Updating Data Inventories to Support Marine Planning and Response in Canada's Western Arctic

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UPDATING DATA INVENTORIES TO SUPPORT MARINE PLANNING AND RESPONSE IN CANADA'S WESTERN ARCTIC

by

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ACRONYMS

AERO – Arctic Emergency Response Operations

BSP – Beaufort Sea Partnership

CCG – Canadian Coast Guard

CHS – Canadian Hydrographic Service

DFO – Fisheries and Oceans Canada

ECCC – Environment and Climate Change Canada

EDH – Enterprise Data Hub

FDL – Foundational Data Layer

GIS – Geographic Information System

IFA – Inuvialuit Final Agreement

IMRP – Integrated Marine Response Planning

IOMP – Integrated Ocean Management Plan

ISR – Inuvialuit Settlement Region

ISRP – Inuvialuit Settlement Region Platform

LOMA – Large Ocean Management Area

MPA – Marine Protected Area

MPAN – Marine Protected Area Network

MPC – Marine Planning and Conservation

MSP – Marine Spatial Planning

NEEC – National Environmental Emergencies Centre

OGP – Open Government Portal

TLK – Traditional and Local Knowledge

ABSTRACT

Gagliardi, K., Forbes, T., Friesen, J., Friesen, M., Galley, R., Cassin, J., Michaleski, S., Lea, E.V. 2026. Updating Data Inventories to Support Marine Planning and Response in Canada's Western Arctic. Can. Tech. Rep. Fish. Aquat. Sci. 3763: vi + 26 p. https://doi.org/10.60825/4s36-0k66

The Integrated Oceans Management Plan (IOMP) for the Beaufort Sea outlines goals related to governance, ecosystem integrity, cultural and socio-economic values, and the use of Traditional and Local Knowledge and science to support informed decision-making in the Beaufort Sea Large Ocean Management Area in Canada's Western Arctic. To support IOMP goals related to knowledge-based decision-making, Fisheries and Oceans Canada (DFO) Science and Marine Planning and Conservation collaborated to update data inventories relevant to marine planning and response in the Inuvialuit Settlement Region, primarily focusing on mobilizing datasets from DFO and publicly available sources. The inventory update involved three steps: reviewing existing datasets on the Inuvialuit Settlement Region Platform (ISRP), identifying additional datasets independently, and incorporating further datasets with support from DFO Science. An internal workshop was held to validate the inventory, identify additional datasets and sources, and discuss opportunities for improved data sharing. In total, 356 unique datasets were compiled: 187 from the ISRP, 147 from public sources, and 22 from the workshop. Continued engagement across DFO programs will be essential to improve data transparency, reduce redundancy, and support long-term accessibility through systems such as the ISRP and the Open Government Portal.

RÉSUMÉ

Gagliardi, K., Forbes, T., Friesen, J., Friesen, M., Galley, R., Cassin, J., Michaleski, S., Lea, E.V. 2026. Updating Data Inventories to Support Marine Planning and Response in Canada's Western Arctic. Can. Tech. Rep. Fish. Aquat. Sci. 3763: vi + 26 p.
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Le Plan de gestion intégrée des océans (PGIO) pour la mer de Beaufort énonce des objectifs relatifs à la gouvernance, à l'intégrité des écosystèmes, aux valeurs culturelles et socioéconomiques, ainsi qu'à l'utilisation des connaissances traditionnelles et locales et de la science afin d'appuyer une prise de décisions éclairée dans la zone étendue de gestion des océans de la mer de Beaufort, dans l'ouest de l'Arctique canadien. Afin d'appuyer les objectifs du PGIO liés à la prise de décisions fondée sur les connaissances, la Direction des sciences et le programme Planification et conservation marines de Pêches et Océans Canada (MPO) ont collaboré pour mettre à jour les inventaires de données pertinents pour la planification et les interventions marines dans la région désignée des Inuvialuit, en mettant principalement l'accent sur la mobilisation d'ensembles de données provenant du MPO et de sources accessibles au public. La mise à jour de l'inventaire comportait trois étapes : l'examen des ensembles de données existants sur la Plateforme de la région désignée des Inuvialuit (PRDI), le repérage d'ensembles de données supplémentaires de façon indépendante, et l'intégration d'autres ensembles de données avec l'appui de la Direction des sciences du MPO. Un atelier interne a été organisé pour valider l'inventaire, pour recenser des ensembles de données et des sources supplémentaires, et pour discuter des possibilités d'améliorer l'échange des données. Au total, 356 ensembles de données uniques ont été compilés : 187 provenant de la PRDI, 147 de sources publiques et 22 résultant de l'atelier. La poursuite de la mobilisation des divers programmes du MPO sera essentielle pour améliorer la transparence des données, réduire la redondance et soutenir l'accessibilité à long terme au moyen de systèmes tels que la PRDI et le Portail du gouvernement ouvert.

INTRODUCTION

The Beaufort Sea Large Ocean Management Area (LOMA) encompasses the marine portion of the Inuvialuit Settlement Region (ISR) in Canada's Western Arctic (Figure 1). This region is governed by the Inuvialuit Final Agreement (IFA) (Government of Canada 2005) and is home to biologically diverse marine ecosystems, culturally significant areas, and communities that rely on the ocean for food, livelihoods, and identity (BSP 2009). In recognition of its ecological and cultural importance, the Government of Canada designated the Beaufort Sea LOMA as one of five priority areas for integrated ocean management planning in 2006.

Figure 1. Map of the Inuvialuit Settlement Region (ISR) and its communities, the Beaufort Sea Large Ocean Management Area (LOMA), and designated Marine Protected Areas (MPAs).

Integrated oceans management in Canada is a collaborative and comprehensive approach to planning and managing human activities in marine environments. The Integrated Ocean Management Plan (IOMP) for the Beaufort Sea (BSP 2009) was developed collaboratively by federal, territorial, and Indigenous partners. The goals of the IOMP are guided by six overarching themes: governance, economic, cultural, social, Traditional and Local Knowledge (TLK)[1], and ecosystem integrity, all of which collectively aim to balance conservation with responsible development. The IOMP is grounded in guiding principles such as inclusive and transparent decision-making and a commitment to knowledge-based approaches that draw on both TLK and science. DFO has undertaken many efforts to mobilize datasets in support of IOMP objectives, including but not limited to, the establishment of the Marine Spatial Planning (MSP) program, Integrated Marine Response Planning (IMRP), and the Open Data initiatives.

Data mobilization efforts (i.e., improving how datasets are documented, organized, and made accessible) help advance IOMP goals such as the identification of ecologically and culturally significant areas, assessment of risks, and guidance of sustainable marine use. MSP is an internationally recognized, collaborative public process for analysing and planning the spatial and temporal distribution of human activities in marine areas by integrating ecological, economic, social, and cultural considerations to support integrated and sustainable ocean management (UNESCO-IOC/European Commission 2021, DFO 2024a). Nationally, MSP is one of the tools that has been used to advance integrated oceans management, and within the Beaufort Sea LOMA, the IOMP identified spatial planning as a tool to promote effective decision-making in response to regional pressures, including considerations related to increasing marine traffic. DFO IMRP complements this work by coordinating DFO's scientific and technical input on marine spill preparedness and response, while DFO's Data Management team further supports these activities by improving the documentation, organization, and accessibility of datasets, enabling co-management partners to draw on well-documented and up-to-date information in regional planning and emergency response.

The need for well-organized and accessible data is becoming increasingly important as environmental change and growing vessel presence continue to reshape conditions across Canada's Arctic (Niemi et al. 2019, Galley et al. 2023, DFO 2025). Reduced summer sea ice extent, improved vessel technology, and the ISR's position at the western entrance of the Northwest Passage have made the Beaufort Sea and Amundsen Gulf increasingly accessible, leading to more vessel traffic and associated risks (Inuvialuit Regional Corporation 2020, van Luijk et al. 2022). While increases in marine traffic may be necessary to support new economic opportunities, it also heightens the potential for maritime emergencies and can raise concerns about impacts to wildlife, harvesters, and communities (Inuvialuit Regional Corporation 2020). These evolving pressures highlight the need to support co-managers with timely, relevant information and practical tools to guide marine planning and emergency response (BSP 2009, Arctic Council 2021, DFO 2025). Balancing conservation priorities and economic goals requires a coordinated approach to collect, document, and apply both scientific research and TLK to help ensure that decision-making reflects a robust understanding of baseline ecological conditions, habitat use, and species occupancy in the event of marine incidents (Arctic Council 2021, DFO 2025).

