019 – 2021* (this document), which identifies proposed priority strategies and actions for Howe Sound local governments over the next three years; and
3. *Action Tracker*, which can be used by the OWTF to monitor and report Strategic Plan progress.

This OWTF Strategic Plan 2019-21 addresses items 1 – 3 in the OWTF Terms of Reference (Box A). Item 4 in the OWTF Terms of Reference is a non-public document summarizing OWTF discussions to date – a process to implement the actions – to be used as the basis to map the way forward on the plan.

The plan is organized under **six goals** for which local governments (LG) can take the lead and/or collaborate with others. Under each goal are listed **strategies and possible actions to achieve that goal**.

AIMS OF THE STRATEGIC PLAN:

1. To support members of the Howe Sound/Atl'ka7tsem Community Forum to continue providing leadership in protecting coastal ocean health, including marine and coastal environments.
2. To provide a strategic framework for pursuing priority local and regional government goals, strategies and actions on coastal health throughout 2019-21.

TARGET AUDIENCES:

1. Howe Sound Community Forum, member First Nations, Local Governments; and
2. HSCF partners and collaborators, including senior governments, NGOs, business and community organizations, and citizens.³

SCOPE:

This plan is based on the OWHS 2017. It thus focuses on possible *local government strategies and actions related to marine and coastal environments in Howe Sound/Atl'ka7tsem*, with some attention to land-based activities that directly affect those environments. It does not address all of the environmental sustainability and climate change issues in the Sound, many of which are the focus of complementary local, provincial and national government, and non-government initiatives. While the plan suggests actions by individual local government bodies, the aim is to *collectively advance marine protection*.

(Note: The Squamish Nation is a member of the HSCF; representatives were involved in preparing the OWHS 2017 and in OWTF discussions; however, the Nation has not reviewed or approved this strategic plan.)

CROSS-CUTTING THEME FOR THE PLAN: Acknowledge First Nations historic stewardship of Howe Sound/Atl'ka7tsem, and collaborate with First Nations on protecting coastal ocean health.

The Coast Salish consider Atl'ka7tsem to be the shared traditional territory of the xwməθkwəyəm/ Musqueam First Nation, Skwxwú7mesh/Squamish First Nation, and Tsleil-Waututh First Nation. The Skwxwú7mesh/Squamish Nation is a member of the HSCF. Box B lists actions referring to First Nations in OWHS 2017. LGs can work with First Nations to develop principles for cooperation, based on examples developed for other processes e.g., [Islands Trust Commitment](#) and [First Nations Engagement Principles Policy](#).

Box B. Actions Referring to First Nations from OWHS 2017

- Protect Wild Spirit Places and heritage, traditional use, sacred, and cultural sites (as addressed in the Squamish Nations land use plan *Xay Temixw – Sacred Land*).
- Increase awareness and knowledge about Squamish Nation stewardship of Howe Sound, including the spiritual and cultural heritage.
- Build on the Squamish Nations' land use plan for the upper watersheds, (*Xay Temixw – Sacred Land*), by incorporating plans for the marine environment and stream catchments to the mouth of Howe Sound.
- Ensure that First Nations, governments and businesses continue to acknowledge and develop agreements on Aboriginal rights and title.
- Identify more ways for Squamish Nation members to experience their traditional territory for health, education, recreation, spiritual and cultural purposes.
- Identify ways to get Squamish Nation members more involved in resource management.

³ The plan may also be used to support an application to designate Howe Sound as a [UNESCO Biosphere Reserve](#), which would showcase a model for regional collaboration on sustainability.

1. STRENGTHEN LOCAL GOVERNMENT CAPACITY TO PROTECT MARINE AND COASTAL ECOSYSTEMS

As noted above, LGs can play a significant role in protecting and restoring marine and coastal ecosystems, based on their jurisdiction and powers in shoreline and upland areas. A wealth of information sources on Howe Sound ecosystem values and sensitivities are available, along with environmental guidelines and tools designed for LGs in B.C. (Box C).

