

# Towards Indigenous Leadership in Salmon Governance?

Report from the 2022 Indigenous Salmon Peoples Gathering

Camilla Brattland  
Stine Rybråten  
(eds.)

## IMPLEMENTING INDIGENOUS AUTHORITY + DECISION MAKING IN MULTI JURISDICTIONAL SALMON MANAGEMENT

**DR. SHELLEY DENNY, UNAMA'ij inside of NATURAL RESOURCES**

**MIKMAQ**

**WE ALL WANT SALMON FOR FUTURE GENERATION!**

**JEREMY FIVECROWS COLUMBIA RIVER INTER-TRIBAL FISHERIES COMMISSION**

**WHAT IS A HARVESTABLE SHARE?**

- 4 TRIBES HOLD 90% OF THE SHARE OF SALMON TERRITORY/AREA
- STATES + TRIBES HAVE AN EQUAL SAY AT THE TABLE - allocating ceremonial, sustenance/traditional + then commercial fisheries
- CONSENSUS model + equal voices

**CROSS-BORDER LOCAL + REGIONAL COOPERATION**

**BIVDU: for FISHERMEN in the SEA SAAMI AREA**

**IMPOSED BORDERS**

**RESTORING SALMON WAYS**

**INDIGENOUS PEOPLE HAVE BEEN BANNED FROM FISHING and PRACTICING THEIR CULTURE**

**INDIGENOUS PEOPLE HAVE BEEN BANNED FROM FISHING and PRACTICING THEIR CULTURE**

**1975 - 2015**

**1 MILLION DAYS**

**50% BAN!**

**2004 - FISHING RIGHTS ARE BEING GIVEN AWAY!**

- Sports fishers are buying licenses but have no rights to fish
- SAAMI people have RIGHTS TO FISH BUT CANNOT

**BENN LARSEN, DEATNU COASTAL + RIVER FISHERIES MANAGEMENT GROUP**

**DR. SHELLEY DENNY, UNAMA'ij inside of NATURAL RESOURCES**

**WHO has AUTHORITY + IS AT THE TABLE?**

**EDUCATE MANY PARTIES including recreational sector**

**SHARING MORE INFO!**

**NEGLECTED ABORIGINAL SPECIFIC NEEDS IN THE IMPOSED AGREEMENTS BY DFO...**

**✓ REGIONAL AGREEMENT**

**✓ REASONABLE REPORTING**

**✗ NOT ENOUGH SALMON...**

**✗ NO RECOGNITION OF MIKMAQ TRADITIONAL GOVERNANCE**

**✗ ONLY 9 OF 13 COMMUNITIES**

**DEATH RIVER FISHING ADMINISTRATION:**

- 30 different salmon stock
- 16 diff. fish species
- 16,000km<sup>2</sup> area

**DEATNU: quilledatloguavlu - on Finnish side Local fisheries mgmt**

**bc wa, usa**

**UNITED STATES**

**"FOUR FINGERS - INTO ONE FIST!"**

**WHAT IS A HARVESTABLE SHARE?**

**RESTORING SALMON WAYS**

**SUSTAINABLE FINDING**

**POWER OF PARTNERSHIP**

**SEEING SALMON RETURN**

**STRONG GOVERNANCE + AUTHORITY**

**STRENGTHENING HABITAT**

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Graphic illustration from the session “Implementing Indigenous Authority and Decision-Making in Jurisdictional Salmon Management” at the Indigenous Salmon Peoples Gathering, 1 – 3 October 2022. © Sam Bradd

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Indigenous peoples, Pacific and Atlantic salmon, governance, management, indigenous and local knowledge

NØKKEORD

Urfolk, stillehavslaks, atlanterhavslaks, styring, forvaltning, lokal- og urfolkskunnskap

## Abstract

Brattland, C. & Rybråten, S. (eds.) 2023. Towards Indigenous Leadership in Salmon Governance? Report from the 2022 Indigenous Salmon Peoples Gathering. NINA Report 2365. Norwegian Institute for Nature Research.

What characterizes Indigenous peoples' leadership in wild salmon governance and their participation in state-led management systems? This report summarizes the presentations and discussions on key issues including Indigenous-led wild salmon governance and inclusion of Indigenous knowledge in management efforts such as conservation and restoration of wild salmon, organized by the SALCUL project for the International Gathering of Indigenous Salmon Peoples in Vancouver, 2022. Based on contributions from the project and the Gathering, the report points to the fact that the importance of Indigenous leadership in salmon governance and research is recognized and implemented for many First Nations and Indigenous peoples in Canada and the USA. Compared to salmon river systems in Fennoscandia and elsewhere, with some notable exceptions, the implementation of Indigenous and Sámi leadership and inclusion of Indigenous knowledge in governance and conservation work is still largely missing. Across the different geographical and cultural contexts, recognition of Indigenous leadership and Indigenous rights is a major premise for implementation of meaningful participation and increased sustainability in salmon governance systems.

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## Čoahkkáigeassu

Battland, C. & Rybråten, S. (eds.) 2023. Álgoálbmoga jodiheapmái luossahálddašeamis? Rapporta 2022 Indigenous Salmon Peoples Gathering. NINA Rapporta 2365. Norgga Luonddu Dutkama Instituhtta

Mii lea mihtilmas dan ektui mo álgoálbmogat leat hálddašan luosa ja mo álgoálbmogat leat searvan stáhta jodiuvvon hálddašuvuogádagaide? Dát raporta čoahkkáigeassá daid ovdanbuktimiid ja digaštallamiid dáid guovddáš gažaldagaid birra riikkaidgaskasaš álgoálbmotčoahkkimis luosa birra, mii lei Vancouveris jagi 2022. Doppe deaivvadedje álgoálbmogat čázadagaid ja vuonaid mielde sihke atlánttalaš luosain ja Jaskesábi luosain juogadit máhtu ja vásáhusaid iešguđet dási iešmearrideamis ja ovttasbargoproseassain luosa hálddašeami oktavuodas sin guovlluin. Oasáhusaid bokte čoakkáldagas Vancouveris ja girjjálašvuoda geahčadettiin daid dutkamušaid mat gieđahallet álgoálbmogiid oassálastima luosaid hálddašeapmái davviguovlluin, čájeha raporta ovdamearkkaid álgoálbmogiid jodiuvvon luossahálddašeapmái ja deattuha man deatalaš lea ahte álgoálbmogiid máhtolašvuodta ja suodjalanstrategiijat dohkkehuvvojit ja deattuhuvvojit maiddái dain guovlluin gos álgoálbmogiid oassálastin ja máhtolašvuoda oassálastin dán rádjai ii gávdno.

Raportta vuosttaš oassi guorahallá girjjálašvuoda geahčadeami ja addá iešguđetlágan ovdamearkkaid movt báikkálaš- ja eamiálbmogat leat searvvahuvvon máhtolašvuoda buvttadeapmái ja luossahálddašeapmái dutkamušain main lea fokus Davvi-Amerihkkii ja Sápmái. Dan ektui go davvi-amerihkálaš girjjálašvuodta buori muddui deattuha álgoálbmogiid jodihan luossahálddašanproseassaid ja "Two-Eyed Seeing" mearkkašumi, mas álgoálbmotmáhttu ja oarjemáilmmi dieđa leat dievaslaš máhtolašvuodaásahusat, de gidde Fennoskándalaš girjjálašvuodta eanet fuomášumi váilevaš báikkálaš ja sámi oassálastimii go luossahálddašeami máhtovuoddu ráhkadeapmi lea vuodđuduvvon luossahálddašeapmái ja go mearráduusat dahk-kojuvvojit luondduluosa suodjaleami

Raportta čuovvovaš oassi lea biddjojuvvon vuđolaš cealkámušaide Dorothee Schreiber ja Tero Mustonen bokte. Vuodđun luossahálddašeami vásáhusaide ja johkaovddeštanprošeavttaide Davvi-Amerihkás ja Sámis smihttet čállit vásáhusaid mat sáhttet leat sirdinárvvut maiddái sámi guovlluide Norggas.