To support these regional planning and response needs, DFO Arctic Region's Science and Marine Planning and Conservation (MPC) teams collaborated to update data inventories

[1]Traditional and Local Knowledge (TLK), also referred to as Indigenous knowledge, is the cumulative, place-based knowledge held by Inuvialuit and other local residents, developed through long-term experience, observation, and use of the land, water, and wildlife (BSP 2009).

relevant to marine planning and response within the ISR, focusing primarily on mobilizing data from DFO-led datasets and other publicly available sources. This report describes the methods used to identify and mobilize these datasets and provides an overview of the resulting inventory and outcomes of the process.

ADDITIONAL BACKGROUND

Additional context on the key DFO programs that guided the inventory process is provided below to clarify their distinct roles in mobilizing data applicable to marine waters of the ISR. While MSP, IMRP, and Data Management each have separate mandates and objectives, MSP engaged both programs during the timeframe of the work described in this report to minimize unnecessary redundancies through similar requests to data providers, thereby supporting a more streamlined approach to data acquisition.

Marine Spatial Planning

MSP in Canada involves multiple authorities with distinct mandates, including federal departments, provincial and territorial governments, Indigenous organizations, co-management groups, and stakeholder groups. DFO launched its national MSP program in Canada in 2018, producing departmental guidance documents to incorporate international MSP best practises and Canada's Ocean Strategy (DFO 2002) into regional planning initiatives. As outlined in DFO's national guidance, MSP does not replace existing legislative or regulatory authorities; rather, it relies on a whole-of-government approach in which each organization contributes according to their individual mandates (DFO 2024a). This guidance also emphasizes that MSP is not a strictly linear process, as planning activities may be revisited, adapted, or paused in response to regional priorities and partner direction (Appendix 1).

While the Western Arctic was not a part of this initial launch, spatial planning within the Beaufort Sea LOMA was already identified in 2008 as an IOMP objective to promote effective decision-making and collaboration among ocean partners. This objective led to the development of the Inuvialuit Settlement Region Platform (ISRP) (formerly known as the Beaufort Sea Online Platform) in 2013. Additional targeted funding for foundational MSP work in the Western Arctic was available 2021–2026, enabling a regionally focused set of activities aligned with integrated ocean management goals. Within this broader mandate, MSP-related work focused on updating spatial data inventories, as described in this report, to improve coordination, inform decision-making, and support long-term marine management in the ISR. These spatial inventories were developed with a focus on the marine environment in the ISR, with the intention of uploading to the ISRP to promote collaboration and coordination between partners who use the platform for management and decision-making.

The ISRP is an Esri ArcGIS (Geographic Information System) online-based geospatial platform that provides a secure environment for storing, visualizing, and analyzing spatial datasets contributed through scientific research and TLK. With hundreds of spatial datasets and dynamic connections to external platforms, the ISRP helps organize and provide access to information relevant to marine planning and response in the Western Arctic. Access is limited to specific account holders, who can upload and access their own datasets and choose whether to share each dataset broadly or restrict visibility to specific groups. While the ISRP contains a range of TLK and partner-held information, the identification and sharing of TLK follows its own community-driven processes, keeping data owners in control of what is shared.

Integrated Marine Response Planning

Integrated Marine Response Planning (IMRP) is an Oceans Protection Plan initiative led by the Canadian Coast Guard (CCG) and supported by Environment and Climate Change Canada (ECCC), DFO, Health Canada, and Transport Canada. The approach to the creation of Area Response Plans for the Arctic Region was designed to reflect the risks and conditions of particular geographic areas, incorporate marine scientific information to inform decision-making, and engage broadly with rights holders and stakeholders throughout both the planning process and dataset collation and development.

Within DFO, the Science sector contributes to the IMRP program in the Arctic Region by strengthening scientific capacity to ensure that environmental sensitivities in the Arctic marine and coastal environment are more clearly understood and described rapidly in the event of a marine spill. This work supports ecosystem protection by collating, creating, and otherwise improving the availability of Arctic marine data for the purpose of spill preparedness and response.

DFO Science is in the process of implementing the IMRP National DFO Science Plan in the Arctic Region and working toward the IMRP strategic goals of (i) science for preparedness and response, (ii) partnership and collaboration development, and (iii) strong governance and administration. To support these goals, DFO Science sector staff responsible for IMRP in the Arctic Region are prioritizing:

a) The purposeful engagement and co-creation of Arctic marine and coastal information with and for the people of the Arctic region;

b) The development of the Arctic Emergency Response Operations (AERO) geospatial portal, a query-able eGIS platform for creating, storage, and/or visualization spatial data layers, producing location-dependent environmental sensitivities upon request by the ECCC-National Environmental Emergencies Centre (NEEC), and supporting engagement with subject-matter-expert, rights holders, stakeholders, and data holders;

c) Data and knowledge dissemination through publications (technical and manuscript reports, peer-reviewed journal articles, and datasets) which enable information access and collaborations that inform widely on science in a publicly accessible way; and,

d) Inter-departmental service, to maintain good governance and administer the program as efficiently and as cost-effectively as possible from a whole-of-government perspective; using early and frequent sharing of datasets and tools with ECCC-NEEC and CCG-Marine Environmental Hazards and Response.

Within DFO, the IMRP Arctic program continues to integrate and align within the Science sector and with other DFO sectors to improve data access where possible.

Data Management

DFO's Data Management program plays a central role in supporting MSP, IMRP, and broader integrated oceans work by improving how datasets are documented, stored, and shared. The team's main objectives in this context are to (a) streamline the dataset publication process, (b) make data management as approachable as possible, and (c) to support the Directive on Open Government to enhance transparency and public access to government funded information.

The Data Management team provides support by preparing metadata, improving data practices, and guiding datasets through the publication process. A key tool in this process is the Enterprise Data Hub (EDH), DFO's newly launched internal dataset inventory, which became active in early 2025. While still being expanded, the EDH provides a standardized, department-wide

mechanism for registering metadata, uploading data resources, and improving internal data discoverability. As more programs add their datasets to the platform and adopt consistent metadata standards and program level tags (e.g., MSP, IMRP), the EDH will increasingly serve as a comprehensive reference point for identifying and tracking datasets relevant to marine planning and response.

Once datasets are cleaned and prepared (i.e., checked for completeness, standardized where needed, and reviewed through quality-assured/quality controlled (QA/QC) processes with complete metadata to meet uploading requirements), they can be published to the Open Government Portal (OGP), where they become publicly accessible in alignment with federal open data requirements. Publishing to the OGP supports transparency, enables tracking of dataset access and downloads, and provides a stable, citable location for long-term maintenance. For datasets that include TLK, principal investigators are responsible for working with Indigenous collaborators to determine what information can be shared and whether publication to the OGP is appropriate, ensuring data owners remain in control of what is made publicly accessible. Making datasets publicly accessible through the OGP also facilitates their incorporation into the ISRP, where spatial layers can be visualized and overlaid to inform evidence-based planning in the Western Arctic. For platforms such as the ISRP, linking spatial layers to their corresponding OGP records can help ensure that users access the most current version of a dataset while reducing duplication of effort across programs and enhancing alignment among platforms, enabling more consistent and effective use of spatial information across regional planning initiatives. The EDH provides a clear pathway for organizing, maintaining, and sharing datasets across DFO, while the OGP enables public access when appropriate and in alignment with federal open data requirements.

APPROACH

Given the breadth of available information, the effort to update data inventories drew on multiple sources and followed a multi-step approach, as outlined in Figure 2 and described in further detail below. These steps produced an internal inventory of datasets, separate from the ISRP, which provided an overview of what was available and helped identify which datasets could be mobilized further. This compilation process aligned with the evidence-based principle of MSP by systematically identifying, reviewing, and organizing datasets from multiple sources, including the ISRP, external platforms, and DFO programs. Because MSP relies on spatial information, the process focused on identifying spatial datasets relevant to marine planning (i.e., datasets that include a geographic component, such as mapped species, habitats, sampling locations, or areas of human use), which can also be used to inform marine response activities. These steps reflect elements of the ‘Gathering Information’ phase described in DFO’s national MSP guidance (DFO 2024a; Appendix 1), which emphasizes integrating information from diverse sources as an important activity in MSP. Strategies and marine planning frameworks developed in other regions were also considered for guidance, such as the Southern B.C. Marine Spatial Planning Framework (DFO 2024b) and the Pacific Region Science Workshop Report (Proudfoot et al. 2022).

