What We Heard

"I like that we're not constrained by an existing program at this workshop – it's more open ended with better conversation because it's just being developed."

Technical Interest, Capacity and Expertise in Oceans Management

"Working in the marine area is not cheap. You need boats, equipment and training."

- Participants included representatives of five First Nations along with an aquatic resource and oceans management group that serves 14 First Nations.[1]
    - Two are partners in an offshore marine protected area collaboration with other First Nations which includes coast-wide objectives. One participates in the marine plan partnership in the North Pacific coast. Another is involved in the Parks Canada National Marine Conservation Area initiative for the southern Strait of Georgia.
    - Two are presently mapping and identifying kelp beds in traditional territories. *"You couldn't drive through kelp beds in the past they were so thick, now we can't find them."*
    - One has two linked marine use plans; one community-based and one regional. The community-based plan is used more for internal needs, including their land claim. Elders and other knowledge holders do observations to identify concerns, such as changes over time regarding where species are harvested and how many. The regional plan includes the Province, the Department, and neighbouring First Nations.
    - Several were involved in a coastal planning process a decade ago which employed 15 marine planning coordinators to host community meetings, interview members, and hold mapping sessions to gather ideas for the future of the marine environment. The project built community capacity for future jobs by providing accredited training through North Island College's Innovate Program in geographic information system (GIS) mapping, computer use, grant writing, negotiation skills, spatial interviews, essential skills, and facilitation. *"We use it as a decision-support tool, but it wasn't very popular from a planning perspective. A lot of Nations weren't happy with the zones because they didn't match up with asserting rights."*
    - All have GIS in-house, but this technology may be used more for land-use plans or there are training needs within the community to make better use of GIS systems. *"Marine planning will work beautifully with our land-use plan. That was completely community-driven."* Some also contract externally to meet mapping needs.
    - One has a mandate from Chief and Council to develop community capacity in marine-related areas. *"I looked at youth; went to schools and pushed them into university tracks."* Another has a formal program to provide hands-on learning to post-secondary students enrolled in science programs through summer internships. *"Two of our biologists started like that."*

[1] There were also representatives from two First Nations who largely observed the session.

- Participants have access to traditional knowledge and data on which to compare present information. For example, two have traditional use studies. *"We started with a traditional knowledge database and interviewed all Elders about burial sites, old village sites, food gathering (season-to-season) and other cultural sites. Within four or five years, all of the information was collected."* One insisted traditional knowledge be collected alongside scientific data to inform their marine plans. *"Satellite looks at the area; traditional knowledge tells us what's actually happening on the water."*
    - One said their traditional use study was somehow acquired by the forest industry. *"They know the areas they should avoid, but they're not supposed to have it."* Another has a data-sharing agreement with the forest industry, while others have policies in place to protect their knowledge. *"We need to get approval to use Indigenous knowledge, including whether others may use it."*
- Participants are concerned about the impacts of marine traffic on oceans resources; especially, species of import for community fisheries and water quality. *"Decisions made for the southern resident killer whale are really affecting us because it's shutting down a lot of fisheries."* Some want to track ships as they move along and note that there are communication gaps along shipping routes up the coast. One participated in a session with a consultant to help them understand vessel traffic and marine shipping risks.
    - Members of a few participant Nations have been trained to respond to marine spills, marine first aid and search and rescue. The guardians of another are interested in becoming first responders to deal with spills and other emergencies. *"We're trying to build capacity to expand their roles. They need equipment and training to do this."*
- Several are concerned about the multiple marine initiatives being undertaken by different areas of government, the lack of coordination among each and, in some cases, lack of engagement of Nations. *"There's a lot of federal stuff happening, but they're coming to us AFTER they've made changes. For example, marine conservation areas and the marine protected area network. We haven't really been involved in them."*
    - One noted the conflict among marine users with fisheries users not seeing the point of marine use planning because they think fishing management tools and policies are sufficient to manage marine areas – and conservation supporters not understanding the importance of the fishery to communities. *"With MSP, fisheries may be minor, too, with more focus on shipping."*
    - A few support more outreach being undertaken by governments to ensure all Indigenous communities and groups are involved in marine spatial planning and other oceans management activities. *"Technical capacity is absolutely critical for this."*

Technical Roles

"The first person we're going to hire is a marine planner."

- Participants have a range of personnel, such as natural resource managers or committees, environmental referral managers, marine biologists, and community coordinators, but these roles are typically focussed on fisheries-related (or land-claim) activities. *"We're trying to build capacity around spatial planning [but] we're very much a fisheries program."* In some communities, these roles may also be filled by other departments, such as communications or research departments.

    - A few have an in-house marine biologist, and the aquatic resource and oceans management group has several. The others want to develop in-house biologist capacity as they are dependent on others for biology-related work. *"We rely a lot on [our AAROM]'s marine biologist. She's really key on helping us."*
    - Almost all have Indigenous knowledge collection and interpretation capacity. One has a Traditional Use Studies coordinator, another has Elder advisors, and another has a research department to do traditional use studies. One pointed to the capacity of a First Nations government as possible model for other Nations: this government has a GIS team with two mappers, two GIS specialists and 16 crew to collect and manage their spatially recorded traditional use study.
- Almost all participants have fishery guardian or guardian-type positions for monitoring and stewardship activities, including one that has community monitors funded through a collaboration with the forestry industry. At least two question, however, whether guardians have the capacity (or authority) to enforce a marine plan. *"It's premature to say that they're enforcing, but in some areas we're not backing down from telling people that they can't harvest there."*
- While some have a lot of data collection expertise, including through their guardian or community monitoring programs, others are trying to build this capacity or *"would like to be doing a lot more."* Data analysis (including spatial data) is a need shared by all and most contract external consultants for analysis-related work. *"We need to improve in this area. There's not a lot of capacity to do data analysis and many can't write reports."*
    - More than one want to develop their capacity to do risk analysis and to assess economic variables. *"It all comes down to money and trade-offs, and the cost-benefit analysis, when making decisions."*
- Participants support adding 'marine planner' as a key role, along with 'marine safety specialist' (e.g., spill response, transportation, etc.). Several also added policy analysts, environmental referral managers, economists, information managers and other technical roles related to the governance aspects of marine spatial planning. *"Developing Indigenous laws and rules around all this is still technical stuff."*