Sámediggepresideantta Silje Karine Mouka sárdni lea vuosttaš dán raportta oasis mas geardduhuvvojit ovdanbuktimat maid Norgga ja Suoma ovddasteaddjit dolle álgoálbmotčoahkkimis Vancouveris. Dát ovdanbuktimat leat transkriberejuvvon ja geardduhuvvojit ollislaččat dás. Eamiálbmotčoakkáldaga ollislaš ovdanbuktimat leat gávdnamis the Indigenous Salmon Peoples network neahttasiiddus: [www.iispg.com](http://www.iispg.com) Dáinna raporttain mii háliidit čalmmustahttit man deatalaš eamiálbmogiid máhttu ja searvan lea olahán dihtii eanet ollislaš ja ceavzilis hálddašuvuogádagaid vádjolusluosaid suodjaleapmái. Mii sávvat maiddái ahte raporta sáhtta leat movttiidahttin dakkár álgagiidda go the Indigenous Salmon Peoples Gathering boahhteáig-gis.

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## Sammendrag

Brattland, C. & Rybråten, S. (eds.) 2023. Towards Indigenous Leadership in Salmon Governance? Report from the 2022 Indigenous Salmon Peoples Gathering. NINA Report 2365. Norwegian Institute for Nature Research.

Hva kjennetegner urfolksledet forvaltning av villaks og urfolks deltakelse i statlig ledede forvaltningssystemer? Denne rapporten oppsummerer presentasjonene og diskusjonene rundt disse sentrale spørsmålene under den internasjonale urfolkssamlingen om laks som fant sted i Vancouver i 2022. Her møttes urfolk som har laks som en viktig del av sin kultur fra vassdrag og fjorder med både atlantisk laks og stillehavslaks for å dele kunnskap og erfaringer med ulik grad av selvråderett og samarbeidsprosesser knyttet til forvaltning av villaks i sine områder. Gjennom bidrag fra samlingen i Vancouver og en litteraturgjennomgang av studier som omhandler urfolks deltakelse i villaksforvaltning i nordområdene, viser rapporten eksempler på urfolksledet villaksforvaltning og understreker betydningen av at urfolks kunnskap og bevaringsstrategier anerkjennes og tillegges vekt også i områder der urfolks deltakelse og kunnskapsbidrag foreløpig, og i stor grad, er fraværende.

Rapportens første del tar for seg litteraturgjennomgangen og gir ulike eksempler på involvering av lokal- og urbefolkning i kunnskapsproduksjon og lakseforvaltning fra studier med fokus på Nord-Amerika og Fennoskandia. Mens den Nord-Amerikanske litteraturen i stor grad vektlegger betydningen av urfolksledede lakseforvaltningsprosesser og «Two-Eyed Seeing» der urfolkskunnskap og vestlig vitenskap utgjør utfyllende kunnskapsbidrag, retter den Fennoskandiske litteraturen i større grad oppmerksomheten mot manglende lokal og samisk deltakelse i utarbeidelsen av kunnskapsgrunnlaget lakseforvaltningen baserer seg på og i beslutningene som fattes for å bevare villaksen.

Rapportens neste del er viet utdypende bidrag fra Dorothee Schreiber og Tero Mustonen. Med utgangspunkt i erfaringer med villaksforvaltning og elverestaureringsprosjekter i Nord-Amerika og Sápmi reflekterer forfatterne over erfaringer som kan vise seg å ha overføringsverdi også til samiske områder i Norge.

Sametingspresident Silje Karine Muotkas tale er først ut i den delen av rapporten som gjengir presentasjonene som ble holdt av Norge og Finlands representanter under urfolkssamlingen i Vancouver. Urfolkssamlingens presentasjoner i sin helhet er tilgjengelige på nettsiden til the Indigenous Salmon Peoples network: [www.iispg.com](http://www.iispg.com)

Med denne rapporten ønsker vi å skape oppmerksomhet rundt betydningen av urfolks kunnskap og deltakelse for å oppnå mer helhetlige og bærekraftige forvaltningssystemer for bevaring av villaksen. Vi håper også at rapporten kan være en inspirasjon for lignende initiativ som the Indigenous Salmon Peoples Gathering i tiden som kommer.

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# Contents

<b>1 Indigenous participation in wild salmon management and knowledge production – a literature review .....</b>	<b>16</b>
<b>2 What lessons can Sámi, navigating increasingly depleted and restricted salmon fisheries, learn from the approach of Indigenous peoples in Canada? .....</b>	<b>21</b>
<b>3 Indigenous and Local Participation in Wild Salmon Governance: Selected Case Studies from the Arctic and Boreal .....</b>	<b>28</b>
<b>4 Talks from the 2022 International Indigenous Salmon Peoples Gathering .....</b>	<b>45</b>
<b>5 Summary and Concluding Remarks .....</b>	<b>60</b>
<b>References .....</b>	<b>65</b>
<b>Appendices .....</b>	<b>69</b>
<b>Appendix I. List of relevant literature .....</b>	<b>69</b>
<b>Appendix II. Participant list from the 2022 Indigenous Salmon Peoples Gathering .....</b>	<b>71</b>



## Figures and Tables

Figure 1. Map of the regions of some of the participating Indigenous Peoples and First Nations at the International Gathering of Indigenous Salmon Peoples 2022. ....	9
Figure 2. Organizers and Funders of the International Gathering of Indigenous Salmon Peoples 2022. ....	9
Table 1. Overview of regions and rivers in the selected literature categorized according to degree of participation in salmon management. The cases in bold (Näätämö and Tana/Teno) are the two Sami case rivers in focus for this chapter, Note that the term “Tana” refers to the Norwegian part of the same river system (Deatnu river), while the term “Teno” refers to the Finnish part of the Deatnu river. ....	17
Figure 3. Vladimir Feodoroff, Skolt Sámi elderly fisherman, on Njâuddam, 2013. Credit: Gleb Raygorodetsky. ....	28
Figure 4. Pink salmon, caught in Finnish Sápmi. Photo credit: Tero Mustonen. ....	29
Figure 5. Koitajoki, and its location in Finland. Map credit: Jorma Mattsson. ....	30
Figure 6. The Njâuddam basin. Map courtesy of Johanna Roto. ....	31
Figure 7. Elwha basin. Map image: Jeff Duda, used with permission. ....	31
Figure 8. Hiiskoski side dam, Koitajoki. Photo credit: Tero Mustonen. ....	32
Figure 9. Community-based monitoring has detected fish diseases in Sevetijärvi whitefish, Njâuddam. Photo credit: Tero Mustonen. ....	33
Figure 10. Njâuddam water temperatures, 1980-2015. Source: Brie Van Dam / Snowchange based on the hydrological measurements from Finland. ....	34
Figure 11. Algae bloom in Njâuddam basin, 2018. Photo credit: Tero Mustonen. ....	35
Figure 12. Former Glines Canyon dam site, Elwha. Photo credit: Tero Mustonen. ....	36
Figure 13. Indigenous and Local Knowledge (ILK) governance examples. ....	40
Figure 14. River seining on Koitajoki river. Photo credit: Tero Mustonen. ....	40
Figure 15. Fully restored Kirakkakoski stream, Njâuddam. Photo credit: Tero Mustonen. ....	42
Figure 16. Post-dams, new ecosystems emergent – the former reservoir of Elwha, now a restored river course for salmon. Photo credit: Tero Mustonen. ....	43
Figure 17. Naut’ sa mawt Event Management welcomed the participants to the Gathering. ...	45
Figure 18. Graphic artist Sam Bradd drawing summaries of the sessions. ....	45
Figure 19. Silje Karine Muotka putting the Sámi on the salmon peoples map. ....	64
Appendix 1. List of journal articles resulting from the literature search and relevant emerging literature published after the literature search and review were finalized (2021-2023). ....	69
Appendix 2. Number of participants from the 2022 Indigenous Salmon Peoples Gathering per organization or community, per country, and in total. ....	71