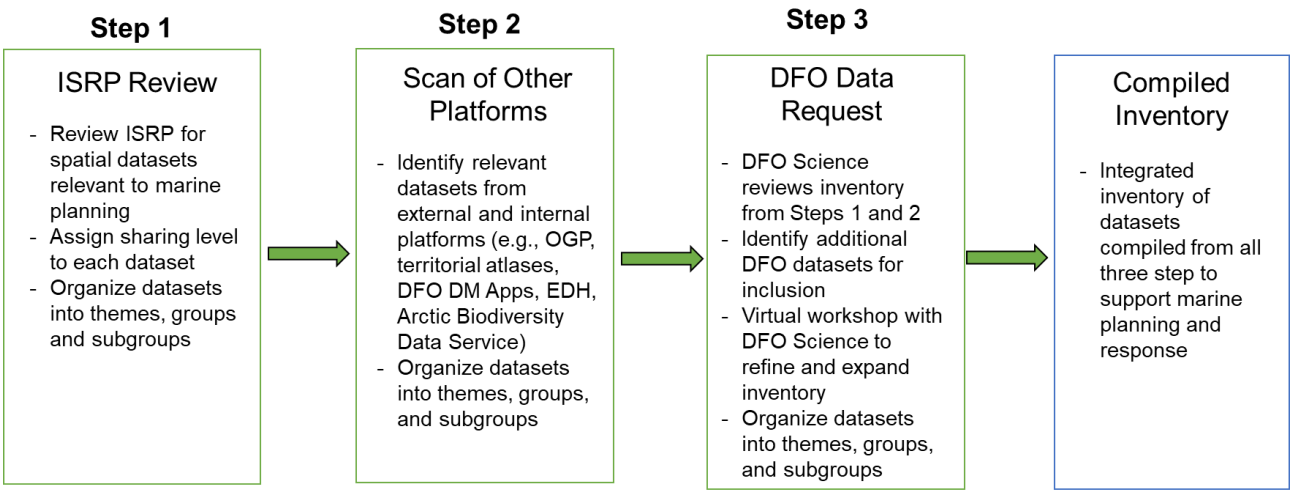

Figure 2. Flow chart summarizing the steps involved in updating the marine planning and response data inventory.

Inventory Compilation

Step 1: ISRP review of existing datasets

To establish a baseline understanding of the available data, the MSP team started with a comprehensive review of existing datasets that were housed on the ISRP and accessible to DFO. These data represent only a portion of the total data uploaded, as additional layers may be sensitive or contain TLK and are therefore not visible to DFO. A full inventory of the datasets accessible to DFO was compiled and then filtered to exclude records deemed irrelevant to marine planning. Terrestrial and freshwater datasets were generally excluded unless they demonstrated clear connectivity to marine environments or involved species that interact with coastal or sea ice areas. For example, datasets on toads and grizzly bears were excluded, while caribou data was retained due to its cultural significance and seasonal movements across sea ice.

All relevant datasets were compiled into a Microsoft Excel-based inventory file, with several standardized metadata columns. To organize the inventory by topic, each dataset was categorized using the Foundational Data Layer (FDL) framework, a three-tiered system consisting of themes (seven options), groups (17 options), and subgroups (49 options) (full list shown in Appendix 2). FDL themes and groups for this exercise were adapted from internal draft materials shared by DFO National Headquarters and the Pacific Region MSP South team to maintain consistency with broader departmental work. However, in some cases existing subgroups were not applicable to the ISR and for others, new subgroups were needed to capture ISR-specific data types. To account for this, the third breakdown into FDL subgroups was tailored specifically to datasets housed on the ISRP. The intent of this categorization was to provide a high-level summary of the inventory to support discussions with partners, rather than an exhaustive classification system.

While some datasets clearly aligned with a single category, others spanned multiple themes or groups. In these cases, each dataset was assigned to its best-fit category, recognizing that while this approach may have underrepresent secondary associations, it avoided double-counting. For example, several beluga datasets were categorized into ‘Local Socio-Cultural Traditional Knowledge’ instead of ‘Ecosystem and Ocean Knowledge’ since they were based on TLK.

Step 2: Scan of other platforms for additional datasets

The next step in this process focused on identifying additional datasets to supplement the ISRP. The team scanned various internal and external platforms to identify additional datasets relevant to Western Arctic marine planning and response, specifically the EDH and OGP, Government of Northwest Territories and Government of Yukon atlases, the Conservation of Arctic Flora and Fauna and Protection of the Arctic Marine Environment databases including the Arctic Biodiversity Data Service, and DFO's DM Apps Platform (Arctic Region and Ontario and Prairie Region). These platforms were selected because they are known to contain geographically relevant datasets for the Western Arctic and provided a focused starting point for narrowing the search. Metadata such as the geographic location, availability (e.g., public, limited access, or inaccessible), restrictions or permissions, data type (e.g., raw, research, coordinate, digitized, TLK, etc.), FDL category, and relevance for MSP and/or IMRP were recorded to guide future steps in data mobilization. Organizing the inventory in this way helped with determining which datasets could be posted directly to the ISRP and which would require further engagement with data owners. While it is recognized that no single scan can capture all available data, this step provided a starting point for adding and consolidating relevant datasets to the inventory in a structured way.

Step 3: Identification of additional DFO datasets

Once the inventory was compiled, DFO Science staff working in the marine waters of the ISR were asked to review the inventory created in Step 2 and identify additional relevant DFO-led datasets, including raw and processed datasets. As with earlier steps, the focus remained on datasets with a spatial component or clear geographic reference. Submissions were made via a Microsoft Excel template and focused on the dataset level rather than by project. Science staff were asked to identify further datasets that would help to:

- Characterize marine species, ecosystems, and ecological function;
- Outline key habitats and valued ecosystem components over time;
- Identify current sampling or monitoring efforts;
- Provide baseline ecological conditions or evidence of cumulative impacts; and/or,
- Reflect marine use patterns such as harvesting, fishing, or research activity.

To support this request, a virtual introductory session was held via Microsoft Teams on April 16, 2025 (agenda in Appendix 3) to describe the objectives of the inventory process and provide supporting materials. Participants were made aware that the process was intended to initiate follow-up discussions on data readiness, permissions, and potential for future sharing and publication. It was also acknowledged that some datasets may be co-owned with partners; therefore, additional approvals may be required before determining how data can be shared or posted.

Summary of Available Data Layers

Following each step of the data inventory process, summary tables and figures were produced using Microsoft Power BI to illustrate the number of datasets across FDL themes, groups, and subgroups to show how the coverage expanded between steps. These summaries provided a snapshot of the number of datasets per category, enabling comparisons across categories and highlighting areas of high or low concentration. While the summaries were useful for visualizing dataset representation across categories and identifying potential gaps, they do not reflect the depth, quality, or spatial resolution of the datasets as some areas may be well-studied but

underrepresented in spatial formats, while others may contain numerous datasets of varying relevance. In addition, a lack of representation in certain topics may not reflect a true absence of information. For example, some data fall outside DFO's mandate and/or are held by other organizations, while others were categorized under a single FDL subgroup to avoid double counting, even though they could apply to multiple categories.

Workshop

A virtual workshop titled *Updating Western Arctic Data Inventories* was held over Microsoft Teams on May 7, 2025 (agenda provided in Appendix 3). The session brought together 24 participants from DFO Science representing a range of expertise (Appendix 4). The workshop aimed to foster dialogue around the current availability and status of relevant datasets and sources as well as identify opportunities for improvements with data sharing. The key objectives of the workshop were:

- Identifying and sharing MSP/IMRP relevant datasets;
- Highlighting data gaps and prioritizing new data needs;
- Discussing opportunities and barriers for dataset sharing and platform publication; and,
- Clarifying how existing and new data can better identify threats and inform planning and decision-making.