1.1 Build Local Government Capacity for Marine Protection

Possible Actions:

- Provide opportunities for collective professional development and learning on marine and coastal issues for Howe Sound LG elected officials and staff, (e.g., training, workshops, seminars, peer learning, and experience-sharing). These can build on the initiatives and resources described in Box C.
 - Encourage the development of local marine planning and management initiatives, by sharing those models, examples and expertise, such as the District of Squamish [Marine Action Strategy](#) and District of West Vancouver [Coastal Marine Management Working Group](#).
 - Identify lessons learned from, and possible connections with, other B.C. marine and coastal initiatives, such as the B.C.-Coastal First Nations [Marine Planning Partnership](#); the [Haida Gwaii Marine Planning Program](#); and various Salish Sea initiatives, including the Canada-U.S. [Salish Sea Action Plan](#), and the Pacific Salmon Foundation [Salish Sea Marine Survival Project](#).
- Long-term
- Consider creating a [Regional Conservation Fund](#), supported by a levy, trust fund and/or fees on coastal development, to support protection, mitigation and restoration.
 - Seek funding for a shared marine planner to support LGs in using the Marine Reference Guide and other LG guidance (Box C), and support regional collaboration.

Box C. Sample Environmental Resources and Guidance for Howe Sound Local Governments

A. Howe Sound Ecological Resources: Reports, Maps and Assessments

Ocean Watch: Howe Sound Edition, CORI, 2017. (OWHS 2nd Edition expected in 2020)
[Regional Conservation Plan](#), Islands Trust Conservancy
[Sensitive Ecosystem Inventory](#), Metro Vancouver
[Atl'ka7tsem/Howe Sound Marine Conservation Map](#), David Suzuki Foundation/CORI, 2019. Provides 140 data layers, including "ecological hot spots"
Marine Reference Guide (Strategy 2.1): mapping of environmental, social and economic information

B. Environmental Protection Guidance and Tools

[Marine Protection Tools for Local Governments](#), Islands Trust
[Green Shores resources](#), BC Stewardship Centre
[Caring for our Shorelines](#), Islands Trust Conservancy
[Shoreline Care](#), DFO Guide for Property Owners
Ecosystem Assets Study for Howe Sound <https://davidssuzuki.org/science-learning-centre-article/sound-investment-measuring-return-howe-sounds-ecosystem-assets/> David Suzuki Foundation
[Natural Asset Management Strategy](#), Town of Gibsons
[South Coast Conservation Program](#) resources for local government (have worked with West Vancouver, Squamish, Whistler and the Sunshine Coast Regional District)
[Natural Resources Best Practices Guidelines](#), BC Ministry of Environment

1.2 Strengthen Local Government Marine and Coastal Protection Tools

LGs have multiple policy, legal, regulatory, planning and management tools to protect and restore marine species and habitats, and avoid or manage the negative environmental impacts of development.

Possible Actions:

- Inventory and disseminate LG marine and coastal planning resources and tools, starting with Box C, especially [Island Trust Marine Protection resources](#). (See also Appendix A, which lists a range of LG planning and development tools.)
- Collectively identify one or more promising resources/tools from the list in Box C and Appendix A, which LGs could apply on a Howe Sound/Atli'ka7tsem region-wide basis to improve marine and coastal protection, and pursue resources to implement these. Combine this work with action 1.1 to help build local marine planning capacity.

1.3 Take Local Action to Protect and Restore Priority Species and Habitats

OWHS 2017 identified priority species and habitats needing protection because they are essential ecosystem components; rare, threatened and/or sensitive, e.g., plankton, forage fish, sea stars, salmon, lingcod, rockfish, eagles, marine birds, cetaceans, eelgrass, glass sponges, estuaries and shorelines. LGs can help by collaborating with senior governments and NGOs to create Marine Protected Areas⁴ (MPAs), and using the tools described in Box C and Appendix A. Following are priority LG actions identified in OWHS 2017.