## Foreword

This report is a product of international collaboration carried out through the SALCUL project (Bridging diverse knowledges for improved salmon management), financed by the Research Council of Norway and the Norwegian Environment Agency (2019-2023).

Essential to this work, and central for the outcome of this report, was the collaboration between SALCUL and the International Year of the Salmon (IYS) and the International Gathering of Indigenous Salmon Peoples (ISP) taking place in Vancouver, Canada, 2022, where SALCUL served as a co-organizer. A planning team of Indigenous salmon organizations from British Columbia, Nova Scotia, Sápmi and Yukon, along with Indigenous researchers from the Centre of Indigenous Fisheries at UBC and UiT - the Arctic University of Norway, worked in collaboration to plan the event and to coordinate with the x<sup>w</sup>məθk<sup>w</sup>əyəm (Musqueam) host community. Most of the talks in this report were presented at the Gathering, while others were specifically written for the goal of highlighting the meaning of and complexities of Indigenous salmon peoples' participation in salmon governance in the northern circumpolar region. The report "When Salmon Are Healthy, We are Healthy" written by the planning team behind the Gathering with full details of the program and summary of discussions at the International Gathering of Salmon Peoples can be found on the webpage [iispg.com](http://iispg.com).

The aim of the International Gathering of Indigenous Salmon Peoples was to facilitate international dialogue and collaboration, through which Indigenous Salmon Peoples and their partners could work together to identify potential pathways and actions for strengthening international Indigenous collaboration, Indigenous rights to resources and participation in salmon governance, and improve outcomes for the future of salmon and people.

Representatives from around 40 Indigenous Peoples and First Nations from six different regions worldwide participated in the Gathering (see Figure 1). This international collaboration and knowledge exchange makes the list of people that the SALCUL team wish to thank, deeply and sincerely, long:

Our sincere thanks to the x<sup>w</sup>məθk<sup>w</sup>əyəm (Musqueam) First Nation, where the Gathering took place.

The participants in the delegation from Norway and Finland: Silje Karine Muotka and Anne Toril Eriksen Balto (Norwegian Sami Parliament), Benn Larsen and Pierre Fagard (Deatnu Watershed Fisheries Management), Steinar Pedersen and Inge Arne Eriksen (Bivdu - Coastal Sami Fisheries Association), Niklas Haugstedt (Namsen Watershed Owners' Association), Tomas Sandnes (Norwegian Coastal Salmon Fishers' Association), Aslak Holmberg (Saami Council), Niilo I Aikio (Teno Fisheries Region – Deanu guolledoalloguovlu), Joni Saijets and Juha Hiedanpää (DEATNU research project, LUKE) and Tero Mustonen (Snowchange). Tero Mustonen's participation in the report and project has been also supported from Biodiversa NARROW project and he has received funding from Arctic Passion, the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101003472.

International Salmon Peoples Gathering Planning team: Dennis Zimmerman (Vuntut Gwitch'in First Nation advisor), Amy-Lynne Cheena (Naut'sa mawt Event Management), Samantha D'Odorico (Naut'sa mawt Event Management), Janson Wong (First Nations Fisheries Council), Mackenzie Kermoade (UiT, now ICES), Saul Milne (UBC), Eric Angel (First Nations Fisheries Council), Maggie Mills (ISP Gathering), Shelley Denny (Unama'ki Resources Institute), Deana Machin (ISP Gathering), Dr. Andrea Reid (UBC), Vegar Jakobsen Bæhr (Norwegian Sami Parliament). International Year of the Salmon staff: Mark Saunders, Camille Jasinski, Aidan Schubert. Randy Bruin and MacKenzie Kermoade served as excellent and bright research assistants for the project during the planning phase and to organize and report on the Gathering. The funders and organizers are summarized in Figure 2.

## Indigenous Salmon Peoples

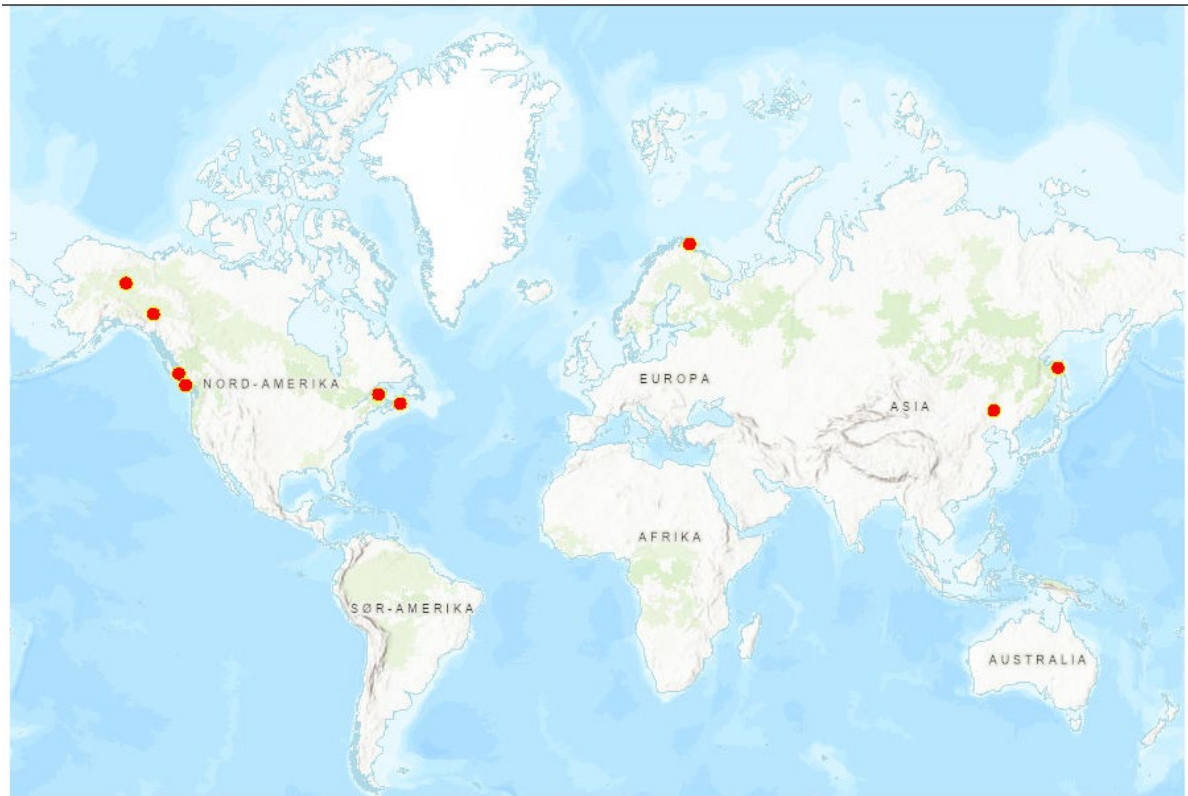


Figure 1. Map of the regions of some of the participating Indigenous Peoples and First Nations at the International Gathering of Indigenous Salmon Peoples 2022.

