Empowering Indigenous Communities Through Data Sovereignty

Workshop #3 Summary

Date: 25-26 March 2025
Location: Tigh-Na-Mara and Zoom

Facilitated by: Peter Evans and Beth Keats, Trailmark Systems

Hosted by: Nick Chowdhury, Island Marine Aquatic Working Group (IMAWG)

Attended and co-presented with: Lee Croft and David Collister, Fisheries and Oceans Canada (DFO), Sonora Morin, Nick Chowdhury, IMAWG and Jordan Bromley, Q'ul-lhanumutsun Aquatic Resources Society (QARS)

Executive Summary: Toward Operationalizing Indigenous Data Sovereignty

The third and final workshop in the Indigenous Data Sovereignty (IDS) series, co-hosted by Island Marine Aquatic Working Group (IMAWG), Q'ul-lhanumutsun Aquatic Resources Society (QARS), and Fisheries and Oceans Canada (DFO), was held over two days to advance the practical application of Indigenous data governance principles. Building on the foundational concepts and community priorities identified in earlier sessions, this workshop focused on mechanisms of accountability, levels of data sensitivity, and context-specific governance responsibilities across the data lifecycle.

The event brought together Indigenous community representatives, fisheries organizations, and government partners to explore how Indigenous data sovereignty—rooted in the principles of OCAP®, CARE, and UNDRIP—can be operationalized through tools, shared frameworks, and culturally informed practices. Presentations from the Treasury Board of Canada Secretariat and guest speakers provided insight into national policy contexts, artificial intelligence, and cross-jurisdictional challenges.

Two key participatory activities structured the workshop:

Activity 1: *Accountability in Action*, where participants used real-world scenarios to explore culturally appropriate responses to data misuse and breach of trust.

Activity 2: *Mapping Data Sensitivity and Rights*, in which groups collaboratively classified fisheries-related data types by sensitivity, ownership, access, and accountability needs using a color-coded matrix.

The results highlighted strong consensus around the protection of cultural knowledge and oral histories, alongside more varied perspectives on co-developed datasets and technical information. Participants emphasized the need for clear access protocols, community-led decision-making, and respectful data-sharing practices with external partners.

Key recommendations emerging from this session include compiling existing resources or tools into a practical guidance package, clarifying how outcomes may be shared across agencies, and supporting continued capacity-building at the community level. This final workshop reinforced the importance of relationship-based governance, flexibility in

applying principles, and community-defined approaches to achieving data sovereignty in fisheries and marine governance contexts.

Background

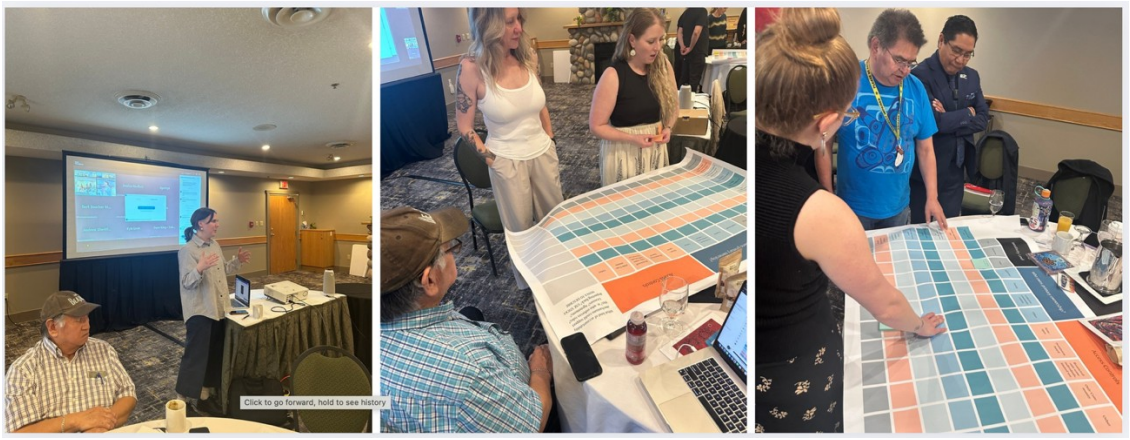
To support self-determination and self-government, Indigenous Peoples must own and control their data and information. This can be achieved through the assertion of Indigenous Data Sovereignty. Guidance materials for the practical application of Indigenous Data Sovereignty are needed to ensure that the theoretical aspects of data sovereignty such as the First Nations Principles of Ownership, Control, Access and Possession (OCAP) and The Global Indigenous Data Alliance (GIDA), Collective Benefit, Authority to Control, Responsibility and Ethics (CARE) Principles for Indigenous Data Governance can be operationalized. These materials will help communities achieve their data sovereignty goals and assist Fisheries and Oceans Canada (DFO) in fulfilling its responsibilities to respect and support those goals.