Possible Actions:

Marine Protected Areas: Increase the area of Howe Sound/Atli'ka7tsem covered under MPAs, with an immediate focus on glass sponge reefs, beach spawning habitat, water flow, [Important Bird and Biodiversity Areas](#) (IBAs), and Wildlife Management Areas. See LG MPA options in the Islands Trust Briefing [Marine Protection Options](#) (WCEL 2016) and consult WCEL for guidance, as needed.

Eelgrass: Work with DFO, FLNRORD, and NGOs to protect important eelgrass, e.g.,

- maintain backshore native plants to reduce erosion and sedimentation; establish no-anchor zones; avoid shoreline armoring; construct docks/jetties using materials that allow sunlight to penetrate;
- support education and restoration projects on eelgrass role, threats, and protection in [Howe Sound islands](#), [Bowen, Passage, and Bowyer Islands](#) and [Sechelt](#), and how citizens can help.

Salmon: Protect estuary habitat important for spawning and rearing salmon, and other species, e.g.,

- avoid/manage development in/near estuaries;
- rehabilitate modified rivers and streams, e.g., creating shaded riparian areas; and
- restore spawning and rearing channels, including reconnecting side channels and weirs.

Eagles and other marine birds:

- Require developers to identify eagle nests on their properties and adopt best practices for nest protection, e.g., vegetated, no-disturbance buffer zone around the tree.
- Work with ECCC and MOE to educate the public on Bald Eagles, IBAs, the *B.C. Wildlife Act* and regulations; and educate on viewing ethics, e.g., signage, Eagle Watch at Brackendale, webcams.

⁴ Marine protected areas (MPA): A defined area of ocean in which human activity is restricted to conserve the marine environment and wildlife (OWHS p. 273). Possible types of MPA in Howe Sound include: Federal: MPAs (DFO), National Marine Conservation Areas (Parks Canada); Provincial: Parks, Marine Parks, Wildlife Management Areas, Ecological Reserves; and Local/Regional: regional and municipal park, marine park and marine reserve designations. DFO fisheries closures can be used to protect specific species and habitats, e.g., Rockfish Conservation Areas and Glass Sponge Reef Closures.

2. COLLABORATE ON MARINE AND COASTAL PLANNING AND MANAGEMENT

The HSCF has been meeting to address common interests since 2002. In 2015, members sent council and board resolutions to senior governments requesting “comprehensive marine and land use planning” for Howe Sound/Atl’ka7tsem. While there is still no single integrated planning process, HSCF members, First Nations, senior government agencies (e.g., FLNRORD, TC, DFO, ECCC), NGOs, and community groups have been collaborating ever since to develop complementary tools for marine research, monitoring, planning and management (listed throughout this Plan). Many of these parties also participate in broader Salish Sea protection initiatives.

2.1 Continue with Regional Collaboration

This strategy involves continuing with formal and informal regional collaboration to advance “comprehensive marine and land use planning for Howe Sound/Atl’ka7tsem”, including coastal/shoreline planning.

Possible Actions:

- Continue to participate in and support the HSCF semi-annual meetings and information-sharing.
- Continue to support the OWTF work to advance LG role in protecting coastal ocean health.
- Consider new/revised governance options to strengthen LG regional coordination and representation on Howe Sound-wide planning and development issues.
- Organize occasional thematic workshops and forums to advance priority topics identified in this Plan, e.g., vessels of concern, foreshore management, monitoring and enforcement.
- Maintain an inventory of reports, plans and strategies on Howe Sound/Atl’ka7tsem ecosystems and update HSCF and community members on these initiatives (see also Strategies 2.1 and 5.1).
- Identify options for a long-term secretariat (e.g., seconded or paid position) to advance the work of the HSCF, including implementing this Plan.
- Secure resources, i.e., funding and expertise, to increase regional marine planning capacity for Howe Sound/Atl’ka7tsem as a bioregion. One option might be to fund a shared marine planner to assist and train LG officials and staff, and to support regional collaboration (see Strategy 5.1).
- Liaise with and support the [Howe Sound/Atl’ka7tsem UNESCO Biosphere](#) initiative.