### Organizers and funders

# International Gathering of Indigenous Salmon Peoples

**xʷməθkʷəy̓əm**  
Musqueam Cultural Center

October 1<sup>st</sup> – 3<sup>rd</sup>, 2022

**Gathering Organized By**



Centre for  
Indigenous  
Fisheries



SÁMEDIGGI  
SAMI PARLIAMENT



UIT The Arctic  
University of Norway



First Nations  
Fisheries Council  
British Columbia



Musqueam First  
Nation



Nuu-chah-nulth  
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INTERNATIONAL  
YEAR OF THE SALMON



MakeWay



THE OCEANS  
COLLABORATIVE  
an initiative of Environment  
Funders of Canada

Figure 2. Organizers and Funders of the International Gathering of Indigenous Salmon Peoples 2022.

## Introduction

“We know how to restore—but we just have to have the capacity to do so.”  
- Dr. Judith Sayers, President of the Nuuchahnulth Tribal Council

An increasing number of publications especially from the North Pacific point to Indigenous traditions and leadership as vital for the sustainability of wild salmon (i.e. Atlas et al 2021). But to what extent do Indigenous peoples lead and participate in wild salmon governance in Fennoscandia and elsewhere? And what can Indigenous peoples learn from each other about leadership in governance and collaboration across Indigenous, local, and scientific knowledge systems? These were among a set of key questions guiding the work of the international component of the SALCUL project (focusing on the Fennoscandian context, more about the project is explained below), which resulted in the gathering of scholars, Indigenous nations and research institutions in an international Indigenous Salmon Peoples Network and Gathering. Here, exchange of experiences with Indigenous involvement in salmon governance was central. Organizers decided to prioritize the voices of wild salmon and Indigenous peoples, and to not include salmon aquaculture as a topic at the Gathering, although this too is a pressing issue. We conceptualize Indigenous leadership as the capacity to lead governance of wild salmon in Indigenous areas or territories, either as sovereign Indigenous governments or in collaboration with Western states. Management of salmon rivers, including restoration and conservation efforts, is at least in the Fennoscandian context as a rule led by Western states. In this report, we address Indigenous peoples' participation in state-led management and the knowledge production processes that underpin wild salmon conservation. We further present examples of Indigenous leadership in salmon governance and the use of Indigenous knowledge as a basis for restoration actions, which are emerging as models for increased sustainability of wild salmon in the literature and in practice.

This report contains two parts: the first part sets the research context and showcases examples of Indigenous participation in salmon governance from Fennoscandia and North America. The second part presents talks from the International Indigenous Salmon Peoples Gathering in Vancouver, British Columbia (October 2022). In the context of this report, Indigenous salmon peoples are conceptualized first and foremost as colonized peoples whose material and cultural basis is salmon.

The first chapter of the report presents a review of literature focusing on participation of Indigenous peoples in salmon governance and scientific knowledge production in North America and Fennoscandia. Broadly, the review identifies a lack of recognition of Indigenous rights and priority for Indigenous and local knowledge in salmon research and governance in the Nordic context as compared to North America. While the concepts of Indigenous-led salmon governance and “Two-Eyed Seeing” in research are discussed as key to salmon governance in the North American body of literature, the lack of inclusion of traditional knowledge in science and the low degree of local and Sámi participation in decision-making are key areas for criticism in the Nordic body of literature. This discrepancy is however not without exceptions.

Following this, chapters two and three are in-depth contributions from specially invited authors Dorothee Schreiber and Tero Mustonen, who were asked to reflect on lessons from a diversity of cases of salmon management and restoration projects in North America and Sápmi which could be relevant for the Nordic context. The report further includes key talks by the presenters from Norway and Finland who were present at the Vancouver Gathering. The talks are transcribed and adapted to this report. The Vancouver Gathering preceded the IYS closing symposium where three of the Indigenous researchers in the Indigenous Salmon Peoples Network (Brattland, Denny and Reid) held a keynote presentation addressing the need to include Indigenous perspectives and knowledges in Western salmon science and governance structures. Various presentations and video recordings of the presentations can be found at the website belonging to the Indigenous Salmon Peoples network: [www.iispg.com](http://www.iispg.com).

The examples and discussions brought forward by these contributions and the Indigenous Salmon Peoples Gathering highlights a call to prioritize the voices of Indigenous peoples in salmon decision-making and in the research that constitutes the knowledge basis for salmon governance. As the participants from Norway and Finland learned during the Gathering, the histories of colonization and marginalization of local and Indigenous peoples in state governance and in salmon management systems are strikingly similar across the continents. The stories of the loss of salmon access and its effects on culture, livelihoods, ways of life, spirituality, sense of identity and self on Indigenous and local peoples across the northern hemisphere were powerful and heartbreaking. At the same time, stories of Indigenous-led governance with restoration projects on Indigenous-governed territories in Canada and the U.S provided inspiration, and the context of the Gathering at the Musqueam land by the Fraser River fostered a safe and fruitful platform from which to discuss the wellbeing and future health of salmon for the participants. We hope that this report will contribute to fostering similar initiatives in the future.

### **The SALCUL Project and Indigenous Salmon Peoples Gathering Background**

The International Indigenous Salmon Peoples Gathering was the result of an ongoing formation of an international network of salmon researchers and Indigenous peoples in the circumpolar region conducted in collaboration with the International Year of the Salmon (IYS) and the research project SALCUL<sup>1</sup>. The main objectives of the multidisciplinary SALCUL research initiative, financed by the Norwegian Research Council and the Norwegian Environment Agency, have been to:

- 1) Investigate salmon as a biocultural phenomenon, to gain insights in different ways of knowing and valuing salmon, and
- 2) Facilitate more legitimate and robust processes of Norwegian salmon management through respectful collaboration between holders of different knowledges.

The local anchoring of the SALCUL project has been the Deatnu-Tana River and Fjord in Sápmi, Northern Norway, and the Namsen River and Fjord in Namdalen, Central Norway. These rivers are among the most productive Atlantic salmon rivers in Norway, as well as internationally. They are further included in the National Salmon Fjords and Rivers scheme for protection of Norway's most important salmon populations. In both areas, the salmon has been of fundamental importance for the first people to make a living in these river valleys.

Fieldwork with participant observation and in-depth interviews in the two case areas have made visible the importance of salmon for peoples' quality of life, identity, sense of place, social relationships, economy, physical and mental health, meaningful meals and for the possibility of acquiring and passing on a salmon knowledge tradition. The project has further shown what Indigenous and local salmon related knowledge consists of and made visible what is at stake for those who live with, of and for Atlantic salmon on a daily basis, being directly affected by the authorities' management measures. While exemplifying bases for occasional large salmon management conflicts, SALCUL has further revealed how increased understanding of various actors' diverse relationship to and valuations of salmon, as well as their different space for agency, may help in facilitating dialogue and collaboration.