To address this need, the Island Marine Aquatic Working Group Society (IMAWG), the Q'ul-lhanumutsun Aquatic Resources Society (QARS), and DFO conducted a series of three collaborative workshops with Indigenous communities and Indigenous fisheries organizations focused on discussing and co-developing guidance materials for Indigenous Data Sovereignty. This report presents the findings from the third workshop.

Workshop Goals:

- Explore real-world processes and practical steps that ensure accountability when managing and sharing Indigenous data.
- Identify roles, responsibilities, challenges, and solutions across various stakeholder or rights holder groups (e.g., community members, Indigenous leadership, government agencies, researchers, etc.).
- Help participants gain awareness and differentiate among various types of data (e.g., fisheries data, Traditional Knowledge, personal information, community-held Intellectual Property (IP), etc.).
- Examine levels of sensitivity and associated governance requirements (e.g., restricted access, need for informed consent, community oversight).
- Explore intellectual property and data stewardship and ownership concepts from both Indigenous and Western legal perspectives, identifying where tensions or gaps might

arise.



Workshop Overview & Methods

The workshop was designed to encourage participants to share their insights and experiences with the challenges and issues related to Indigenous Data Sovereignty and begin to identify potential solutions in relation to their community's fisheries organization.

The third workshop in the Indigenous Data Sovereignty (IDS) series brought together representatives from First Nations, IMAWG, QARS, and DFO to co-develop practical approaches for respecting Indigenous data rights in fisheries and marine governance. This workshop emphasized hands-on activities that explored accountability mechanisms, data sensitivity classification, and rights-based data governance.

Throughout the two days, workshop participants were invited to share experiences, identify real examples, and brainstorm solutions to challenges relating to the topics presented through a plenary discussion with all participants and in structured activities in break-out groups. We chose these techniques to have the benefit of allowing participants to relate and hear from one another's experiences, as well as apply solution-oriented focus on specific issues in a comfortable setting. To ensure that we were validating and building off what we heard in Workshop #1 and #2, we used the issues and challenges identified by participants in Workshop #1 as examples to discuss and identify possible recommendations in the focus group activities. Additionally, the recommendations from Workshop #2 became the themes for Workshop #3.

Participants engaged in two structured group activities: *Accountability in Action* and *Mapping Data Sensitivity & Rights*. These exercises encouraged role-play, consensus-building, and practical thinking about Indigenous control over data collected and used in fisheries and environmental contexts.

During both engagement activities, note takers created digital sticky notes on MIRO reflecting the themes of the discussions, enabling online participants to follow along and engage with the ongoing conversations, and for those in person to watch and track ideas shared. Summaries of both these discussions are provided in the section *Workshop Results Summary* below.

Introduction and Presentations

Title**: Indigenous Data and Knowledge Sovereignty Collaboration: Framing and Facilitation**

Presented by: **Peter Evans and Beth Keats (Trailmark Systems), with Nick Chowdhury (IMAWG)**

The opening presentation for Workshop #3 set the tone for the two-day session, reinforcing the broader context of the Indigenous Data and Knowledge Sovereignty Collaboration. Delivered by Trailmark Systems in partnership with IMAWG President Nick Chowdhury, the presentation established the workshop's purpose: to build on foundations laid in Workshops 1 and 2 and move toward more practical guidance on implementing Indigenous Data Sovereignty. Key goals included understanding Indigenous experiences with data within fisheries and DFO contexts, identifying roles and responsibilities related to accountability, and exploring frameworks for categorizing and safeguarding sensitive data.

The facilitators revisited the collaboration's founding principles, which include co-developing guidance materials to support Indigenous control, protection, and use of data and knowledge. Participants were reminded of Shared Priorities 30 and 40 in Canada's UNDA Action Plan, which commit the federal government to enabling Indigenous-led data strategies and incorporating Indigenous Knowledge into fisheries and marine governance. Slides outlined definitions of sovereignty, data governance, and Indigenous Data Sovereignty, stressing the importance of centering Indigenous legal and ethical orders in all governance frameworks.