2.2 Collaborate with First Nations Marine Planning

LG actions on this topic would involve cooperating with the Squamish Nation in developing the Squamish Nation *Alt’ka7tsem/Howe Sound Marine Use Plan*, as requested by the Nation. The plan would expand *Xay Temixw – Sacred Land*, the Squamish Nation’s Land Use Plan for the upper watersheds, by adding the marine environment and stream catchments down to the mouth of Howe Sound/Atl’ka7tsem.

2.3 Collaborate on Crown Land and Marine Planning and Management

Senior government agencies (FLNRORD, TC, DFO, ECCC) have jurisdictional responsibility for managing activities within Crown land, foreshore and marine areas, (including Marine Protected Areas), but their decisions directly impact local communities and ecosystems. LGs can contribute to planning and management for these areas, based on their jurisdiction in shoreline and upland areas. Current Crown land referral systems allow for LG input, but are inconsistent and don’t allow for substantive LG consultation on tenure and management decisions.

Possible actions:

Collaborate with FLNRORD to improve LG consultation on Crown land tenures under the *B.C. Land Act*, including forest licenses and foreshore leases.

- Improvements are needed in several areas: (a) referrals at the application and lease renewal stages; (b) reporting out to LGs; (c) compliance and enforcement with licence and tenure conditions; (d) cumulative impacts of foreshore structures on sensitive marine species and habitats; and (e) designing forestry cut blocks to protect viewscales for boaters, hikers, motorists and gondola visitors along Highway 99.
- Next steps might include: meetings with FLNRORD; a revised referral system or consultation protocol; multi-stakeholder workshop (follow-up to Bowen Island workshop); and/or inventory of legal and illegal docks, boat ramps and other structures, and a plan to address these.

Continue to liaise with FLNRORD on the *Howe Sound Cumulative Effects Assessment (CEA)*, which will assess the condition and trends for key environmental values as an aid to decision-making.

- Advocate for inclusion of more marine values in the next phase of the CEA.
- Use the CEA as an LG decision support tool, along with Strategy 2.1 Marine Reference Guide.
- Strengthen LG input on large marine and coastal projects, for example, consider establishing a collaborative body to provide collective input on large marine and coastal initiatives such as the Britannia Beach development and Squamish Terminal proposal.

3. SUPPORT & USE MARINE DECISION-MAKING AND REPORTING TOOLS

Planning and preparation of the [Howe Sound/Atl'ka7tsem Marine Reference Guide](#) (MRG) is underway. The MRG is intended to:

- provide a unified marine information resource for marine spatial planning and decision-making by all governments, communities and sectors (e.g., industry, recreation, tourism, conservation);
- offer resources and support to decision-makers, marine planners and marine sectors, so that marine environmental health and sustainable regional development can flourish in tandem; and
- linking marine planning and management to a regional ecosystem framework (Terms of Reference).

The MRG will be non-binding and respect the authority, rights and title, jurisdictions, and processes of existing First Nations, governments and sectors.

3.1 Create and Use the Marine Reference Guide

Possible Actions:

Support development and maintenance of the *Marine Reference Guide* through:

- continuing to support the OWTF and First Nations as the MRG Governing Partners, with responsibility to oversee the project and work with the Steering Committee, Management Team and Administration;
- cooperating with MRG organizers to identify needs and priorities of LG elected officials and staff for marine information and tools; and
- providing information, as needed, to include in the guide.

Once the MRG is complete, support its use by:

- adopting or endorsing the MRG as a planning and decision support tool (e.g., a resolution);
- integrating the MRG into LG staff work plans, with a focus on GIS/mapping staff, and into the LG planning and management “toolbox”;
- making local officials and staff available for MRG briefings, training and peer learning; and
- helping to monitor and report on MRG use, and providing feedback for revisions, as needed.

