

You are invited to participate in Marine Spatial Planning

Canada's three oceans support an abundance of ecological and biological life that has provided food and medicines to Indigenous communities for thousands of years. Oceans have also served as historical transportation routes for trade and social interaction – and they are part of our cultural identities as First Nations, Inuit, and Métis peoples.

There are so many demands on today's oceans, which are only expected to grow. In addition to traditional fishing and marine transportation, there is now oil and gas exploration, aquaculture, sand and gravel mining, eco-tourism, and renewable energy in ocean areas. Effective management of competing interests in these spaces is critical to protect the marine environment and sustain the health of oceans resources for future generations.

Marine spatial planning is an internationally recognized approach for integrated oceans management in today's world.

It's about organizing where and when human activities may take place in a particular marine area to balance the needs of nature, industries, and coastal communities.

Marine spatial planning requires collaboration across multiple levels of government – federal, provincial, territorial, municipal, and Indigenous – when making decisions. It also requires collaboration amongst those who benefit from industrial activities in the oceans and those with an interest in preserving oceans health and diversity for future generations. These are the core elements of oceans co-management.

Fisheries and Oceans Canada has committed to strengthen its relationship with Indigenous peoples based on the recognition of rights, respect, co-operation and partnership. Marine spatial planning is one way to advance this commitment. To do that, two things have to occur.

First, there must be appropriate engagement and participation of Indigenous leadership in marine spatial planning processes. This is underway between Departmental officials and various governance

bodies such as the Assembly of First Nations, regional Indigenous groups, First Nations, and leadership organizations in the Inuit Nunangat.

There must also be appropriate involvement of Indigenous groups, communities and people in marine spatial planning technical activities.

That's where the National Indigenous Fisheries Institute comes in. We are a technical organization that promotes consistency and standards across Fisheries and Oceans Canada's Indigenous programs. Our mission is to work with communities, regional organizations, and government agencies to maximize the potential of oceans, fisheries, and other aquatic management programs and activities for the benefit of Indigenous peoples.

The work of the Institute began in 2017 when the Department announced a review of five Indigenous programs, including the Aboriginal Aquatic Resource and Oceans Management Program. During this review, we learned that aquatic resource and oceans management groups want to be more involved in oceans management activities. In particular, they want to fill technical data gaps, have a real and meaningful role in decision-making, and be able to inform decisions with Indigenous knowledge and western science.

Marine spatial planning is an opportunity to address these technical aspirations.

It is also an opportunity for Fisheries and Oceans Canada to implement some of our Program Review recommendations. For example, we recommended that the Department build Indigenous co-management capacity by investing in Indigenous knowledge systems. This could include investing in tools to help groups and communities gather, record, digitize, integrate, and store Indigenous knowledge.

We also advised the Department to use the science, technical data, information and knowledge generated by aquatic resource and oceans management groups in decision-making and management planning processes.

The Department has asked the Institute to engage Indigenous groups and communities in marine spatial planning discussions, and to gather information about their technical capacity to meaningfully participate in related activities.

This discussion guide is one part of our engagement. It is intended to explain in general terms marine spatial planning and the potential technical roles and tools that may be involved. We encourage aquatic resource and oceans management groups and Indigenous communities to use this information to consider whether they have the technical capacity at present to participate in marine spatial planning activities and, if not, what their capacity and related training needs may be.

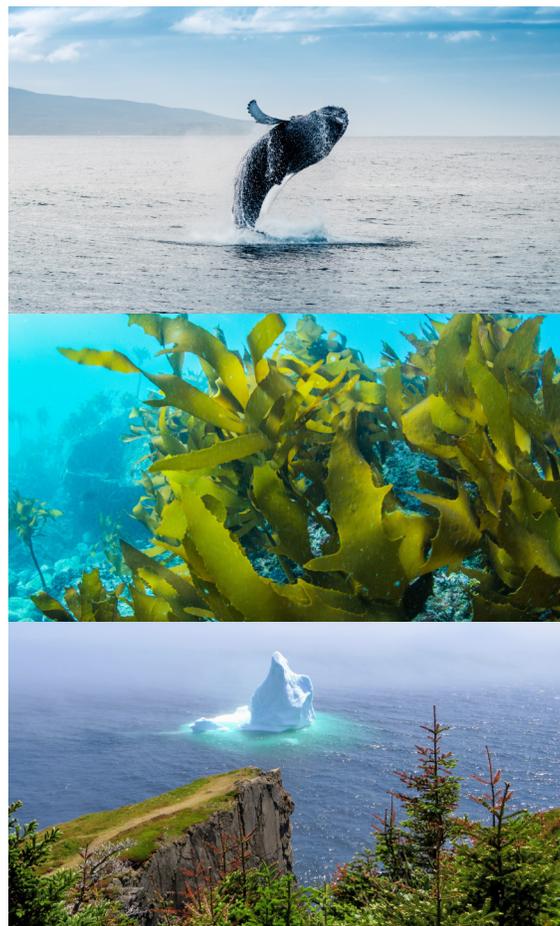
Engagement will include in-person discussions.