To maximize participation and knowledge exchange, the workshop began with a plenary session to provide context and outline objectives. Participants were then divided into three thematic breakout groups: 1) marine and anadromous fishes; 2) marine mammals and ocean noise; and 3) physical and biological ocean environment (including oceanography, remote sensing, phytoplankton and zooplankton, benthic invertebrates, and habitat mapping/characterization). Each group was guided by four targeted questions:

1. What data do we currently have?
2. What other data are available?
3. What still needs to be done?
4. How can we support better data sharing?

Facilitators supported each breakout group to capture key insights and recommendations. The groups then reconvened to report back and discuss additional questions and potential overlapping points.

Data Mobilization

Following the inventory compilation and workshop, the MSP team reviewed all datasets to assess completeness, confirm readiness, secure appropriate permissions, and identify the most suitable sharing platforms (i.e., ISRP, IMRP, and/or OGP, summarized in Table 1). Datasets that were identified as being "almost ready" or "in progress", were flagged for developing metadata records and entering them into the EDH to ensure documentation and interoperability, publishing to OGP, and/or uploading to the ISRP where permissible. Although this process of updating data inventories required substantial effort to compile and access datasets from diverse sources, the approach is adaptable and could be repeated as new datasets become available. Future iterations may require refining the FDL categories or adjusting dataset assignments as the ISRP grows and program needs evolve. Ongoing improvements to EDH and OGP workflows and metadata standards will further support the ability to update the inventory in a more efficient and systematic way over time.

Table 1. Data requirements and posting steps for Western Arctic Marine Spatial Planning (MSP), Integrated Marine Response Planning (IMRP), and Data Management initiatives.

	MSP	**IMRP**	**Data Management**
Data platform	ISRP	Locally stored on AERO; access restricted to DFO response personnel	EDH (internal to DFO), then OGP if choosing to publish publicly
Data type	Spatial data focus	Spatial data important, but all types used to inform incident response	All data
Data format	Processed spatial data (ideally)	Any; best available data	Cleaned datasets with complete metadata, formatted for EDH (DFO internal inventory)
Publication requirements	Publication optional but preferred (at discretion of research lead)	Does not need to be published; stored in-house for response purposes and published to DFO eGIS using Group-sharing levels, with non-spatial information incorporated into spatial layers as appropriate	Published to public if posting on OGP; must be fully QA/QC'd with complete metadata
Permissions required	Password protected platform, dataset visibility and shareability controlled by data owners	Permissions are managed by the Arctic IMRP team through eGIS Groups	EDH inventory only accessible by DFO; OGP publicly available when publication is approved by data owner/co-owners

RESULTS

Inventory Compilation

A total of 356 spatial datasets relevant to marine planning and response in the Western Arctic were compiled through this three-step inventory compilation process (Figure 3). The ISRP review contributed the largest number of relevant datasets (187), followed by scans of other platforms (147). The DFO data request identified 29 datasets in total, 22 of which were spatial and included in the inventory, while the remaining non-spatial datasets were not included but still noted as potentially relevant for IMRP.

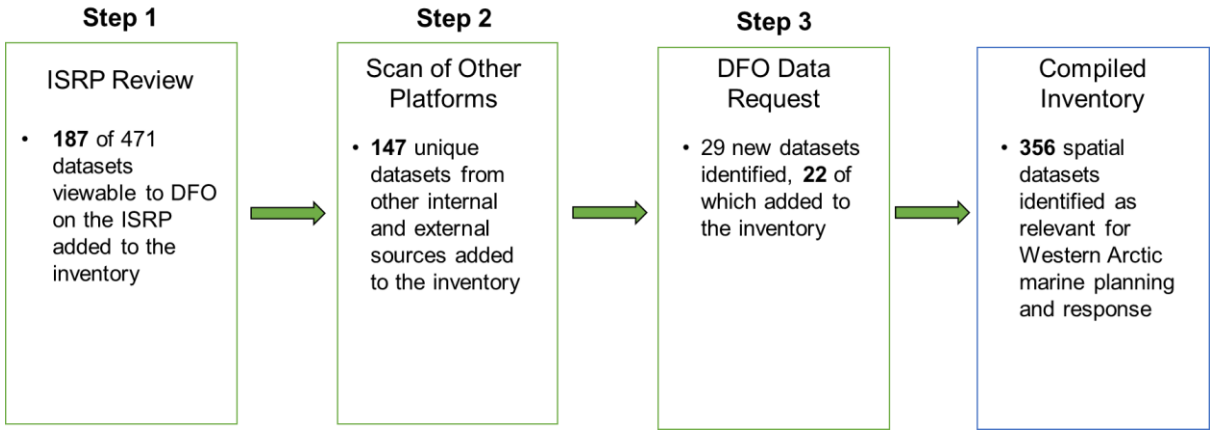

Figure 3. Summary of datasets added to the marine planning and response inventory through the Inuvialuit Settlement Region Platform (ISRP) review, scans of other platforms, and DFO data requests.

The distribution of datasets across FDL themes and compilation steps shows both overall coverage and areas where new additions were concentrated (Table 2). Of the 356 datasets added to the inventory, the 'Ecosystem and Ocean Knowledge' theme received the highest number of contributions (149), particularly through platform scans and the request to DFO staff facilitated via the workshop. 'Local Socio-Cultural Traditional Knowledge' was primarily sourced from the ISRP, reflecting the platform's strength in community-held data. Other themes such as 'Human Use', 'Synthesis Areas', and 'Boundaries and Management Areas' were represented across multiple steps, while 'Impact Assessment' remained sparsely populated.

Table 2. Breakdown of the datasets by Foundational Data Layer (FDL) theme identified in each step of the inventory compilation process.

FDL Theme	Step 1 (from ISRP review)	Step 2 (from other platforms)	Step 3 (from DFO (request)	Total number of datasets
Ecosystem and Ocean Knowledge	45	82	22	149
Local Socio-Cultural Traditional Knowledge	57	4	0	61
Human Use	35	17	0	52
Synthesis Areas	22	14	0	36
Boundaries and Management Areas	17	9	0	26
Ecosystem and Terrestrial Knowledge	9	16	0	25
Impact Assessment	2	5	0	7
Total number of datasets	187	147	22	**356**

Appendix 2 provides the dataset distribution by FDL theme, group, and subgroup after all steps of the inventory compilation process. While some groups appear poorly represented, this may be a reflection of lower coverage in those areas for datasets led by or accessible to DFO and/or the manner in which datasets were categorized into FDLs. Some datasets may also exist but have not yet been mobilized, may be held privately, or may be in progress through ongoing research. Subsequent contributions from the search from other platforms (Step 2) and DFO Science (Step 3) helped strengthen coverage in several areas, particularly within the 'Ecosystem and Ocean Knowledge' theme, which was anticipated given the expertise of participating science staff. Numerous datasets were identified for potential integration into the ISRP through this process. Spatial datasets were added to the inventory for mobilization, while

non-spatial datasets will be directed to IMRP and/or prepared for publication with the Data Management team if/when appropriate.

Figure 4 provides a detailed breakdown of dataset contributions from each step of the inventory process within the 'Ecosystem and Ocean Knowledge' theme, illustrating how subgroups such as marine mammals, fish, and birds were already well-represented and saw further enrichment through public data and workshop contributions. Other subgroups such as biotic monitoring, physical characteristics, and water quality had no prior representation within these FDL classifications on the ISRP (Step 1) but were strengthened through contributions from public data and workshop discussions.