A significant portion of the presentation was devoted to clarifying the OCAP® and CARE principles. These were presented not just as abstract guidelines but as operating tools for asserting control, ensuring access, enforcing consent, and promoting relational

responsibilities across the data lifecycle. The facilitators emphasized how principles like "Authority to Control" and "Responsibility" require active, ongoing communication and transparency. This framing helped ground the later workshop activities, which would involve scenario analysis and governance design.

The presentation also included prompts and reflective exercises designed to create shared understanding. Participants were invited to describe the "bundle of data" they personally or professionally carry, connecting emotional, cultural, and ecological dimensions of data to the more technical concepts being discussed. Icebreaker tools, Slido polls, and Indigenous language greetings helped foster a welcoming, dialogic environment. Finally, the agenda overview and activity instructions prepared participants for meaningful engagement in the upcoming sessions, ensuring that accountability and cultural context remained front and center throughout the workshop.

Title**: 2025 Review of the Access to Information Act and Indigenous Data Sovereignty**

Presented by: **Treasury Board of Canada Secretariat (TBS)**

The Treasury Board of Canada Secretariat (TBS) delivered a presentation outlining its current work to align the Access to Information Act (ATIA) with Indigenous Data Sovereignty principles in advance of the Act's 2025 legislative review. TBS emphasized that this initiative stems from Canada's legal obligations under Section 93(1) of the ATIA (mandating review every five years) and Section 5 of the United Nations Declaration on the Rights of Indigenous Peoples Act (UNDA), which requires all Canadian laws to align with the UN Declaration. The presentation situated this work within the 2023–2028 UNDA Action Plan—specifically Shared Priority 30—which mandates streamlined, privacy-respecting access to federal information by Indigenous partners through nation-to-nation, Inuit-Crown, and government-to-government approaches.

Reflecting on the 2020 review of the ATIA, TBS acknowledged that Indigenous Peoples have encountered significant barriers in accessing federally held information critical to their rights and governance. These findings were captured in an Indigenous-specific "What We Heard" report and reinforced in the 2022 ATIA Review Report to Parliament. In response, TBS introduced guidance to reduce administrative barriers and promote culturally appropriate information services. With the 2025 review on the horizon, TBS has already begun engaging over 180 Indigenous organizations to validate whether its proposed focus

areas resonate with Indigenous priorities and to shape its legislative proposals through a distinctions-based approach.

The presentation proposed several potential reforms to support Indigenous Data Sovereignty. These include the creation of records disclosure agreements that would operate outside the existing request-based system and Information Commissioner oversight; legally mandated fee waivers for Indigenous requesters; and legislative amendments to strengthen the protection of Indigenous knowledge. TBS is also considering aligning the definition of "Aboriginal government" in the ATIA with terms used in other legislation (e.g., "Indigenous governing body" in the Fisheries and Impact Assessment Acts). The Secretariat concluded by inviting further feedback and participation from Indigenous partners as the engagement process continues throughout 2025.

Title: **Artificial Intelligence and Indigenous Data Sovereignty**

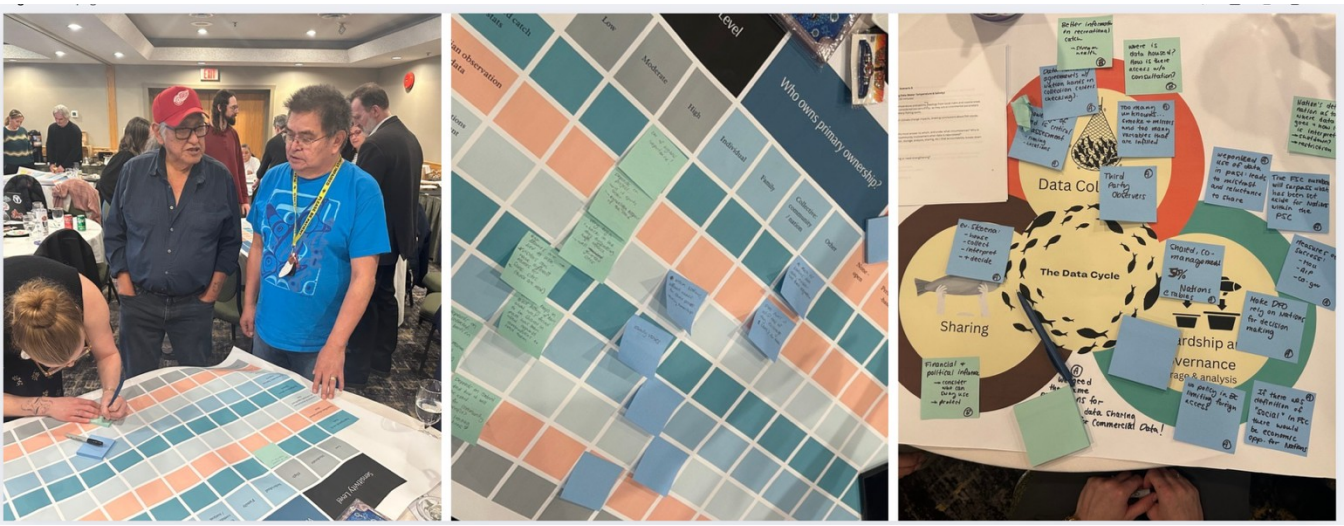
Presented by: **Lee Croft, Strategic Policy, Office of the Chief Data Steward, Fisheries and Oceans Canada (DFO)**