In spring 2019, the Institute will host workshops in the Pacific and Atlantic regions to further explore Indigenous technical capacities to participate in marine spatial planning. In-person engagement sessions will be based on the questions posed at the end of this discussion paper and information gathered will inform a technical capacity needs final report with recommendations for action by the Department.

Indigenous communities in Canada have long managed marine and coastal areas in their traditional territories. They also have a history of collaborating to share the wealth of oceans spaces with multiple interests, while protecting the marine environment as well as the aquatic plants and species that depend on it.

Marine spatial planning is an oceans management activity in which Indigenous Peoples must be involved to continue our legacy.

We look forward to receiving your feedback on this activity.



John G. Paul • Jordan Point • Ken Paul
Jeff Maurice • The Honourable Ethel Blondin-Andrew
Chief Bob Chamberlin • Lina Condo

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Marine Spatial Planning

It's about where and when activities may occur and it's about balance.

Marine spatial planning is a process for organizing and managing activities that may take place in specific areas of the ocean, such as fishing and shipping, while setting aside other areas for conservation. It's like urban planning, which designates areas for commercial, residential, and recreational use, while maintaining parks, waterways, and other green spaces.

Put simply, marine spatial planning strives to balance the demands for development and other oceans uses while protecting marine ecosystems.

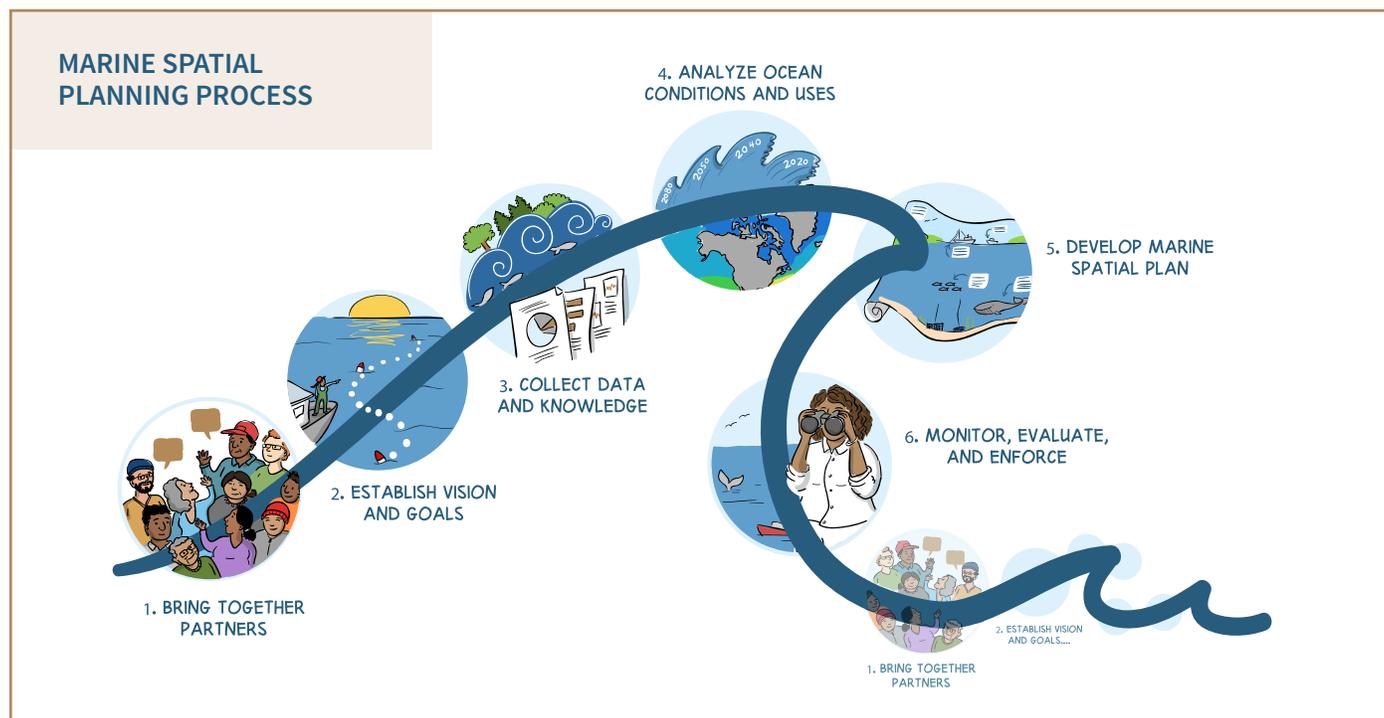
Marine spatial planning is a dynamic process, which results in a marine spatial plan that is regularly updated. It does not replace the planning and management activities of individual industry sectors; rather, it is framework to reflect all marine activities in a single plan and to recommend suitable areas for these activities.