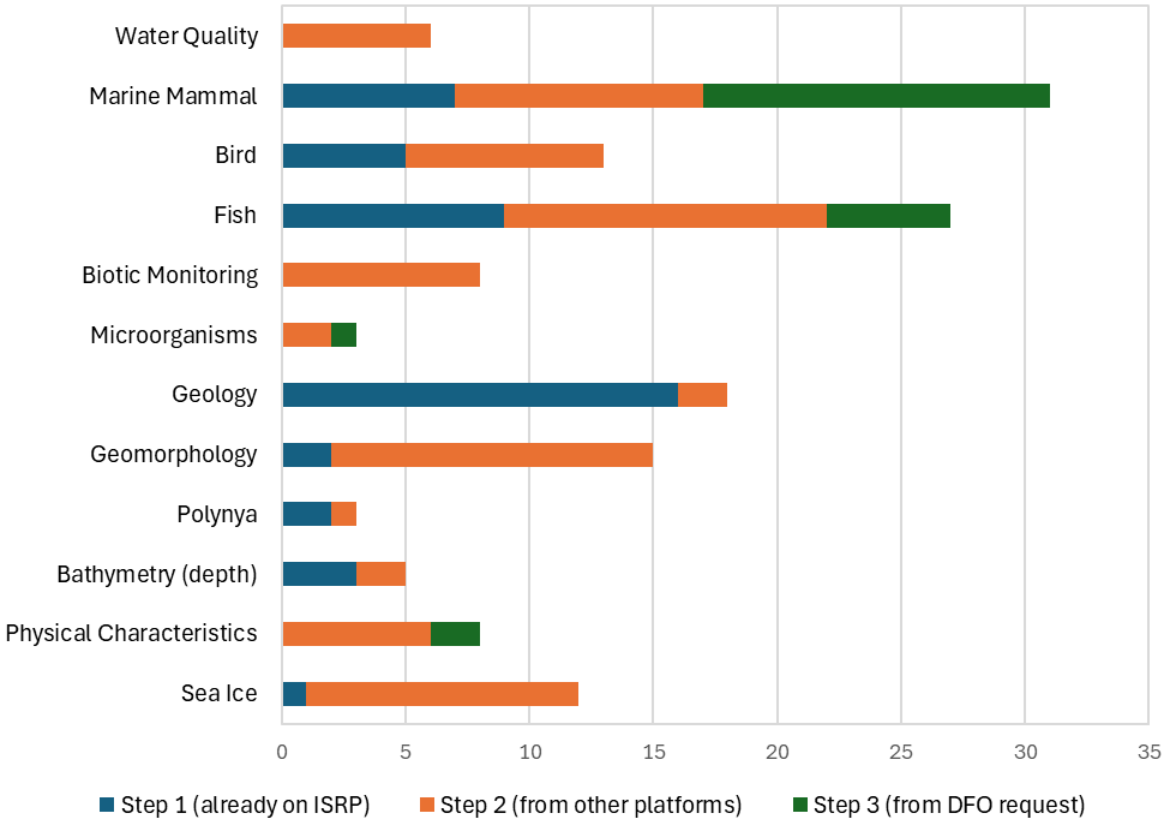

Figure 4. Number of datasets per subgroup within the 'Ecosystem and Ocean Knowledge' theme after each step of the inventory compilation process.

Despite the expanded search and contributions from DFO Science, several subgroups remained with little to no datasets after all three steps of the inventory process, including subgroups that are generally outside the core mandate of DFO Science such as ocean noise, shipping zones, and tourism (Appendix 2). This outcome was anticipated and may be more appropriately addressed through future data mobilization efforts led by or coordinated with other programs or partners.

Workshop

The workshop generated valuable insights across all breakout groups. Participants reviewed existing datasets, identified additional sources of relevant information, and discussed future research priorities in the context of advancing marine planning and response. It was

acknowledged that not all subject matter experts or co-management partners were represented at this workshop, and that future prioritization of research gaps will be contingent on management objectives which will need to be established with partners and dependant on available resources. Breakout group discussions are summarized in the following subsections, highlighting key themes, gaps, and recommendations identified by each group.

Summary of discussion topics

1. What data do we currently have?

Participants reviewed the pre-compiled dataset inventory and feedback was focused on the relevance, completeness, and accessibility of existing datasets, which came from both DFO and external sources. Dataset types ranged from raw, processed, digitized, and coordinate records to synthesized research outputs, reflecting varying levels of detail and usability.

For the marine mammals and fish breakout groups, most datasets were categorized under the 'Ecosystem and Ocean Knowledge' theme from both DFO and other external sources, with a smaller subset from the ISRP classified under the 'Local and Socio-Cultural Traditional Knowledge' theme. These records included species-level information on distribution, abundance, migration, and habitat use, with a mix of public, limited-access, and partner-held datasets. Data were collected from a variety of methods including aerial surveys, species observations, satellite tagging, harvest records, hydrophone locations, fishing cards, and catch-per-unit-effort metrics.

For the broader physical and biological ocean environment, datasets reflected a mix of ecological, hydrographic, and chemical data from both DFO and external sources. Most were categorized under the 'Ecosystem and Ocean Knowledge' theme, with some additional entries under 'Ecosystem and Terrestrial Knowledge' reflecting datasets with coastal or nearshore relevance. Within these themes, datasets included water quality and oceanographic records. Newly identified datasets from DFO were primarily associated with biotic monitoring and marine protected area data. Collection methods for these datasets were diverse and included bathymetric mapping, ocean floor geomorphology, water temperature and chemistry sampling (e.g., nitrogen levels), benthic invertebrate surveys, ecosystem monitoring programs, and remote sensing.

Workshop discussions raised important considerations regarding data completeness and usability. One observation was that there could be underrepresentation of biological datasets, given that several records grouped together data from multiple species or trophic levels (e.g., a single entry might include data for 50 species of zooplankton). The intent of simplifying datasets at the inventory-level for this process was to avoid excessive detail and streamline reporting, but this limitation was acknowledged as important to ensure that the potential scope of data behind each entry is understood by users and can be explored in more detail when needed.

2. What other data are available?

While the request and workshop were focused on DFO-led datasets, participants were also encouraged to identify other sources or broader platforms that could support MSP and IMRP efforts. These recommendations were recorded so they can be revisited as needed to assess relevance, accessibility, and potential pathways for future integration.

Table 3 summarizes sources that were brought up for further exploration and notes where preliminary scans had already been conducted. In some cases, data may be limited or require permission to share, highlighting the need for continued engagement with data owners and stewards.

Table 3. Summary of additional data sources recommended for further exploration to support marine planning and response.

Source	Description	Notes
Canadian Hydrographic Service	National provider of hydrographic and oceanographic data, including real-time water levels, tides, currents, and charting products.	Relevant for MSP/IMRP as real-time and near-real-time streams help track changing marine conditions, support navigation-related planning, and complement baseline datasets. Potential for future integration as northern coverage and data services expand.
Canadian Integrated Ocean Observing System	National ocean observing system providing access to oceanographic, coastal, and marine environmental data from federal, academic, and community partners.	Relevant for MSP/IMRP environmental baselines and monitoring with strong metadata standards and interoperability. Will be useful for future data integration pathways as it is expanding northern partnerships.
DFO Federal Science Library (formerly WAVES)	Repository for DFO publications, reports, and legacy data.	Useful for accessing older reports and data from former employees. Some tables have been converted to CSV format, though spatial data may be limited.
Northern Contaminants Program	National program that monitors long-range contaminants across the Arctic.	Not DFO-led but could be especially useful for IMRP in establishing a baseline of contaminant levels for Arctic sites pre-incident.
Open Government Portal (OGP)	Online platform hosting geospatial data from federal departments and agencies.	Some scanning had been done prior to the workshop, however the platform's size and structure make comprehensive review challenging.
Other MSP Atlases	Regional atlases developed in other planning areas (e.g., Pacific, Atlantic, Gulf of St. Lawrence).	May contain transferable datasets or frameworks that could inform Western Arctic planning.
Polar Data Catalogue	Centralized repository for Arctic research data, including environmental, social, and geospatial datasets.	Includes compiled datasets from ArcticNet, Crown-Indigenous Relations and Northern Affairs Canada, and other research programs.
Western Arctic Biogeographic Marine Protected Area Network (MPAN) data	Data compiled during the 2018 biogeographic analysis to inform MPAN planning (see Murray et al. 2026 for additional details)	A scan of publicly available data from this process had been done prior to the workshop but many findings were georeferenced from images or not publicly available and/or would need permission to upload onto the ISRP. Some sources may still be followed up with owners to seek permission to share.
World Ocean Database	International oceanographic data repository maintained by NOAA.	Can be used in species distribution modelling. Includes a mix of raw and potentially interpolated data, as well as CTD casts from various contributors. Covers broad oceanographic topics with diverse physical, chemical, and biological parameters.