This presentation addressed the growing relevance of artificial intelligence (AI) in the context of Indigenous Data Sovereignty (IDS), outlining both the risks and opportunities posed by AI technologies. It began by contextualizing the proliferation of AI in daily life—from predictive and generative models to language processing and environmental monitoring—and emphasized that AI systems often retain, manipulate, and generate data in ways that pose particular concerns for Indigenous Peoples. These concerns include data misrepresentation, cultural misappropriation, loss of consent and control, and reinforcement of algorithmic biases. As Indigenous communities increasingly encounter AI in governance, service delivery, and environmental decision-making, the need for clear ethical boundaries and IDS-aligned safeguards was identified as urgent.

DFO's presentation acknowledged the dual nature of AI: while it can be used to support Indigenous governance, language revitalization, and stewardship through tools like automatic speech recognition or anomaly detection in ecosystems, it also risks violating OCAP® principles and perpetuating colonial patterns of data exploitation. The presentation highlighted pressing issues such as biased datasets, generative AI's misuse of Indigenous cultural imagery, and AI's capacity to re-identify individuals from de-identified datasets. DFO recognized that without explicit consultation and co-development, AI implementation risks further marginalizing Indigenous voices and priorities, particularly in areas like impact assessment and decision-making.

In response, DFO outlined its in-progress Data Ethics and Responsible AI Framework, which includes policy instruments, assessment tools, and guiding principles to govern AI across departmental operations. The Framework will include components specifically co-developed with Indigenous partners, recognizing the critical role IDS must play in shaping when, how, and whether AI tools can interact with Indigenous data and knowledge systems. The presentation concluded by urging proactive engagement and stressing that Indigenous governance of data must extend to emerging technologies such as AI—not after harm is done, but at the point of design and deployment.

Activities



Activity 1: Accountability in Action

"Accountability in Action" was designed as an interactive, scenario-based exercise to deepen participants' practical understanding of accountability in Indigenous Data Sovereignty contexts, particularly around fisheries and environmental monitoring data. The exercise focused explicitly on applying the OCAP® (Ownership, Control, Access, Possession) and CARE (Collective Benefit, Authority to Control, Responsibility, Ethics) principles.

Participants were presented with realistic scenarios illustrating common challenges related to accountability. For instance, one scenario involved a First Nation submitting catch reports to Fisheries and Oceans Canada (DFO) under assumptions of internal use only, which were later publicly disseminated without clear consent or acknowledgment. Another scenario featured environmental monitoring data (water temperature and salinity) collected

by a Nation but later utilized by external organizations without community consultation. A third scenario focused on data-sharing tensions within a consortium of multiple First Nations.

- **Scenario A: Fisheries Catch Data Misuse** A First Nation community submits weekly catch reports to DFO, expecting them to be used solely for internal fishery monitoring. Without informing the community, DFO publicly posts aggregated statistics and subsequently opens a fishery without consulting or considering the Nation's submitted data, raising serious concerns about consent, transparency, and decision-making authority.
- **Scenario B: Environmental Monitoring Data Reuse** A Nation's fisheries department collects basic environmental data (water temperature and salinity) intended for internal habitat monitoring. A regional NGO later uses this data to publish a climate change impact report without consulting the Nation, leading to concerns about misrepresentation and lack of contextual understanding.
- **Scenario C: Regional Data Consortium Breach** Several neighboring Nations form a data consortium to pool fisheries and ecosystem data. One Nation shares consortium data with an NGO for a conservation campaign without consulting the others, creating internal tensions and risking harm to collective negotiation strategies.