Throughout the SALCUL project, international recommendations on the inclusion of local and Indigenous knowledge, as well as different values and ways of appreciating nature, have been central. The project has facilitated repeated meetings between key actors involved in Norwegian salmon management, including knowledge producers and management representatives at various levels, as well as fishermen and business actors involved in – or seeking involvement in – processes resulting in management measures affecting their daily lives. The project has revealed challenges associated with the Norwegian sector division and the Ministry of Climate and Environment's area of responsibility related to wild Atlantic salmon, the complexity of Norwegian

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<sup>1</sup> <https://www.nina.no/english/Fields-of-research/Projects/SALCUL-en-GB>

salmon management, the Environment Agency's room for manoeuvre, and the obstacles and opportunities for including local and Indigenous knowledge in Norway's current management model. While Indigenous and local knowledge play central roles at the local level of Norwegian salmon management, within local management processes and in various research projects, SALCUL has revealed a lack of structures for including Indigenous and local knowledge also at the national level.

By emphasizing the complementarity of knowledge systems, SALCUL has aimed for broadened understandings of the challenges and opportunities we face in caring for wild Atlantic salmon. In this way, the project has facilitated increased knowledge exchange and collaboration within Norwegian salmon management and knowledge production; one step towards a more holistic approach to sustainable wild salmon management.

The IYS was a five-year co-initiative housed under two regional fisheries management organizations: the North Atlantic Salmon Conservation Organization (NASCO) and the North Pacific Anadromous Fish Commission (NPAFC), working “to establish the conditions necessary to ensure the resilience of salmon and people throughout the Northern Hemisphere<sup>2</sup>. At an international symposium on salmon (hosted by NASCO, NPAFC and IYS) in Tromsø in 2019, the inclusion of Indigenous peoples in the health and wellbeing of salmon was a central topic and the possibility of organizing an international event on the topic was raised.

In 2021, the IYS organization and SALCUL team began planning to co-facilitate an Indigenous Salmon Management Workshop. Throughout autumn of 2021, the two organizations held a series of informal consultative meetings with stakeholders from the Northern Hemisphere, including Indigenous salmon managers and other individuals directly involved in Indigenous salmon management. From these informal consultations, the IYS received feedback on the objectives, structure, and intended audience for the workshop. The informal consultation meetings culminated in December 2021 in an online trans-basin Planning Session, which convened representatives from 12 Indigenous-led organizations in Canada, Finland, Norway, and the United States. Planning Session participants affirmed a need to decentre the role of Western Science in the Indigenous-led salmon management process and stressed the value of facilitating inter-comparison between Indigenous management experiences and practices.

The Planning Session generated three Workshop design priorities: first, to provide a space for Indigenous salmon managers to share Indigenous knowledge and management practices at different scales; second, to consider the realignment of knowledge systems; and third, to empower participants to determine a future vision for Indigenous-led salmon management. Importantly, Indigenous salmon managers emphasized the need to have a physical meeting to facilitate real exchange of knowledge. It was decided to aim for a physical Gathering of the network in conjunction with the IYS closing symposium, which resulted in the International Indigenous Salmon Peoples Gathering in Vancouver, October 2022.

### **Previous and Future Indigenous Salmon Peoples' Gatherings**

The Vancouver Gathering was not the first to gather Indigenous peoples over salmon issues internationally. In 2008, the United Nations Development Programme (UNDP) hosted a Conference entitled “Problems of Traditional Fishing by Indigenous People of the North and Prospects of Local Communities Based on Their Inclusion into Management of Fish Resources” in Kamchatka, Russia. The conference likely bookended the five-year UNDP regional project “Promoting Ecotourism around Kamchatka World Heritage Sites,” which aimed to combat threats to salmon from caviar poaching and oil, gas, and mineral development (Government of the Russian Federation, 2003; Webster, 2003). A related UNDP and Global Environment Facility (GEF) initiative, “Conservation and sustainable use of wild salmon diversity in Russia's Kamchatka Peninsula,” endeavoured to “nurture a dialogue between the scientific knowledge of Russian scientists

<sup>2</sup> [International Year of The Salmon | Conservation & Habitat](#)

and the practical knowledge of native people” (Government of the Russian Federation, 2003, 31-32). By consulting with Indigenous groups in the region, the project would “develop programs for the preservation and maintenance of Indigenous knowledge of salmonid diversity and river ecosystems” and publish outcome papers combining traditional ecological knowledge (TEK) and “scientific insights” (Government of the Russian Federation, 2003, 31). However, Indigenous groups in Kamchatka expressed concern about the veracity of Indigenous engagement in the UNDP projects, and it is unclear as to what extent Indigenous knowledge was incorporated into project frameworks or outcomes.

In contrast to the UNDP projects in Kamchatka, which sought to incorporate Indigenous knowledge into external structures, the 2010–2015 River of Salmon Peoples initiative collected and published Indigenous salmon knowledge directly, without the constraints of “academia, political, historical, sociological, or anthropological positions” (Armstrong & William, 2015, 1). The initiative engaged First Nations of the Fraser River Watershed (in what is now known as British Columbia, Canada) in a series of “community dialogue workshops” (Armstrong & William, 2015, 1). Unabridged transcriptions from workshop participants were presented in the 2015 River of Salmon Peoples book. In another method of anthologizing Indigenous experiences with salmon management, the 2010–2012 Keystone Nations research compilation presented eight ethnographic case studies on Indigenous peoples across the North Pacific, assembled by ten research specialists (Colombi & Brooks, 2012). The Keystone Nations publication included examples of Indigenous peoples and their salmon systems from Siberia, Alaska, and the western coast of Canada and the U.S (although the Norwegian anthropologist Marianne Lien in the final chapter compares salmon agency in the Pacific to Scandinavia).

In sum, the resulting outcomes and publications from the UNDP, River of Salmon Peoples and Keystone Nations initiatives each offer overviews of Indigenous peoples and their relations with salmon, limited to the Pacific salmon basin. Within the Atlantic basin, a notable cross-Atlantic initiative is the “Salmon Voices” workshop which was initiated by Dorothee Schreiber and organized in collaboration with Camilla Brattland in Munich, Germany, in 2011. Resulting from the collaboration between Schreiber and Brattland, First Nations from both the eastern and western coasts of Canada participated along with Sami from Norway in a workshop focusing on the interactions of Indigenous peoples with the salmon farming industry (Schreiber and Brattland, 2011).

When it comes to long-term cross-Atlantic collaborations encompassing the participation of Indigenous peoples and salmon in North America, Russia, and Europe, the two main governmental scientific and political arenas are NASCO and Arctic Council working groups. The Arctic Council has through several projects initiated by the Permanent Participants attempted to bring the attention of the states to the importance of traditional knowledge in assessment of freshwater systems (the latest being Salmon Peoples of the Arctic, Arctic Council 2020). In NASCO, which is limited to the Atlantic salmon basin, both the Sami and First Nations (Mi'kmaq) have been present at the Commissions' meetings, but only the Norwegian Sami Parliament holds a special status as an Indigenous observer which it gained in 2010 (Brattland & Mustonen, 2018). The IYS had an ongoing engagement with First Nations and Indigenous peoples in North America and Asia during its project period and collaborated with the Indigenous Salmon Peoples' network to organize the Indigenous Salmon Peoples' Gathering and to facilitate keynote presentations by Indigenous researchers at the main session of the closing symposium of the IYS. In 2023, the Finnish Sami Parliament participated in a session about Indigenous representation in NASCO, proposing to strengthen the participation of Indigenous peoples in the organization and to align the organization with the principles of the United Nations Declaration on the Rights of Indigenous Peoples (Anne Nuorgam, 2023). A second Gathering of Indigenous Salmon Peoples is being planned for the fall of 2024 in Sápmi. The ongoing and continued efforts from Indigenous peoples and their allies to improve their participation in salmon research and governance thus looks to continue also for the future.