WHAT IS THE PROCESS?

Marine spatial planning begins by bringing together partners to establish goals, objectives and indicators for a specific marine area. For example, the goals of a marine area may be to conserve or protect marine resources, restore degraded areas, and enable the use of marine spaces for economic growth. To realize these goals, objectives may be focussed on:

- expanding the network of conservation areas
- protecting essential habitat for species at risk
- ensuring adequate marine space is available for industries, such as fisheries and offshore energy

Once set, the goals and objectives will guide the overall vision of the marine spatial plan. The goals and objectives will also direct the remaining planning process phases, such as data and knowledge collection, analysis of ocean conditions and marine uses, and the monitoring, evaluation, and enforcement of management measures.



Canada has already set two specific objectives to support marine spatial planning:

- effective federal, provincial, territorial and Indigenous governance structures
- a publicly accessible bioregional marine atlas showing human activities and environmental features resulting from data and knowledge collection and analysis

WHAT ARE THE SOME OF THE TECHNICAL ROLES?

Marine spatial planning practitioners typically include a multi-disciplinary team of biologists, ecologists, geographers, and economists as well as planners with specific skills, knowledge and experience as illustrated in table 1¹ below. The technical roles and skills of some planning practitioners are highlighted in red.

SKILL TYPES			
FUNCTIONAL ROLES	Knowledge & General Aptitudes	Programmatic Skills	Administrative Skills
Program Management	<ul style="list-style-type: none"> • Strategic thinking about time and space 	<ul style="list-style-type: none"> • Strategic planning • Financing • Project implementation 	<ul style="list-style-type: none"> • Organizational management
Authority	<ul style="list-style-type: none"> • Knowledge of spatial implications of legislation 	<ul style="list-style-type: none"> • Legal analysis 	
Analysis	<ul style="list-style-type: none"> • Analytical thinking about space and time 	<ul style="list-style-type: none"> • Spatial database management • Geographic information systems (GIS) 	
Planning	<ul style="list-style-type: none"> • Conceptualization • Spatial systems thinking 	<ul style="list-style-type: none"> • Problem assessment • Strategy design • Plan development 	<ul style="list-style-type: none"> • Coordination
Implementation	<ul style="list-style-type: none"> • Conflict resolution 	<ul style="list-style-type: none"> • Negotiation 	
Monitoring and Evaluation	<ul style="list-style-type: none"> • Cause-and-effect thinking 	<ul style="list-style-type: none"> • Monitoring planning • Assessment methods 	<ul style="list-style-type: none"> • Evaluation
Communications and Community Coordination	<ul style="list-style-type: none"> • Strategic communications 	<ul style="list-style-type: none"> • Product planning • Product development 	<ul style="list-style-type: none"> • Routine communications

TABLE 1: IMPORTANT TECHNICAL ROLES AND SKILLS OF MARINE SPATIAL PLANNING PRACTITIONERS

¹ Ehler, Charles, and Fanny Douvère. *Marine Spatial Planning: a step-by-step approach toward ecosystem-based management*. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO. 2009 (English), p. 37.

While the technical involvement of Indigenous groups and communities in marine spatial planning may take on many forms, it is envisioned that their roles will span all phases of the planning process. For example:

During the initial planning phase, a **community coordinator or communications specialist** may:

- liaise with one or more Indigenous communities and planning committees to ensure that the planning process is accessible to communities (e.g., location/timing of meetings, language considerations)
- organize meetings with community representatives and/or Indigenous groups, including planning agendas and leading discussion items
- develop Indigenous-related communications content for all involved planning partners
- develop or assist in developing communications products, such as graphics and videos that highlight the Indigenous components of marine spatial planning for use in workshop materials, websites, and social media

During the data and knowledge collection and analysis phases, a **marine biologist and/or an Indigenous knowledge coordinator or analyst** may:

- identify (e.g., through aquatic field work, interviews with Elders, etc.) and map species or marine areas of cultural, ecological, and/or economic importance
- liaise with communities and other partners to identify Indigenous knowledge research needs and manage resulting research projects
- develop data-sharing protocols
- advise and/or identify solutions for the use and storage of Indigenous knowledge
- interpret spatial analysis to assess how current, potential and future marine activities may impact marine resource use in traditional territories

During the monitoring, evaluation and enforcement phase, a **guardian or stewardship technician** may:

- monitor activities, take samples, record observations, and collect data at particular marine sites (e.g., protected areas) to study and assess environmental changes
- lead and/or partner in restoring cultural and natural resources in traditional territories

Sixteen First Nations in British Columbia's Northern Shelf region are working together with the Government of Canada and the Province of British Columbia to develop a marine protected area network. Representatives from all three levels of government co-chair the Marine Protected Area Technical Team and First Nations are involved in all aspects of the team's work. This includes developing communications materials for stakeholders, drafting content for the website, organizing stakeholder meetings, leading discussion items, interpreting spatial analysis, and providing guidance to the planning process.

The Nunatsiavut Government has launched a marine planning project, *Imappivut*, in their coastal and marine zone to reflect Inuit history, culture, and connection to the land and sea. *Imappivut* (Our Ocean) involves working with local communities to represent their interests, establishing coordinators within these communities, collecting Inuit knowledge, and mapping Indigenous marine locations and resources that need protection and stewardship. This community-driven project seeks to increase decision-making capacity in Nunatsiavut waters to contribute both to the *Imappivut* marine plan and the Government of Canada's marine conservation planning work. The project may also cover areas related to shipping, protection, research, subsistence fishing, commercial fisheries, and tourism.

Wolastoqey Nation informed the development of a marine protected area network in the Scotian Shelf and Bay of Fundy area. The Nation reviewed existing studies of Wolastoqey coastal and marine use in the Bay of Fundy to outline both past and present uses. Traditional coastal use information was then overlaid with maps of potential marine protected area boundaries to identify which areas may overlap with Wolastoqey use in the Bay of Fundy and Gulf of St. Lawrence. The Nation also met fisheries staff from member communities to discuss the potential impacts and benefits of the marine protected area network on their communal-commercial, food, social and ceremonial, and moderate livelihood fisheries.

The Beaufort Sea Partnership has a traditional and local knowledge coordinator and a working group of Inuvialuit community members to help incorporate traditional and local knowledge in oceans management decisions related to this marine area. The coordinator has led the creation of an Inuvialuit traditional and local knowledge catalogue, which aims to improve accessibility of Inuvialuit documents, and guided the development of an Inuvialuit traditional and local knowledge policy. This work has supported the use of traditional and local knowledge in a variety of projects and helped to ensure that this knowledge is archived properly.

Coastal Guardian Watchmen in Kitsoo/Xai'Xais Nation monitor and protect their territory's natural resources. They do this by patrolling a wide marine area of the Pacific Central Coast to collect data to support indicators for key species and to note human pressures on the ecosystem. *"We'll enter how many crab traps we see and where they are, how many boats we see and what they're doing [...] We'll record locations of logging and fishing tenures to monitor whether they're operating in the right zone [...] We have a long list of things to check and all these indicators show us how everything is interconnected."*

WHAT ARE SOME OF THE TOOLS?

Many marine spatial planning tools coincide with the technical roles described above, but there may also be tools specific to the marine area and/or technical team activities. For example, to fulfill their duties:

- a communications specialist or community coordinator may use word processing and presentation software, WordPress or other website content management systems, graphic design software or personnel, and collaborative project management software such as Microsoft SharePoint Platform
- a marine biologist or Indigenous knowledge coordinator/analyst may use geographic information system and data analysis software, such as Marxan or ArcGIS, environmental or biological sampling equipment, such as marine probes or nets, data storage devices, and vessels or other vehicles to access remote locations
- a guardian or stewardship technician may use environmental and biological monitoring equipment, mobile tracking devices, and vessels or other vehicles to access remote locations

Technical staff in Indigenous groups or communities may already use some of these tools through their involvement in oceans science and technology (e.g., Oceans Research in Canada Alliance), ocean literacy and education, and other oceans management activities.

WHAT IS SOME OF THE TRAINING?

There are many environmental and resource management training courses that would prepare monitors, guardians, and stewardship technicians to collect and monitor data relevant to marine spatial planning. For example, the Coastal Stewardship Network develops and delivers custom training programs to stewardship staff, such as applied stewardship skills, compliance and enforcement, and safety policies and procedures.

There are also classroom and online training courses to help marine spatial planning practitioners use geographic information systems and other data mapping technologies. This includes a number of diplomas related to geographic information system applications.