Participants engaged in small group discussions, assuming perspectives such as community research leads, Indigenous governance representatives, DFO managers, external consultants, and data analysts. Using printed infographic poster of the data lifecycle, groups systematically identified accountability gaps across the data lifecycle stages—collection, storage, analysis, sharing, and archiving. They also discussed the lack of clarity around governance responsibilities, oversight, and consent.

Each group proposed practical solutions, including governance committees, clear and enforceable data-sharing agreements, culturally informed metadata labeling systems, and regular audits to ensure compliance with agreed-upon terms. A plenary session allowed groups to share their insights, discuss the effectiveness of various mechanisms, and synthesize strategies for enhancing accountability, contributing directly to the development of robust community-based governance frameworks.

Key Themes:

- Absence of consent and clear agreements causes breakdowns in trust.
- High DFO staff turnover creates discontinuity in respecting existing data agreements.

- Structural racism and misalignment in values leads to misuse or sidelining of Indigenous data.

Participants called for:

- Data-sharing agreements that include consent protocols, breach response mechanisms, and expiry/renewal terms.
- Stronger roles for Indigenous data managers.
- Roundtables and joint governance models for decision-making.
- Culturally-grounded responses to breaches, including ceremony.

Activity 1 Results

Scenario A: Fisheries Catch Data Misuse

Participants emphasized the lack of data-sharing agreements, the high turnover at DFO leading to loss of institutional memory, and the urgent need for data-sharing protocols that mandate consent and specify governance over data lifecycle stages. They also discussed the challenges posed by third-party storage of Indigenous data and the tendency of federal agencies to commodify Indigenous data without honoring Indigenous governance protocols.

Scenario B: Environmental Monitoring Data Reuse

Participants highlighted that accountability failures often occur post-collection when there is no oversight or enforcement ensuring that data use aligns with original community intent. They stressed the necessity of data sensitivity classification, strong internal governance within DFO, and engagement protocols that prioritize Indigenous consent even for seemingly "low-sensitivity" environmental data.

Scenario C: Regional Data Consortium Breach

Discussions pointed to a critical need for internal accountability mechanisms among Indigenous partners themselves, including the use of confidentiality agreements, cultural protocols, ceremony in trust repair processes, and pre-defined breach responses. Participants stressed that collective data stewardship must include protocols for external sharing and breach response, and that breaches must be acknowledged openly with transparent remediation.

Across scenarios, participants emphasized structural power imbalances, particularly how systemic racism and colonial constructs continue to influence data governance practices. There was consensus that Nations must lead data governance through:

- Clear data-sharing agreements with detailed attribution, consent, and breach protocols.
- Independent data managers or data stewards.
- Enforcement mechanisms both within Indigenous organizations and external partners like DFO.
- Better metadata practices to ensure future data users understand original governance terms.
- Community engagement and intergenerational consent processes.

Participants proposed strong remedies, including requiring roundtables to review and revalidate data agreements periodically, ensuring data storage mechanisms alert communities when data access or sharing occurs, and embedding cultural protocols into data breach responses.

Activity 2: Mapping Data Sensitivity & Rights

While the *Accountability in Action* exercise addressed *who* is responsible for *what*, to *whom* they're responsible, and how accountability is enforced, this activity shifted focus to the content of the data itself, examining how different categories of data may require different levels of protection, oversight, or community involvement—a necessary dimension in considering the different accountability measures explored in Activity 1.

The *Mapping Data Sensitivity & Rights* exercise had participants distinguish between data types in terms of their sensitivity, risks, and appropriate governance frameworks. Participants delved deeply into issues around intellectual property, contrasting Western individualistic legal concepts with Indigenous models emphasizing collective and intergenerational responsibility.

Using a poster print out of a matrix of data types, participants evaluated diverse examples of data, such as:

- Aggregated Catch Statistics
- Fish stock assessment data collected with DFO
- Guardian observation data
- Annual Community Harvest Summary Reports
- Oral history interview transcripts

- GIS data of culturally significant sites
- Video recordings of community ceremonies
- Harvest data shared with third-party consultants
- Water quality and temperature monitoring data
- Public vessel registration lists
- First Nation responses to DFO information requests

Each group assessed these data types according to sensitivity levels (low, moderate, high, sacred/restricted), determined ownership (individual, family, collective/Nation), and access controls (open access, permission-based, restricted, community-only).