## Authors

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salmon related projects and we will learn more about some of these projects. He is also a journalist on Sámi TV.

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# 1 Indigenous leadership and participation in wild salmon management and knowledge production – a literature review

Camilla Brattland and Randy Bruin

## 1.1 Introduction

In this chapter, we present an analysis of the degree of participation of Indigenous peoples and First Nations in wild Pacific and Atlantic salmon management and knowledge production, based on a review of literature published in the field over the last decade.

The review was conducted in the spring of 2021 searching in the ISI Web of Science with search terms such as “Indigenous”, “salmon”, “salmon management” and “participation” (using OR, meaning the articles could contain any of these words) and was then screened for relevance according to the aim of the analysis. The search resulted in 83 peer-reviewed articles in recognized ethnohistorical, sociological and environmental journals such as *Ecology and Society*, *Environmental Management*, *AMBIO*, *ARCTIC*, *Science*, *Marine Policy* amongst others. Our goal was to analyse the status of the field based on examples spanning over the last decade, thus literature published before 2010 was excluded.

The articles were assessed according to the relevance of the article for analyzing the degree of Indigenous peoples and First Nations participation in wild (Pacific and Atlantic) salmon management and knowledge production. Articles containing concrete references to rivers or regions were included, while more general studies on co-management, special analysis of gender issues, the politics of management, or ecological studies such as the interaction of farmed salmon with wild salmon were not selected for this review, although some of them are among the most cited articles in the broader field of salmon-human interactions (Jacob et al., 2010; McKechnie & Moss, 2016; Norgaard et al., 2018; Vähä et al., 2011). The screening of relevant articles resulted in a list of 38 cases described in 34 articles with cases spanning the circumpolar region from Alaska, the west coast of the US and British Columbia, Northern and Eastern Canada, Fennoscandia, and Russia. The list of journal articles resulting from the literature search is listed in Appendix 1. The appendix also contains relevant emerging literature published after the literature search and review was finalized (between 2021 and 2023).

There is a large body of scholarship on Indigenous leadership and participation in salmon management in British Columbia and Alaska, with some of the most cited relevant articles on the incorporation of traditional knowledge into Alaska federal fisheries management (Raymond-Yakoubian et al., 2017) but also with examples of cross-continental comparisons between rivers such as the Colombia (US) and the Tana river (Norway) (Ween & Colombi, 2013). In addition to journal articles, some anthologies with multiple chapter authors are central, among them the recent book “Navigating Our Way to Solutions in Marine Conservation” (Crowder, 2023) with the chapter “Indigenous leadership is essential to conservation: examples from British Columbia” (Reid & Ban, 2023). Among the most central publications that attempt to comprehensively review cases of human-salmon relationships from a wider region is the edited book volume “Keystone Nations: Indigenous Peoples and Salmon across the North Pacific” (Colombi & Brooks, 2012) and the recent special issue in *Society and Ecology* edited by Carothers and colleagues “Alaska’s Salmon and People: Synthesizing Knowledge and Dimension” (Carothers et al., 2021). Both publications emanated from larger research projects based at the School for Advanced Research (Santa Fe) and the University of Fairbanks, Alaska, respectively. These comprehensive publications contain multiple cases from Siberia to Sápmi, but only a few cases cover eastern Canada and the Sámi areas (cf. Lien in (Colombi & Brooks, 2012)). Another important institution behind the large body of literature on First Nations relations with salmon in British Columbia is the University of British Columbia and recently the Indigenous Fisheries Centre where moving

beyond “bridging” of knowledge systems into an Indigenous framework of “Two-Eyed Seeing” to transform fisheries research and management is promoted (Reid et al., 2021; Reid & Ban, 2023). The articles are produced mostly by North American authors, with an emerging minority of Fennoscandian authors. For the most part, the research focuses on single salmon rivers and/or regions, but with some examples of cross-country or cross-regional (Brattland & Mustonen, 2018; Reid et al., 2021) and cross-continental comparison (e.g. Colombi & Brooks, 2012; Ween & Colombi, 2013). The North American literature tends to focus on documentation and discussion of the relationships between Indigenous peoples and First Nations and salmon and the importance of its priority in salmon conservation and management, based on a situation where Indigenous peoples in many cases have key roles as governance actors. The Fennoscandian literature tends to criticize the lack of Indigenous participation in Norwegian and Finnish salmon management, with the important exception of the Skolt Sami co-management project of the Näättämö (in Skolt Sámi language: Njâuddam) river (Mustonen, 2021).

The cases in the articles were categorized coarsely according to the degree of participation of Indigenous peoples and First Nations in salmon management, which also includes the degree of participation in scientific knowledge production (see Table 1, based on analysis conducted by Bruin and Brattland). The categorization is adapted from Arnstein’s (1969) ladder of citizen participation in governance and a further analysis of the concept of participation in salmon governance and knowledge production is in process in a forthcoming paper by Brattland, Rybråten, Bjørkan and Mustonen. Most of the cases we have analyzed from the literature generally place Indigenous participation in management at the median and lower degrees of participation. Participation in knowledge production, however, varies greatly from being ignored, to Indigenous peoples leading the knowledge production process themselves.

Total	38							
Count	7	3	12	2	2	9	3	
Region	Degree of participation	Alaska (US)	US	British Columbia (CA)	Northern Canada	Eastern Canada	Sápmi	Russia
Ladder of indigenous participation in salmon and river management	<b>High (4)</b>		Columbia River(1)	Atnarko River Heiltsuk Nation (2)			<b>Näättämö (1)</b>	
	<b>Medium (21)</b>	Yukon River Bristol Bay (2) Southeast Region		Great Bear Region Cowichan River Coastal Region Fraser River (2) Koeeye River	Slave River Delta Saskatchewan	Nova Scotia (2)	<b>Tana (3)</b> Näättämö (1)	Kamchatka Ponoi
	<b>Low (12)</b>	Copper River	Columbia River(1)	Great Bear Region			<b>Teno (3)</b> Coastal Norway	Arkhangelsk
		Coastal Region	Klamath River	Fraser River (2)				

*Table 1. Overview of regions and rivers in the selected literature categorized according to degree of participation in salmon management. The cases in bold (Näättämö and Tana/Teno) are the two Sami case rivers in focus for this chapter, Note that the term “Tana” refers to the Norwegian part of the same river system (Deatnu river), while the term “Teno” refers to the Finnish part of the Deatnu river.*

In the cases where the same paper contained multiple cases of Indigenous participation in different rivers, we conducted a separate analysis of the degree of participation in each case. Most of the cases were categorized on the middle of the ladder, based on the articles’ descriptions of Indigenous peoples and First Nations being consulted or informed in management but not really having decision-making power or influence on the knowledge production process (21 cases). The second largest group of cases is the lowest step of the ladder where Indigenous peoples

and First nations were described as being ignored or marginalized in management, or as being only symbolically included in knowledge production processes (12 cases).