3. *What still needs to be done?*

Participants raised the importance of reducing duplication across data platforms and simplifying the search process for end users. Several contributors recommended tagging datasets with MSP- or IMRP-relevant keywords to facilitate discovery in platforms like the EDH and OGP. It was also suggested that if DFO Science publishes datasets on the OGP, the MSP team should link directly to those records rather than re-uploading them to ISRP to improve efficiency. Many participants also inquired about clearer objectives to guide data mobilization efforts. While the initial request for this process was intentionally broad to capture a wide range of potentially relevant datasets, further specificity such as priority timeframes, geographic areas, or themes could help streamline future submissions and improve relevance. A limitation that was identified in the marine mammal breakout group was the seasonal bias in the ecological data availability. Many datasets reflect summer only sampling, which restricts their utility for year-round planning. Expanding to seasonal or year-round information could improve the spatial support available to MSP and IMRP efforts. Participants also emphasized a need to better understand how priority species interact with areas near coastal communities. These interactions are especially relevant for culturally significant species and subsistence harvesting and should be considered in future data mobilization and planning efforts.

4. *How can we support better data sharing?*

This discussion started by recognizing several common challenges that can hinder data sharing and mobilization, including insufficient time for QA/QC and metadata preparation, lack of incentive or uncertainty about how data will be used or recognized, concerns related to unpublished data (e.g., waiting to publish first, concerns about accuracy), shared ownership or permission issues for datasets, and data policies and restrictions. Participants were asked to reflect on these challenges, identify additional challenges, and provide recommendations for ways to better support data sharing. Several additional challenges and opportunities were raised during the discussion. One issue raised is the large size and volume of some datasets, which can make uploading to platforms difficult without technical support. In response to this concern and others expressed about data size limitations, file size for data associated with publications on the OGP have recently been increased to 20 GB. It remains a priority of the Data Management team to continue to work on these and other concerns surrounding data size, capacity, and storage needs. Participants were reminded that DFO's Data Management team is available to assist with formatting and sharing large files to improve accessibility.

Concerns around sharing raw data were also discussed. While different levels of preparation are required for different platforms (e.g., OGP requires cleaned datasets, ISRP is best suited for processed spatial data), it was noted that raw or minimally processed data remain important for analytical purposes such as long-term monitoring, climate trend analysis, and cumulative impact assessments. Sensitivities around co-authorship, data ownership, and permissions affecting how and when data can be shared were also raised as an important consideration, particularly for raw data generated through harvest monitoring programs and other co-managed initiatives involving community-based monitors, underscoring the need for clear agreements on how shared or co-produced data can be used, published, and attributed. Participants noted that uncertainties around who holds decision-making authority for data publication, how contributors should be recognized, and how evolving data policies of external partners may influence these decisions can complicate data sharing. More coordinated conversations among data partners to better understand expectations and to establish clear protocols would be helpful before advancing data sharing and potential publication. There are also nationally approved DFO Data Sharing Agreements and materials available as a component of DFO's recent data stewardship initiatives that are continuing to be refined, which may offer useful templates for supporting the secure sharing of unpublished or co-managed datasets.

A shared priority among participants was the development of mechanisms to monitor dataset updates and usage over time. Participants emphasized the importance of transparency, including the ability for contributors and communities to understand how their data are used. It was noted that while the ISRP is password-protected, its current configuration does not make it clear whether individual downloads can be tracked. However, the OGP does provide summary analytics, such as counts of dataset views, downloads, and metadata access for DFO-owned datasets, and metadata from technical reports can be incorporated into the EDH inventory to maintain clear records of data origins and use. In addition to supporting usage analytics, the OGP also improves transparency by making DFO-funded datasets accessible without a formal request process, ensuring that government-funded data is openly available to Canadians.

Concerns were also raised about long-term maintenance of data records, including the need for version control and researchers' ability to access their own data on a password-protected platform. It was noted that datasets can be published to the OGP first, with assistance from the Data Management team if needed, with ISRP entries linking back to those records to automatically update as the source record on the OGP is updated. Although the ISRP itself does not automatically refresh its internal content, linking ISRP records to external sources such as OGP dataset pages would help ensure that users always access the most current version of a dataset.

Group brainstorm and recommendations

Guided by the following questions during the final group portion of the workshop, participants discussed broader strategies to improve data coordination across programs:

- *How can we use multiple sources of information to inform on threats/marine planning exercises, recommendations for next steps?*
- *What other approaches can we use to bring available datasets together with the objective of informing marine planning and incident response?*
- *What has been done in other regions, what work is underway, any recommendations for the future that could inform MSP/IMRP?*
- *How can we work together to create spatial data products that would be more broadly useful to the multiple federal initiatives?*

Effective marine planning and incident response requires drawing on multiple sources of information to capture the complexity of Arctic ecosystems and threats to ecosystem health. Participants emphasized the importance of making datasets accessible and compatible for multiple planning and response purposes. In addition to datasets from DFO programs and external partners, real-time streams such as those provided by the Canadian Hydrographic Service (CHS) were highlighted as important for building a more complete picture of changing conditions. Integrating these diverse inputs not only strengthens situational awareness but also supports forward-looking analyses, including cumulative impact assessments and species distribution models, which can help anticipate emerging pressures.

Cumulative impact mapping offers one example of how multiple datasets can be synthesized to visualize where human activities and ecosystem vulnerabilities overlap, providing a flexible, spatially explicit tool that can support MSP (Murray et al. 2024). Recent work assessing climate-related vulnerability of Arctic fish species (Sora et al. 2025) further illustrates how sensitivity-based analyses can inform planning and adaptation efforts aimed at supporting ecosystem and community well-being in a changing Arctic. Although cumulative impact mapping was not a focus of workshop discussions, the emphasis on coordinated monitoring, harmonized indicators, and cross-program data integration suggests that similar approaches could be

adapted in the Western Arctic as data availability and regional coordination continue to advance.

Cross-initiative collaboration has been a key strategy for advancing MSP in DFO's Pacific Region. The 2022 Pacific Region Science Workshop brought together participants and data from eight federal programs including MSP, Marine Conservation Targets, the Whales Initiative, and the Coastal Environmental Baseline Program to compare spatial products, identify overlaps, and align deliverables (Proudfoot et al. 2022). Recommendations from their workshop emphasized metadata standardization, shared conceptual frameworks, and ongoing dialogue across programs to improve data interoperability. Several regions have also advanced MSP through the development of cumulative impact mapping products. Examples from the Pacific Region (e.g., Ban et al. 2010, Murray et al. 2015) and more recent national-scale work (Murray et al. 2024) demonstrate how coordinated workflows and standardized spatial layers can support prioritization and decision-making by highlighting areas of higher or lower cumulative pressure. These strategies could also be valuable for the Western Arctic, should the region pursue similar planning initiatives, with approaches adapted as appropriate to reflect regional ecological and cultural contexts.

Building strong partnerships across Arctic communities, programs, and agencies is also highly valuable for strengthening understanding of the physical and biological Arctic environment. For example, IMRP's collaboration with CCG, including the provision of GIS support, has highlighted the importance of specific Arctic areas for spill response. Community engagement mapping sessions allow local knowledge holders to identify areas of importance on paper maps, which are then georeferenced, digitized, and incorporated into the Arctic IMRP response database. This process significantly enhances spill response capacity in ways that reflect community priorities.

Participants also identified a need for consolidated, cross-program data products that could support ecosystem-level assessments and long-term planning. A potential database to help inform on marine areas of ecological or biological significance or similar effort could merge indicator-level data across programs. While these products may be better suited to strategic planning than operational response, they represent useful starting points for building more comprehensive spatial tools. A complementary approach for bringing available datasets together for MSP and IMRP is to adopt a structured workflow for integrating datasets across programs. As the EDH becomes more populated, it could serve as the foundational inventory for this system, with additional filtering, tagging, and user-based access controls layered on top. A centralized infrastructure could then provide controlled access to geospatial data, organize datasets by planning or response needs, and ensure that users across programs can find and use the information most relevant to their workflows. The main challenge is identifying end-users and designing a system that is genuinely useful across programs, while ensuring the infrastructure remains purposeful and aligned with clearly defined planning and response needs.