Participants then collaboratively decided where to place each data type along these parameters, resulting in a detailed sensitivity/ownership matrix. This exercise generated a lot of discussion, and illuminated significant points of consensus and divergence among participants regarding data classification, revealing practical implications for governance policies.

Group discussions following the exercise explored potential reconciliation mechanisms between Indigenous stewardship principles and Western intellectual property frameworks, proposing innovative solutions such as customized data-sharing protocols and culturally sensitive data labeling.

The session concluded with a synthesis that linked the classification outcomes to the accountability strategies identified in the earlier activity, underscoring the necessity for tailored oversight mechanisms to adequately protect sensitive community data, thus informing future policy and governance decisions.

Interpretation of Activity 2 Results

The aggregated results of the *Mapping Data Sensitivity and Rights* activity revealed both strong areas of consensus and meaningful points of divergence across participants. Across all five groups, there was clear agreement that data related to culturally significant sites, oral histories, and Indigenous place names should be classified as highly sensitive, collectively owned, and subject to restricted or community-only access. Similarly, weather and oceanographic data were broadly classified as low sensitivity and suitable for open access, underscoring that not all environmental data require the same level of protection. However, responses varied considerably for data types like fish stock assessments co-developed with DFO, harvest summaries, and technology roundtable content—highlighting

differing perceptions about ownership, intended use, and potential risk. These divergences suggest a need for clearer agreements in co-managed contexts and more detailed protocols to define access levels and responsibilities. The exercise also reinforced that even data considered “low sensitivity” can cause harm if used out of context or without consent. The visual mapping process proved useful in facilitating consensus-building while also identifying priority areas where further governance clarity is required. This exercise may be useful for an agency developing their own data management protocols to chart out how it may apply to various data types.

Additional findings from notes taken during the exercise include:

- "Low-sensitivity" data can still cause harm if used without consultation, reinforcing the need for layered consent mechanisms.
- Data containing Traditional Knowledge (TK) or cultural site information must be treated with the highest levels of confidentiality and collective governance.
- Intellectual Property considerations need to shift from Western concepts of ownership toward Indigenous notions of stewardship and collective rights, particularly emphasizing Elder and community authority over knowledge dissemination.
- Mechanisms like Traditional Knowledge (TK) Labels, metadata tagging, and restricted access policies were identified as essential tools to protect sensitive information.