A few examples highlighted the role of Indigenous peoples and First Nations as either in control of salmon management or as leading the knowledge production in parts or most of salmon management processes (4 cases). A clear categorization of these cases was however difficult to make as most cases contain multiple dimensions and the role of Indigenous peoples and first Nations are sometimes ambiguous. Indigenous peoples may for instance lead or play a large role in knowledge production but are ignored in management. Some papers contained multiple cases, and here we analyzed the degrees of participation for each river or region respectively. In the cases of the Njâuddam and Deatnu<sup>3</sup> rivers, we have included these in more than one category in the model of participation, depending on how the degree of participation is characterized in the different papers. We placed articles in order of Indigenous participation in management according to the perspectives of each assessed article.

The literature and the chosen cases need to be considered in relation to historical ongoing conflicts and certain events that have spurred academic research and knowledge production in the field. Large river systems in addition to the Deatnu river are the Yukon, Colombia and the Fraser river which are dealt with multiple times in several articles, reflecting high levels of tension and conflict, but also examples of increasing Indigenous participation in Western state-led salmon management and emerging Indigenous empowerment in the form of Indigenous-led governance (especially in the cases of the Yukon and Njâuddam rivers). There might be other events of which the authors of this paper are not aware which has also influenced the production and citation rates of the reviewed articles. For more information on Indigenous-lead governance in salmon rivers, such as the Fraser River, which is a large and complex system with multiple conflicts and institutions involved in its governance, we refer to publications by the Centre for Indigenous Fisheries at the University of British Columbia ([Centre for Indigenous Fisheries \(cif.fish\)](http://cif.fish)).

## 1.2 Salmon management in Sápmi

The literature review locates the status quo of Indigenous participation in salmon management in Sápmi relative to Indigenous salmon management systems, such as the ones addressed in a large body of literature on salmon management and Indigenous peoples and First Nations in Alaska and British Columbia, Canada. Even though the literature is dominated by a critical body of literature on the lack of participation of Sámi in the Deatnu river system, our review serves to illustrate a diversity of cases and approaches to inclusion of Sámi in salmon management in Sápmi.

In the Deatnu and Njâuddam rivers, Sámi participation in the governance of the watersheds is construed very differently. The participation of Sámi in Swedish environmental governance as pertains to salmon rivers is not treated here, but see Landauer et al. 2023. In addition to the rivers of Deatnu and Njâuddam, we also mention the Ponoï river in Russia as an example of Sámi involvement in salmon management, which is comparable to the Njâuddam case (Mustonen 2021).

High participation (Table 1), is exemplified in cases from the US, British Columbia and Sápmi. This means that there are examples of Indigenous and/or First Nations-lead salmon governance across contexts and continents, even though Indigenous rights jurisdictions are very different especially between Fennoscandia and North America. It must be noted that the Njâuddam case is however a special case in Sápmi, as it is in a Skolt Sámi area which is the only example of a community that still enjoys a form of self-governance in the form of a siida council – the Siid' suobbar.

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<sup>3</sup> The northern Sámi term Deatnu means “mother river” while the terms “Tana” and “Teno” are the Norwegian and Finnish names for the same river system.

Brattland and Mustonen (2018) points to the difference between the rights situation of the Skolt Sámi and other Sámi communities as one of the explanations for why the Skolt Sámi community has been able to lead and implement a salmon river restoration project based on traditional knowledge, in contrast to the failure of Norwegian salmon governance to implement the same practices for salmon fisheries in Sámi areas in Norway (Brattland & Mustonen, 2018).

As noted previously, the placement of the cases depends upon the point of the view of the authors of the reviewed papers and is further influenced by our own engagement with, and knowledge of, the chosen cases. As such, it should not be read as the result of an objective, criteria-based exercise. The broad categorizations is meant to capture the diversity of descriptions of the cases as examples of Indigenous and First Nations exclusion from management and of being ignored in science (i.e. the Deatnu Agreement as “an emblem of settler colonialism” (Kuokkanen, 2020) and “tightening Nordic control over the river’s management” (Frandy, 2021)) to a more hopeful and nuanced discussion of how salmon planning and decision-making is becoming more participatory also for the Sámi (cf. Hiedanpää et al., 2020).

Just above the Arctic Circle runs the Ponoï river: the largest river on the Kola Peninsula in Russia (Mustonen, 2021; Mustonen et al., 2021). One article highlights the non to low degree of participation of Indigenous peoples in Ponoï river management as a failure to adapt to and mitigate climate change impacts and impacts of the invasion of pink salmon as an alien species (Mustonen et al., 2021). Mustonen (2021) critically reviewed the Ponoï next to the Njâuddam case in order to explore the role of Indigenous knowledge and rights within co-management. The study illustrates a low level of participation in management and medium degree in knowledge production in the Ponoï government-led river management. In the case of Näättämö, it illustrates the value of co-management where Snowchange as an independent research institution facilitated collaboration between scientists and Sámi knowledge holders in the Njâuddam river and region. Including Indigenous knowledge can allow for the development of new knowledge, and the cases highlight several results that would not have happened without Sámi leadership and participation in the management of the rivers (Mustonen, 2021).

A new body of critical literature focusing on the Deatnu river has emerged, as a response to the highly contentious salmon management reform undertaken by the Norwegian and Finnish states in the period 2015 to 2017. Aside from ignoring Sámi traditional knowledge in science, the Deatnu agreement (2017) appears to include traditional fishing methods, but there is no reference to Sámi fishing rights in it. Especially critical literature authored by Sami scholars from both Norway (Law & Joks, 2019) and Finland (Kuokkanen, 2020), Frandy (2021), signals a high level of conflict in this area and a massive attention from critical social scientists on the issue. It is highlighted that the Indigenous knowledge on sustainability is ignored by (western) science, and that scientists blame traditional fishing methods for holding the responsibility for a decline in salmon (Frandy, 2021). Another example highlights the ignorance of a long history of local human-salmon relations in the Deatnu area. It is argued that salmon management systems are based on quantitative scientific results foremost without including ‘protection nor development of local knowledge and culture’ (Ween & Colombi, 2013).

In general, the literature portrays Indigenous communities as being invited to participate in decision-making but communities do not feel that their perspectives are sufficiently valued (Hiedanpää et al., 2020; Kuokkanen, 2020; Law et al., 2017). In Brattland and Mustonen (2018) Atlantic Salmon governance in Norway and Finland was discussed, particularly in Norwegian coastal fisheries and the Njâuddam river. The Njâuddam co-management project was contrasted with the failure to include coastal salmon fishers in governance, and could be an example of best practice in Arctic environmental governance from which Finnish and Norwegian authorities could learn valuable insights (Brattland & Mustonen, 2018).

### 1.3 Knowledge gaps and future research needs

Whereas some of the Alaskan and British Columbia cases were categorized quite highly on the ladder of participation (Table 1), none of the Sámi cases climb completely above the level of co-management, despite that Indigenous and local knowledge was sometimes included in scientific salmon assessments (Hiedanpää et al., 2020). Even though the Njâuddam case is a positive exception to the rule, real Indigenous self-government was not achieved.

A key knowledge gap that we identify from this review is the lack of a clear approach to differentiate between participation in management and participation in knowledge production. In many cases, knowledge production seems to be integrated with management, while in other cases, they are considered two strictly separate processes. Being involved in management does imply involvement also in knowledge production, but research-wise these two processes are commonly confused into one and the same process.