3.2 Cooperate with CORI on Ocean Watch: Howe Sound, 2nd Edition

Many HSCF members and community partners were involved in helping CORI prepare OWHS 2017, which led to this Strategic Plan (see Box D). For the OWHS 2nd edition, planned for 2020, CORI will update the data (where available), and summarize progress on actions proposed in the 2017 report, including the work of the OWTF. Any information that can be used for spatial decision-support and education will be integrated into Strategy 2.1, the Marine Reference Guide.

Possible Action:

- Cooperate with CORI, as needed, during preparation of the OWHS 2nd edition, e.g., by providing data, reporting on LG actions, and attending workshops, as requested.

Box D. Coastal Ocean Research Institute (CORI): Ocean Watch

CORI's Ocean Watch reports:

- provide snapshots of coastal ocean health on Howe Sound/Atl'ka7tsem species and ecosystems;
- identify data needed to monitor/track indicators and fill gaps (using science, traditional knowledge, and citizen science); and
- make the results public to inform marine and coastal planning and management.

4. STRENGTHEN MONITORING AND ENFORCEMENT OF LAWS AFFECTING HOWE SOUND/ATL'KA7TSEM

Senior government agencies (TC, DFO, ECCC, FLNRORD, ENV) take the lead on monitoring and enforcement (M&E) of laws and regulations affecting marine waters. M&E is a priority topic for LGs, who see the negative impacts of lack of compliance on marine and coastal species and habitats, and can play a role in M&E, based on their jurisdiction over shoreline and upland areas.

4.1 Collaborate with Senior Government on Monitoring and Enforcement

Possible Actions:

- Pursue formal LG regional participation in Transport Canada's *Oceans Protection Plan*, including regional districts and Islands Trust involvement, to ensure a strong local voice during plan implementation.
- Establish a collaborative body involving senior government, LGs, First Nations, NGOs and/or adapt an existing process to improve regional coordination on M&E. Activities could include:
 - identifying priority M&E issues, starting with the list in Box E;
 - defining actions that could be taken by LGs (e.g., stronger zoning and enforcement powers);
 - strengthening the role of LGs and local communities as "eyes on the water" to monitor and report on compliance with marine laws and regulations, including citizen reporting, ranger, and First Nations guardian programs; and
 - identifying how LGs can help to secure additional M&E resources (staff, funds) for LG and senior government agencies (e.g., Councils and Boards letters; resolutions to Union of BC Municipalities, Canadian Federation of Municipalities).

Box E. Monitoring and Enforcement: Topics of Concern in OWHS 2017

Maritime Industry and Large Vessel Traffic:

- Transport Canada [Marine Pollution Sources and Regulations](#) and B.C. licensing regulations for vessels using or transiting the Sound
- Transport Canada [Ship Source Oil Pollution Fund](#) (polluter-pay law) re: problem vessels
- Sections of the *B.C. Land Act* that prohibit changes below the high tide line without a lease and set lease conditions (FLNRORD)
- *Canadian Environmental Protection Act*, including the [Disposal at Sea Regulations](#)

Marine species, birds and their habitats:

- DFO [Fisheries Act](#), [Marine Mammal Regulations](#) and [Be Whale Wise Regulations](#) and [violations](#):
 - prawn and shrimp fishing regulations, especially Marine Protected Area closures
 - commercial and sport fishing regulations on limits, openings, closures and no-catch areas
- ECCC: [Canadian Environmental Protection Act](#); [Environmental Enforcement Act](#), [Species at Risk Act](#); and [Migratory Birds Convention Act](#)
- Regulations for Federal and Provincial Marine Provincial Parks and other MPAs, and regulatory closures such as Rockfish and Glass Sponge Conservation Areas
- [B.C. Wildlife Act](#) protection for Bald Eagles and nests, and prohibition of bird harvesting
- Water quality standards in the Sound, including at the Britannia Mine

4.2 Protect Marine Water Quality

Marine water quality is a shared responsibility, with senior governments (TC, DFO, ECCC, ENV) taking the lead. However, LGs can play a role because of their jurisdiction and powers for managing shoreline and upland areas, including protecting rivers, streams, riparian areas and shorelines, and managing entry of land-based solid and liquid waste (e.g., sewage) into the marine environment. Some local governments, such as [Bowen Island](#), have adopted water zoning for marine coastal areas that extend 300 metres seaward from the high-water mark.