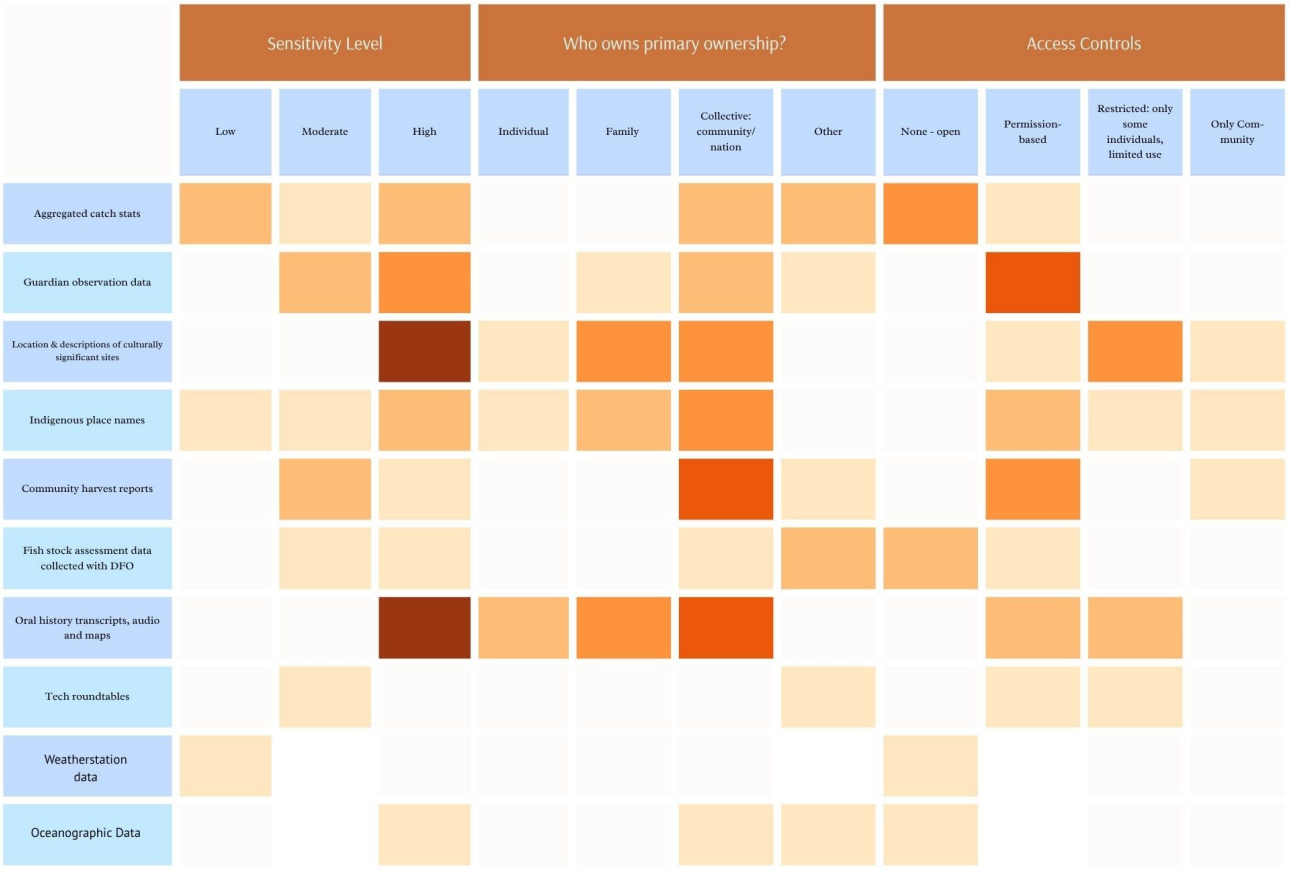


Figure 1: ***Aggregated results from the "Mapping Data Sensitivity and Rights" activity.*** *Participants classified a range of fisheries-related data types according to perceived sensitivity, ownership, access controls, and accountability. The color scale (1–5) indicates the number of groups that selected each category, with darker shades reflecting stronger consensus – the darkest shade indicates all 5 groups selected that category. The results highlight clear alignment on the sensitivity and governance of cultural data, and more varied perspectives on co-developed or technical datasets.*

These findings point to the importance of developing formal, community-defined frameworks for data classification and governance that distinguish between different levels of sensitivity, ownership, and access. For agencies such as DFO, this underscores the need to move beyond binary distinctions between "open" and "restricted" data, and instead adopt tiered, consent-based approaches that reflect Indigenous governance principles such as OCAP® and CARE. Co-developed datasets, in particular, require clearer articulation of rights and responsibilities, including mechanisms for dispute resolution and conditions for secondary use.

The matrix exercise itself offers a practical, adaptable tool for both Indigenous communities and federal agencies to collaboratively assess and align data management practices with community values. By visually surfacing points of consensus and uncertainty, it can support relationship-building, policy development, and the co-creation of protocols that uphold Indigenous data sovereignty in applied research, monitoring, and co-management settings.

Recommendations from Workshop Module #3

- Trailmark, QARS, and IMAWG compile, review, and summarize existing literature, tools, sample agreements, and summaries for circulation to workshop participants.
- Obtain feedback from participants via a brief survey or follow-up calls to inquire whether and how the results of this project might be shared. Draft a brief outlining how other federal departments might use the findings, describing benefits and drawbacks of sharing

For the next step, the planning team will amalgamate and summarize all accessible guidance materials, toolkits, frameworks, and papers relevant to Indigenous Data Sovereignty produced by other partnerships or agencies, in different regions of Canada. We will organize the findings of this review according to the key issues and data cycles identified in Workshops 1 through 3.

A discussion of how the outcomes of this workshop series will be used, including whether they could be used to benefit other federal agencies, will be brought forward to the group as part of canvassing for and clarifying next steps.

Conclusion

The final workshop in this series affirmed that Indigenous Data Sovereignty cannot be achieved through principles alone—it requires practical, culturally grounded governance mechanisms that are co-developed and actively maintained. The principles, values, and understanding of IDS needs built through this collaboration lay the groundwork for deeper accountability and partnership in fisheries and environmental governance. Future work will focus on translating this into guidance, and then into lasting policy change and ongoing support for community-led data governance.