For Indigenous groups and community coordinators, training to work with Elders on Indigenous knowledge gathering may be an additional need. This training could cover, for example, best practices on conducting interviews, interpreting and applying knowledge, and learning by doing.



WHERE IS MARINE SPATIAL PLANNING TAKING PLACE?

Over the next year, Fisheries and Oceans Canada is focusing its efforts on advancing marine spatial planning in five marine areas:

Salish Sea • Pacific North–Central Coast • Bay of Fundy–Scotian Shelf • Newfoundland–Labrador Shelves • Gulf of St. Lawrence



Glossary of Terms

Adaptive management

A systematic process to continually improve plans and practices by learning from the outcomes of previous plans and practices.

Geospatial data

Data with a reference to a geographical location that is collected to support objectives such as economic growth, environmental management, and social well-being.

Marine Protected Area

A clearly defined geographical space recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

Marine Protected Area Network

A collection of individual marine protected areas that operates co-operatively and synergistically, at various spatial scales and with a range of protection levels, in order to fulfill ecological aims more effectively and comprehensively than individual sites could alone.

Marine Spatial Planning

A process that brings together the relevant authorities to better coordinate how we use and manage marine spaces to achieve ecological, economic, and social objectives.

Assessing Technical Capacity and Technical Capacity Needs

Marine spatial planning builds on past ocean management experiences, including the development of integrated management plans. It is an important way for Indigenous groups and communities to be more involved in the management of Canada's oceans. It is also an opportunity to ensure that the marine data and knowledge of community members and technicians are used to inform decision-making.

In support of marine spatial planning, Fisheries and Oceans Canada has multi-year funding to help Indigenous groups and communities build their oceans management technical skills and capacities.

This discussion paper seeks to understand and assess the technical capacity needs of Indigenous groups and communities by asking for input on the following questions. These and other questions will be discussed during workshops hosted by the Institute in spring 2019. Invitations will be sent to aquatic resource and oceans management groups in the five marine areas along with any communities that do not belong to one of these groups.

At the same time, Fisheries and Oceans Canada will engage in conversations with Indigenous leaders and rights holders to talk about marine spatial planning and Indigenous involvement at the governance levels.

TECHNICAL ROLES

1. Reflecting on the marine spatial planning process explained in this document, does your group or community presently have technical capacity in one or more of the following areas?
 - Program management
 - Community coordination and/or communications
 - Graphic design
 - Data collection (e.g., ecological and/or socio-economic data)
 - Marine biology
 - Working with Elders, Indigenous knowledge collection, coordination and/or analysis
 - Data analysis (e.g., geospatial and/or socio-economic) and natural resource or fisheries management planning
 - Fishery guardian, stewardship technician and/or other marine monitoring or evaluation technician, with expertise in stock assessment, mitigation, and/or habitat restoration
2. Does your group or community presently have other technical capacity that has not been identified in this paper? If so, please list.



3. What technical roles do you envision your group or community participating in?

- Community outreach and planning
- Data collection and/or analysis
- Indigenous knowledge collection, coordination and/or analysis
- Ongoing monitoring
- Enforcement of marine management measures
- Other (please list)

TECHNICAL TOOLS

4. Does your group or community presently have one or more of the following technical tools?

- Word processing and/or presentation software, such as Microsoft Office Suite
- WordPress or other website content management systems
- Graphic design software
- Access to a geographic information system (GIS)
- GIS software, such as Marxan or ArcGIS
- Environmental or biological sampling equipment (e.g., marine probes or nets)
- Database software and/or data storage device(s)
- Vessels and/or other vehicles to use to access remote locations
- Mobile tracking device (e.g., Coast Tracker)
- Sensor technologies (e.g., gas, nutrient, pH)
- Video and/or drone technology
- Collaborative project management software (e.g., Microsoft SharePoint Platform)
- Language translation and interpretation

5. Does your group or community presently have other tools relevant for marine spatial planning activities that have not been identified in this paper? If so, please list.

6. What tools do you need to participate in the roles you envisioned in question three? Please list.

CAPACITY-BUILDING AND TRAINING

7. What are the immediate and long-term technical capacity needs of your group or community to be able to participate in marine spatial planning?
8. What are the training needs of your group or community to fill marine spatial planning roles and/or to use marine spatial planning tools?

POTENTIAL PARTNERSHIPS

9. Are there partnerships or collaborations that your group or community think would help build your technical capacity to be more involved in marine spatial planning or other oceans management activities?
10. Are there partnerships or collaborations that your group or community think would help with the development of a protocol for the gathering and use of Indigenous knowledge?



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