Possible actions:

Work with senior government agencies (TC, DFO, ECCC, ENV) to address water issues, e.g.,

- identify and address issues related to the management of solid waste, wastewater and sewage outfalls, septic fields, including toxic run-off (e.g., educate the public on non-toxic organic or “green” fertilizers and pesticides);
- encourage more marinas to have boat pump-out stations (Gibsons is the only one so far);
- provide facilities and education to reduce the entry of dioxins into the marine environment, (e.g., provide for recycling and/or safe disposal of marine debris containing dioxin-contaminated oil and other fluids, including from shoreline clean-up, batteries, paint, solvents, pesticides, fertilizers, and leakage from old tanks and bins from old military and industrial sites, junkyards and harbours);
- ban “backyard burns” to prevent dioxin release into air and water;
- use best technologies for “clean” incineration of sewage sludge, medical waste, and municipal solid waste, including organic matter and plastics; and
- encourage alternatives to incineration as a source of heat.

4.3 Manage the Impacts of Marine Tourism and Recreation

Managing marine-based tourism and recreation, including sport fishing, is a shared responsibility, with senior government agencies (TC, DFO, FLNRORD, ENV) taking the lead. However, LGs can play a role because of their jurisdiction and powers in shoreline and upland planning and management.

Possible Actions:

Work with senior government agencies (TC, DFO, FLNRORD, ENV) to assess compliance with laws and regulations affecting tourism and recreation on Crown lands, foreshore and marine areas, and strengthen enforcement, as needed. Activities might include:

- Provide and maintain more public boating access points, shoreline parks and facilities to reduce pressures on the few existing and often overcrowded access points. Work with FLNRORD to provide support and incentives for communal/public docks over private ones (Strategy 3.1).
- Work with ENV on providing facilities and services for Provincial Parks and Marine Parks to prevent ecological damage from recreational activities.
- Work with TC harbour authorities and marinas to increase boat licensing, registration and maintenance (see TC [Pleasure Craft Operating Card](#)).
- Promote green recreation and tourism guidelines and certifications e.g., [Blue Flag](#)⁵ and [Clean Marine](#) (Georgia Strait Alliance) environmental certification for private marinas and local municipal, regional and B.C. park beaches.

4.4 Collaborate on Problem Vessels and Structures

Senior government agencies (TC, DFO, FLNRORD) have shared legal responsibility to identify and safely remove derelict vessels and structures, (e.g., broken docks, Styrofoam), and prevent new ones. This is a priority topic for LGs, who both experience the negative impacts on marine and coastal environments, and can contribute to solutions using their powers to plan and manage shoreline and upland areas.

Possible Actions:

- Contribute collectively to the Vessel of Concern (VOC) Inventory being compiled by Coast Guard (2019); with Bill C-64⁶ coming into force, DFO is assessing and prioritizing risks in the region, and seeking LG input.
- Build on past collaboration on VOC to establish a multi-stakeholder body (e.g., senior governments, First Nations, LGs, NGOs) and process to share information and find solutions, including:
 - identifying and addressing jurisdictional gaps in regulating problem vessels;
 - enforcing Transport Canada's [Ship Source Oil Pollution Fund](#) (polluter-pay law);
 - leveraging available funding to maintain and share vessel inventories, e.g., Bowen Island Municipality inventories vessels in Mannion Bay every six months. (Note: Strategy 2.1 Marine Reference Guide will have a layer for "Problem Vessels and Structures");
 - educating LG officials, staff and communities on VOC prevention and solutions; and
 - strengthening and enforcing LG laws and regulations re: live-aboards.