Technical Tools

"We're trying to build the capacity to understand MSP: what the tools are about without having to buy in…[because] most times, these things are just for other people to make money out of our territories."

- Participants have a range of equipment at present to work in the marine environment, including GIS, drones, cameras, water quality and other data collection equipment, and various software programs.
    - One has extensive assets, including different types of drones and cameras, GIS equipment (such as antennas), and 3D modelling software. *"We're now looking for a reliable pH scanner."*
    - Others have community-specific assets, such as polling equipment for members to vote on issues during community meetings, and ocean knowledge cards that promote cross-cultural learning about the importance of marine species from both ocean science and First Nations perspectives.

- When considering a range of technical tools that may be needed to participate in marine spatial planning, participants have common views:
    - All want more advanced vessels, whether this means larger, research-based vessels to facilitate at-sea activities in rougher at-sea conditions or vessels with advanced navigational instruments (e.g., better radar). *"The weather is changing and conditions are riskier in getting data."* Two also want newer vehicles.
    - Almost all identified the need for more people, including technical personnel, such as computer technicians and analysts, as well as professional development tools. *"We lack HR and activities to get the youth involved – and we're competing with forestry and tourism."*
    - All have software needs; especially, for collaborative project management software and environmental or biological modelling software, but also basic computer software and various GIS and Web mapping software products. *"We want to do sophisticated modelling to support layer MSP processes."* One also sees a need for automated information system software.
    - Three identified a need for weather stations (e.g., meteorological or hydrometric) among other monitoring and sampling equipment.
- Other technical tools identified by participants include data storage and ink for printing maps. One also has 'dry and wet lab facilities' on their wish list.
- Some participants are willing to share GIS and mapping software, along with sampling equipment and sensor technologies. One with an Indigenous knowledge protocol is willing to share it with others.

Technical Training

"We need to learn faster to inform the government…especially, the MPA Network group."

- Participants (or members of their Nations) have taken some or most of the training listed on the worksheets, but they identified an 'ongoing need' for member training. Two highlighted the need for GIS mapping training in their communities.
- Participants prioritize encouraging youth to pursue higher education in science- and technology-related degrees and helping other members complete grade 12 education so they can advance along technical careers. Several caution, however, that they do not want to encourage members to be trained in areas where there are no jobs or funding to sustain jobs. *"We have a lot of people with their PCOC, but they have no jobs."*
    - There is shared support for more training to broaden the duties of guardians and other community technicians and monitors in marine safety, oil spill and oil clean-up activities and research, environmental monitoring, and natural resource management. One thinks guardians also need training in 'enforcement and law.'
- Among other top training needs, participants chose basic training in computers, technical writing and public speaking, along with data collection, management and analysis. A few also want training in all of the software and technical tools required to be involved in marine spatial planning, as well as environmental planning. *"I want all my staff trained to use GIS, not just one, along with how to use drones, software and computers."*

    - A few want to take more Indigenous knowledge courses. *"COSEWIC did a course in Richmond in February on Aboriginal Traditional Knowledge and it was one of the best sessions. We need to emulate that."*
- Participants identified preferred training facilities as: North Island College, Coast Mountain College, Vancouver Island University, University of Northern British Columbia, Simon Fraser University, Nicola Valley Institute of Technology, Natural Resources Training Group, the Justice Institute, and British Columbia Institute of Technology. *"The more local the training, the better."*
    - There is also strong support for more training flexibility options. *"There is a serious need for courses to be offered in remote/teleconference ways."* One also said, "*Classrooms are sitting empty at [the college]."*

Partnerships

"We're already working to determine how Nations want to govern these spaces without being responsive when government comes around."

- Participants support more partnerships with:
    - other Nations and/or among member Nations in their groups
    - federal and provincial departments and initiatives, such as Fisheries and Oceans Canada, Environment and Climate Change Canada, Natural Resource Canada, Natural Sciences and Engineering Research Council of Canada, Oceans Protection Plan, and Forestry, Lands and Natural Resource Operations
    - universities and other academic institutions and experts, including those listed above for training and those related to Indigenous economics at the University of British Columbia and Indigenous knowledge laws at the University of Victoria
    - non-governmental organizations and local activities, such as West Coast Environmental Law, Oceans Network Canada, Vancouver Aquarium, Raincoast Conservation Foundation, and the Pacific Salmon Foundation, West Coast Aquatic
    - local Indigenous businesses and consultancies serving Indigenous communities, such as LGL, Blue-Green Environmental Services, and Sources Archaeological & Heritage Research INc.
- Some participants already collaborate with one other, including in an offshore Pacific marine protected areas partnership and in the federal–provincial–Indigenous marine plan partnership (MaPP) for the North Pacific coast.
    - No one has worked with the Aboriginal Mapping Network, although one had the opportunity to do so.