Data Mobilization

As part of advancing MSP-related goals, the inventory process expanded the number of datasets available to support planning and decision-making in the ISR. A total of 169 new datasets were identified as appropriate for upload to the ISRP:

- Publicly identified datasets: Of the 147 publicly identified datasets, 122 were successfully uploaded to the ISRP. The remaining 25 could not be uploaded due to issues such as duplication with datasets already in the inventory, incompatible file formats, or upload errors; however, they remain documented within DFO's internal inventory and could still support MSP analyses even if they are not available on the ISRP.

- Workshop-identified datasets: Of the 22 datasets identified during the DFO Science workshop, 10 have been uploaded to the ISRP to date. The remaining 12 are pending upload for reasons including duplication with publicly identified datasets, challenges with the current file format, or ongoing approval processes with partners for their permission in advance of proceeding with publication on the ISRP.
- Overall totals: 132 datasets, containing 168 individual spatial data layers, have been uploaded to the ISRP to date. The remaining 37 datasets were not uploaded for the reasons described above.

Several datasets identified through this process can also support the IMRP program and can be advanced through the EDH for preparation and publication on the OGP when appropriate, further enhancing transparency and improving access to information that supports marine planning and emergency response in the ISR.

DISCUSSION

Ensuring that datasets are available and usable by co-management partners is important for supporting all aspects of marine management in the Western Arctic, including planning, response, monitoring, and long-term stewardship. While the primary focus of this process was on identifying and mobilizing datasets held by DFO, there are many other sources of valuable and relevant information that exist across partner organizations, including TLK, community-led monitoring programs, and other external research.

Beyond the technical steps of compiling the inventory, this work aligns with ongoing efforts within DFO to improve data discoverability and interoperability, and strengthen shared accountability for data stewardship in alignment with the Government of Canada's Directive on Open Government, while also acknowledging the importance of data sovereignty and respectful knowledge sharing. As attention increases around the responsible use of TLK and data shared through collaborative programs, it remains important to balance federal directives on transparency requirements with the rights and priorities of Indigenous communities.

Improved accessibility and awareness of relevant datasets also aligns with a range of international, national, and regional commitments linked to ocean management, including global frameworks such as the United Nations Convention on Biological Diversity, the United Nations Declaration on the Rights of Indigenous Peoples, the 2030 Sustainable Development Goals, and the High Level Panel for a Sustainable Ocean Economy (UNESCO-IOC/European Commission 2021). At the national level, this exercise complements initiatives including the Blue Economy Strategy, Canada's Oceans Strategy, Marine Environmental Quality, ecosystem-based management, and efforts to meet Marine Conservation Targets (30% by 2030) (DFO 2024a), aligning with Target 1 of Canada's 2030 National Nature Strategy, which calls for participatory, biodiversity-inclusive spatial planning to help prevent further loss of ecologically important areas by 2030. At the regional scale, strengthened data availability directly supports IOMP goals related to coordinated, knowledge-based decision-making in the Beaufort Sea. Together, these improvements advance multiple mandates beyond MSP and IMRP, and reinforce broader goals related to conservation, governance, and inclusive decision-making.

As data mobilization grows, finding efficiencies in how diverse datasets are accessed, made searchable, and collaboratively managed will help minimize duplication and enhance coordination across platforms. With multiple data inventory and storage systems emerging across government programs, there are opportunities to streamline efforts, improve alignment, and ensure that data sovereignty remains a guiding principle. The inventory developed through this process contributes to these broader goals by consolidating datasets and improving visibility

of available information. There are still numerous resources and platforms within DFO and across external partners that can be further explored (e.g., real-time streams from the CHS or community-led monitoring programs) to strengthen accessibility, integration, and shared governance across the Western Arctic.

Experiences from other DFO regions also illustrate how early investments in organizing and mobilizing spatial information can support collaborative planning. In the Pacific Region, the Southern B.C. MSP framework emphasizes that effective marine planning depends not only on robust spatial datasets but also on clear roles and protocols for data stewardship, trusted working relationships, and shared understanding of required knowledge products (DFO 2024b). Knowledge products that have been developed in other regions include the Pacific and Atlantic Region Marine Planning Atlases which provide interactive, public platforms for exploring spatial datasets, and Regional Knowledge Action Plans (described in DFO 2024b) that illustrate how diverse datasets, community knowledge, and federal science have been integrated elsewhere to support planning discussions. These examples highlight potential pathways that could be explored in the Western Arctic if co-management partners choose to pursue future phases of marine planning.

While experiences from other regions offer useful insights, it is important to recognize the scope and limitations of the inventory developed for the Western Arctic. The inventory provides a useful characterization of spatial datasets currently accessible to DFO but does not fully represent all research and monitoring efforts in the region. Some research may have not yet been undertaken, while other work may be inaccessible, led by other organizations, or otherwise unavailable to DFO. Because management priorities have not yet been identified for the Western Arctic, the relevance of any dataset will depend on future partner-guided discussions. While this inventory does not constitute a gap analysis, it offers a foundation that could support such an exercise in the future should co-management partners wish to assess information needs relative to specific management objectives. As such, this inventory should be viewed as a broad characterization of various data sources currently available to DFO and as a reflection of ongoing efforts to mobilize additional datasets within the region.

The findings from this process reinforce the importance of iterative and inclusive approaches to marine planning and response that combine federal datasets with community-held knowledge and regional expertise. This process has also helped demonstrate how collaborative platforms like the ISRP can provide data to support adaptive planning, transparent decision-making, and respectful knowledge integration. As marine planning efforts continue to evolve nationally, the lessons from the Western Arctic highlight the importance of adaptive data systems, shared governance, and ongoing support for improving data accessibility and interoperability.

Broader data management developments within DFO will support more efficient updates to this inventory in the future, regardless of how program structures may evolve. As the EDH becomes more fully populated across programs, it will serve as a key reference point for identifying and tracking information relevant to marine planning and emergency response. Refinements to metadata standards and OGP publication workflows, along with features such as program-level tagging (e.g., MSP, IMRP) and map-based search tools, will strengthen dataset discoverability and reduce the manual effort required for future updates. Linking ISRP records to their corresponding OGP entries, where appropriate, will also help to maintain version control and ensure that both records are updated simultaneously when the source record is modified. Together, these developments provide a stable foundation for maintaining and mobilizing spatial information in the ISR, supporting MSP, IMRP, and any future initiatives that rely on well documented and accessible datasets.

Ongoing engagement across DFO programs and with co-management partners will remain essential to improving data transparency, reducing redundancies, and supporting long-term accessibility through systems such as the ISRP and the OGP. Continued exploration of opportunities to integrate additional datasets from internal teams, external partners, community-led monitoring programs, and other sources will further strengthen the ISR inventory and enhance its value for marine planning and response. Although notable advancements were made through this process, updating inventories will remain an ongoing effort with no fixed endpoint.

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APPENDIX 1. NATIONAL GUIDANCE FOR PHASES OF MARINE SPATIAL PLANNING IN CANADA