5. ADDRESS CLIMATE CHANGE IMPACTS ON COASTAL ECOSYSTEMS

5.1 Collaborate Regionally on Climate Change Mitigation and Adaptation

Climate change (CC) is a cross-cutting issue affecting many aspects of local decision-making. Numerous programs and resources are available to help LGs address climate change mitigation and adaptation at the local level. For example see [BC Climate Action Toolkit](#); [Islands Trust resources](#); [B.C. Environment resources](#), including [Preparing for Climate Change](#): an Implementation Guide for Local Governments in B.C.; University of Victoria [Plan to Adapt Toolkit](#); and [BC Municipal Climate Leadership Council](#).

⁵ Blue Flag certification is based on criteria for water quality, environmental management, education, safety and services.

Gibsons Marina was certified in 2016, but no beaches are certified yet. Boaters can fly the flag if they sign a Pledge of Conduct.

⁶ An Act respecting wrecks, abandoned, dilapidated or hazardous vessels and salvage operations.

Possible Action: LGs in Howe Sound/Atl'ka7tsem can work collectively to learn about and apply these resources through workshops and other forms of peer learning and experience sharing.

5.2 Address Impacts of Sea Level Rise and Stream Flow Changes

This strategy lists actions to address CC impacts on marine and coastal ecosystems, the focus of the Plan.

Possible Actions:

- Increase local capacity to adapt to sea level rise and extreme weather events, (e.g., storms, flooding, landslides, extreme heat and drought), especially in high flood risk areas, such as those identified in Squamish's [Integrated Flood Hazard Management Plan](#) (IFHMP) and other reports, e.g., [BC Parks Shoreline Sensitivity Analysis](#).
- Share resources and best practices on planning for sea level rise and flood hazard management (e.g., Squamish IFHMP), and encourage similar studies for other communities (see references under action 5.1 and Boxes C and F).
- Work with DFO to strengthen LG regulations protecting riparian areas to help mitigate warming temperatures, including protecting cold water "refugia" in streams and rivers.
- Work with BC Hydro and DFO to ensure sufficient water flow in managed rivers to support salmon spawning and migration. (Contact the Fisheries Advisory Committee regarding the end of this program, and what can be done to address the flow issue in future.)

Box F. Sample Local Government Climate Change Coastal Adaptation Measures

- Integrate climate change hazard assessments into land use planning and regulation, and emergency response planning.
- Assess and reduce risks from sea level rise, storm surges and flooding on shoreline communities; compare the benefits of traditional flood control methods ("hard" infrastructure such as dikes, walls) with "soft shores" approaches that work with nature (e.g., Green Shores).
- Identify areas at high risk for shoreline erosion, flooding, and landslides; and limit and manage development in these areas, i.e., designate "no-build" zones.
- Raise flood construction levels, add covenants to reduce liability, and retrofit existing buildings.
- Look for ways to repurpose or relocate public and private assets in high flood/landslide risk areas.
- Educate the public on the local impacts and risks from climate change (e.g., flooding, landslides, drought, coastal squeeze); the resulting land use and public health impacts; adaptation strategies; and how they can get involved.

6. SUPPORT MARINE AND COASTAL EDUCATION AND STEWARDSHIP

OWHS 2017 identified the importance of continued education, citizen science, stewardship and environmental learning for protecting coastal ocean health in Howe Sound. Many LGs already use public outreach to achieve policy and planning objectives (e.g., shoreline protection, wildlife viewing), often partnering with NGOs, e.g., the annual [Great Canadian Shoreline Cleanup](#). LGs can support and expand the many existing programs targeted to local citizens, South Coast residents and visitors, capitalizing on the area's beauty, unique ecosystems and accessibility, and harmonizing protection, recreation and tourism objectives.

Possible Actions:

- Develop a program to educate and engage local communities and visitors about Howe Sound/Atl'ka7tsem as a bioregion, link the content and methods to strategies 1 – 5 above (see priority topics and messaging in Box G).