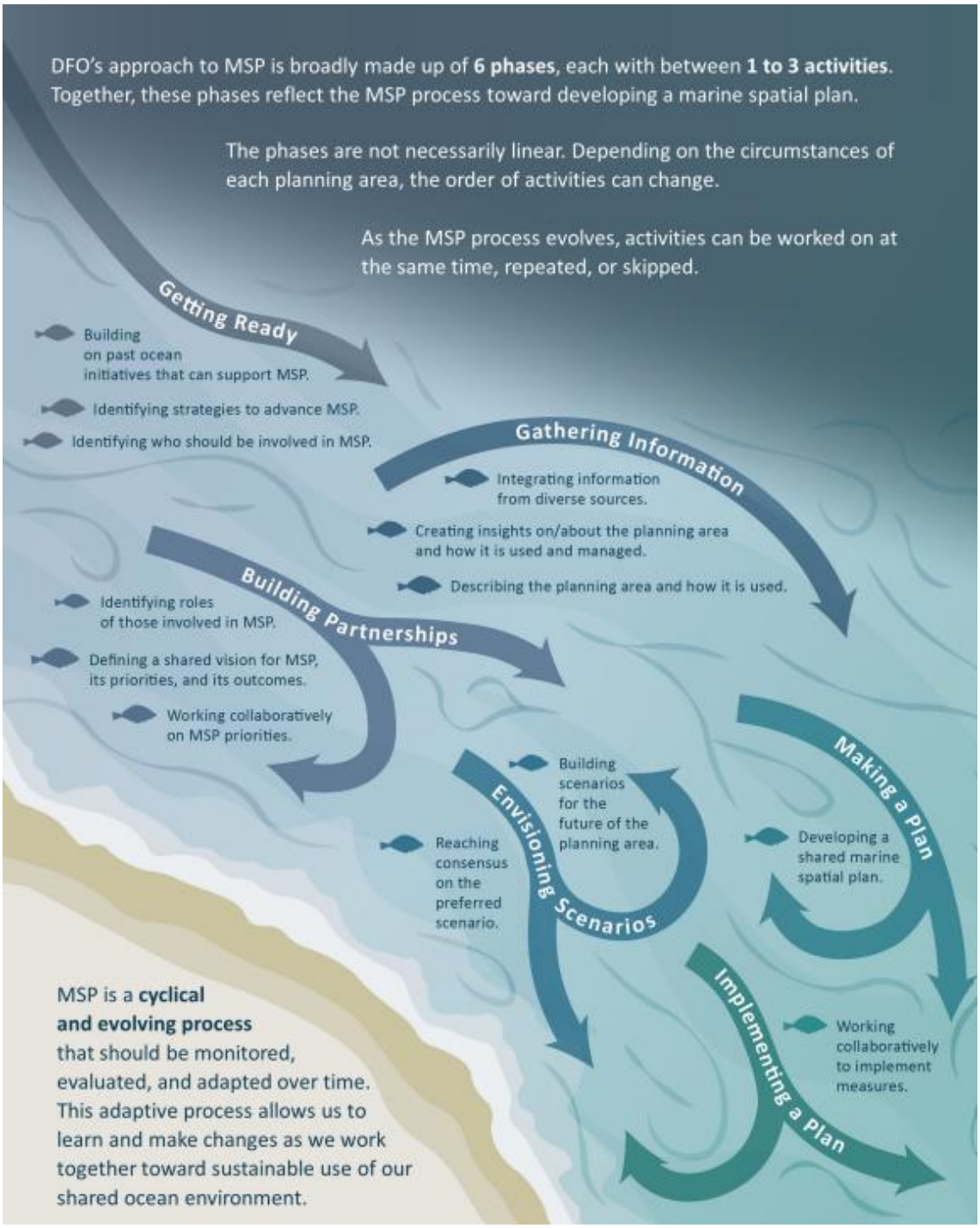

Figure A1. DFO National guidance for general phases of Marine Spatial Planning (MSP) in Canada. Reproduced from DFO (2024a).

APPENDIX 2. INVENTORY SUMMARY

Table A1. Summary of datasets added to the marine planning inventory by Foundational Data Layer (FDL) Theme, Group, and Subgroup during each step of the compilation process (ISRP review, scans of other platforms, and DFO data requests). The total number of datasets reflects the combined contributions from all three steps, highlighting overall additions to each theme and the resulting overall inventory coverage.

FDL Theme	FDL Group	FDL Subgroup	Step 1 (already on ISRP)	Step 2 (from other platforms)	Step 3 (from DFO request)	Total # of datasets
Ecosystem and Ocean Knowledge	Chemical	Water Quality	0	6	0	6
	Marine Ecological	Marine Mammal	7	10	14	31
		Bird	5	8	0	13
		Fish	9	13	5	27
		Biotic Monitoring	0	8	0	8
		Microorganisms	0	2	1	3
	Geological	Geology	16	2	0	18
		Geomorphology	2	13	0	15
		Polynya	2	1	0	3
	Hydrography	Bathymetry (depth)	3	2	0	5
		Physical Characteristics	0	6	2	8
		Sea Ice	1	11	0	12
Boundaries and Management	Governance	Land Claim Boundaries	3	1	0	4
		Inuvialuit Private Lands	9	0	0	9
		Municipal Boundaries	0	0	0	0
		Territorial Boundaries	2	2	0	4
		Other Ocean Management Areas	0	0	0	0
	Ecological Areas	Ecoboundaries	3	6	0	9
Human Use	Terrestrial Infrastructure	Community Infrastructure	6	2	0	8
		Parks Canada Infrastructure	3	0	0	3
	Shipping	Traffic	5	2	0	7
		Navigational Aids	7	1	0	8
		Zones	0	0	0	0
	Resource Extraction	Mineral/Mining	6	3	0	9
		Oil and Gas	8	7	0	15
	Tourism	Tourism	0	2	0	2
Impact Assessment	Cumulative Impacts	Natural Event	2	3	0	5
	Ocean Noise	-	0	0	0	0
	Environmental Response	Contamination Monitoring	0	2	0	2

FDL Theme	FDL Group	FDL Subgroup	Step 1 (already on ISRP)	Step 2 (from other platforms)	Step 3 (from DFO request)	Total # of datasets
Ecosystem and Terrestrial Knowledge	Ecological	Terrestrial Monitoring	5	0	0	5
		Terrestrial Mammal	4	3	0	7
	Physical	Erosion/Coastal Features	0	2	0	2
		Weather/Climate	0	4	0	4
		Permafrost/Glacier	0	7	0	7
Local and Socio-Cultural Traditional Knowledge	Socio-Cultural	Cabins	4	0	0	4
		Culturally Significant Areas	10	4	0	14
		Place Names	1	0	0	1
		Harvest	2	0	0	2
	Ecological	Species Activity	14	0	0	14
		Marine Mammal	9	0	0	9
		Fish	12	0	0	12
		Terrestrial Mammal	5	0	0	5
Synthesis Areas	Ecologically and Biologically Significant Areas	Significant Ecological Area	11	13	0	24
	Protected and Conserved Areas	Marine Protected Areas	4	0	0	4
		Migratory Bird Sanctuaries	1	0	0	1
		National and Territorial Parks	2	0	0	2
		Traditional Conservation Area	1	0	0	1
		Canadian Landmark	1	0	0	1
		Combined Protected Areas	2	1	0	3

APPENDIX 3. MEETING AGENDAS

Introductory Session April 16, 2025 (30 minutes)

- Welcome, introductions
- Process objectives
- Scope
- Steps and timelines
- Background on MSP/IMRP/Data Management
- Overview of existing inventory
- Overview of request to update Western Arctic data inventories

Workshop Agenda May 7, 2025 (2 hours)

- Introduction, overview, and outcomes of request
- Discuss limitations, how we can help address them, and provide additional guidance on relevant data
- Concurrent breakout groups to discuss: What data do we have? What else is available? What still needs to be done? How can we help?
- Reconvene and report back
- Bringing it all together to inform on threats and marine planning
- Overview of next steps, questions

APPENDIX 4. SCIENCE WORKSHOP PARTICIPANTS

Name	DFO Program	Assigned Breakout Group
Cassin, Jennifer	Science	Fish
Christie, Laurissa	Science	Fish
Dunmall, Karen	Science	Fish
Elliott, Robert	Fisheries Management	Physical and Biological Ocean Environment
Forbes, Tess	Marine Planning and Conservation	Fish
Friesen, Jarrett	Marine Planning and Conservation	Physical and Biological Ocean Environment
Friesen, Matthew	Science	Fish
Gagliardi, Kayla	Science	Marine Mammals
Gallagher, Colin	Science	Fish
Gilhuly, Ian	Science	Physical and Biological Ocean Environment
Howland, Kimberly	Science	Physical and Biological Ocean Environment
Lea, Ellen	Science	All – Facilitated main session
MacPhee, Shannon	Science	Marine Mammals
Marcoux, Marianne	Science	Marine Mammals
Michaleski, Sonya	Science	Marine Mammals
Murray, Laura	Science	Marine Mammals
Niemi, Andrea	Science	Physical and Biological Ocean Environment
Ouellette, Mark	Science	Fish
Sawatzky, Chantelle	Science	Fish
Scharffenberg, Kevin	Science	Marine Mammals
Stow, Jason	Science	Physical and Biological Ocean Environment
Sudlovenick, Enooyaq	Science	Marine Mammals
Westphal, Ashleigh	Science	Marine Mammals
Williams, Bill	Science	Physical and Biological Ocean Environment