- Build on/partner with existing awareness and education programs (e.g., First Nations, NGOs, camps and environmental educators, and tourism businesses).
- Focus on opportunities for outdoor and experiential learning, from pre-schoolers to seniors.
- Integrate the results of citizen science into LG planning and development decisions.
- Support ongoing education, citizen science and stewardship initiatives through publicity, technical assistance, partnerships and/or funding (see list of groups in OWHS 2017, p. 183).

Box G. Possible Topics for Education, Citizen Science, Stewardship (OWHS 2017)

- Important, threatened, and sensitive marine and coastal species, habitats and ecosystems, including estuaries, shorelines and riparian areas
- Marine Protected Area values, boundaries and regulations; and new areas needing MPA protection
- Laws and regulations protecting marine wildlife and habitats
- Cetaceans: DFO [Marine Mammal Response Program](#) and [Regulations](#) and [Be Whale Wise Guidelines](#);
- Fishing, seafood harvesting, and wildlife viewing ethics and best practices
- Vessels of Concern
- Preventing dioxin release from incineration of organic matter and plastics
- Use of non-toxic organic or “green” fertilizers and pesticides to avoid toxic run-off
- Recreational boating regulations, boat maintenance, licenses, and registration
- Local climate change risks, impacts, and possible mitigation and adaptation measures

APPENDIX A. LOCAL GOVERNMENT ENVIRONMENTAL PROTECTION TOOLS

This table summarizes the range of local government policy, legal, regulatory and planning tools that can be used to protect and restore marine species habitats, and to avoid or mitigate the negative environmental impacts of development (see also [Island Trust Marine Protection resources](#)).

TOOLS	EXAMPLES
1. Policies	Environmentally Sensitive Areas policies, Shoreline Protection policies, Green Procurement policies
2. Plans and guidelines	Official Community Plans, regional plans, growth strategies, sustainability plans/strategies, climate change plans, flood hazard plans, biodiversity plans, economic development strategies
3. Legal and regulatory instruments	Laws, policies, regulations and bylaws, for example: zoning and development permit areas (DPAs), Environmental (Sensitive) Development Permit Areas (ESDPAs & EDPAs), conservation easements, covenants and dedications, B.C. ENV Riparian Area Regulation (for local governments), waste disposal and management regulations
4. Land, freshwater and shoreline designation and management	Parks, protected areas and other greenspace, including greenways/green belts/green corridor: acquisition, planning and management of greenspace
5. Standards and guidelines	Shoreline/coastal development guidelines, urban and rural land development or design guidelines, e.g., Shoreline Care
6. Infrastructure, engineering and energy	“Green”/ best practices in engineering and service provision, e.g., Green Shores , soft infrastructure, environmentally sensitive public realm planning, green energy plans and incentives
7. Community/public awareness, education and engagement	Public awareness campaigns, participatory programs, community and business engagement, e.g., stewardship projects, Shoreline Cleanup
8. Partnerships and collaborations with senior government agencies, First Nations, NGOs, business & community groups	Information-sharing, cooperation and collaboration with senior government agencies (Federal and Provincial) Collaboration with groups involved in education, conservation, citizen science and stewardship programs, e.g., offer publicity, technical assistance, partnerships and/or funding. Collaboration with tourism, industry, development and business organizations on green business and green development practices, e.g., certifications, voluntary guidelines, and environmental incentives, awards and recognition

"In our world, where we come from there is the great circle that we call a medicine wheel. We walk into the future backwards because we are looking to our ancestors. If you are listening to your elders you are learning our traditions and culture. What was given to you is now in your arms. So that sometime in the future you can turn around and give it to your grandchildren. What took place you can give to your children. That is the value of our circle."

T'ÉCHUXANM-T SIYÁM (LATE CHIEF JOE MATHIAS),
SQUAMISH NATION

COVER PHOTO: GARY PIECEHEN

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