Of relevance for the Sámi context, another main finding from this exercise is the difference in approach in the few examples addressing salmon management in Sápmi. In general, Sámi participation in salmon management of the Deatnu river tends to be regarded as being marginalized or only symbolically included in salmon governance, while the Njâuddam case is mentioned as a case of successful Indigenous-lead governance, but with little power to influence national-scale regulations and structures. Formally, however, the Deatnu local management body has a high degree of influence on salmon fishing regulations as this is the body that sets the terms for the coming years' fishing regulations. Although the management body is led by Sámi and incorporates Sámi traditional knowledge in its work (Joks and Law 2019), its influence is however limited by what is allowed under the legal framework currently in place, which is regulated by national and international legislation (i.e. Kuokkanen 2020). Critical and Sámi scholars generally address the lack of Sámi participation in the Deatnu knowledge production and the ignorant attitude of salmon conservationists. However, there is little attention paid to analysis of the capacity of the governance system to adapt to changes. There is thus a need to address at which stage in the governance and knowledge production process traditional knowledge could be fruitfully incorporated and in which ways Sámi leadership could constructively contribute to salmon governance.

In contrast, recent literature on Indigenous-led conservation in North America highlights good examples of Indigenous salmon management and harvesting methods (Atlas et al., 2021) and the necessity of Indigenous leadership in conservation (Reid & Ban, 2023). The Njâuddam case belongs in the same category of good examples. One of the main differences between the Deatnu case and the other cases is the lack of self-governing institutions, organized production of traditional knowledge, and lack of exercise of Sámi self-determination in the Deatnu valley. This leads us to ask whether Indigenous-led salmon governance can be achieved for areas without territorial self-determination, as is the case for Fennoscandian countries, or whether salmon governance with a high degree of Indigenous participation is dependent on the recognition of Indigenous rights and implementation of Indigenous self-governance.

While these knowledge gaps undoubtedly deserve more attention from salmon scholars across disciplines in the future, they are at least partly discussed in the following chapters of this current report.

## 2 What lessons can Sámi, navigating increasingly depleted and restricted salmon fisheries, learn from the approach of Indigenous peoples in Canada?

Dorothee Schreiber

### 2.1 Introduction

Norway is not generally considered a settler colonial state; the term tends to be used in connection with places where Indigenous people find themselves surrounded and confined to reserves by a settler population, such as in the Americas, Palestine, and Australia. Norway is recognized for being an early signatory to all of the international covenants protecting Indigenous rights. Domestic Norwegian law also protects cultural rights and the material basis for those rights, and Norway's wealth is shared much more equitably than in North America or Australia. The success of the post-war welfare state has meant that Sámi living in Norway enjoy a high standard of living. Since the implementation of the Finnmark Act in 2005, "about 95 percent of the land in Finnmark has been returned to the joint administration of the Samediggi [Sámi Parliament] and the county," (Law & Joks, 2019, p. 429) which means that the Sámi population through the representation of the Sámi Parliament on the joint Finnmark Estate Board has influence over the disposition of land in Finnmark on equal terms with the Norwegian population (the Finnmark County and the Sámi Parliament has an equal number of participants on the board).

Despite the strength of Norway's social democracy, fisheries management in Norway bears a strong resemblance to Canada's approach of structural infringement of Indigenous fishing rights. In their article, "Fishing Around the Law: the Pacific Salmon Management System as "Structural Infringement" of Aboriginal Rights," Emily Walter, Michael M'Gonigle, and Celeste McKay explain structural infringement as what happens when the state forcibly intervenes in Indigenous fisheries governance, breaking the connection between use and management of the resource. Structural infringement works by suppressing Indigenous ways of governing relationships to fish, and has the effect of re-allocating fish to other (industrial and/or recreational) users. As Walter et al. put it, "the definition of fishing as harvest, and not stewardship, remains as significant a tool today as ever for denying to First Nations access to the resource." (Walter et al., 2000, p. 297)

The reason that structural infringement is such a powerful tool of dispossession is that fisheries governance integrates spiritual beliefs, language, social organization, patterns of ownership, technologies, political traditions, legal practices and inter-national relations. The attempt to pry fishing away from its cultural foundations has severely disrupted Indigenous cultures. Indigenous fisheries governance has a success record measured in its ability to conserve and manage species sustainably through history. Indigenous peoples certainly had the capacity, in terms of catch and preservation technologies, to over-exploit the salmon (Harris, 2001, p. 24). The fact that they did not do so was due to a profound respect for salmon that pervaded every aspect of their lives.

The Saanich scholar and fisherman Nick Claxton explains this in his description of the salmon reef net fishery -- which is carried out in saltwater using a net suspended between two canoes, and in which kin groups controlled access to specific fishing locations:

It is more than just a fishing technique; it is a model of governance over an integral part of what it means to be a WSÁNEĆ person. Fish and fishing is the WSÁNEĆ identity. To govern ourselves as WSÁNEĆ would mean to also govern our fisheries and live and fish as we always did, with the reef net. This is what is promised in the Douglas Treaties. The WSÁNEĆ are an example of a traditional Indigenous society that had an extensive system of governance in place that allowed this society to flourish. This situation, however, could represent any traditional Indigenous society on Canada's Pacific Coast (Claxton, 2008, p. 55).

Indigenous fishers, when faced with fisheries management regimes that are not their own, have pointed to their own legal orders as the basis for their rights and responsibilities towards fish. This is despite the differences in how nation states and their regional governments have regulated away pre-existing Indigenous fishing rights over time. Contemporary efforts to “include” Indigenous peoples, whether in Norway or in Canada, in fisheries management seems only to further entrench the authority of the state. This is because inclusionary efforts are grounded in the imposition of settler law and the extension of privileges – rather than from the acceptance of Indigenous law and the recognition of rights. Therefore, I ask: to what extent is structural infringement of Indigenous rights happening in Norway, and can Sámi learn from the experiences of First Nations living under the same challenges to their ancestral, Indigenous, fisheries governance regimes?

## **2.2 The state creates privileges, rather than recognizing rights**

### **2.2.1 Restricting Indigenous law: The Tana River**

The events that unfolded on the Tana River in the summer of 2017 signalled to the Norwegian public that Sámi were prepared to exercise their fishing rights, even if that meant being in conflict with Norwegian law. Calling themselves “Ellos Deatnu,” meaning “Long Live the Tana River” or “Let the Tana River live,” a group of Sámi youth set up camp on an island in the middle of the Tana River, declared Sámi jurisdiction and the right of the island on the same terms as human, in a zone around the island, and issued a moratorium on recreational fishing. They made it known that their fisheries would be governed by traditional Sámi law, and that they were not actually “occupying” the island, since “these are Sámi territories, and we are, after all, Sámi.” (NRK, 2017) This action was a declaration that, at least for the time that the camp remained in place, Indigenous law superseded the Tana Agreement. Ellos Deatnu made it known that the fishery would be locally controlled by the Sámi rights-holders and these rights-holders could, at their discretion, extend fishing privileges to outsiders.

Under the bilateral agreement between the nation states of Finland and Norway, cottage owners on the Finnish side of the River procured salmon fishing rights, while the rights of Sámi with historic connections to the River and customary rights to fish were not recognized. The new regulations placed the brunt of the conservation burden on Sámi fishers, by banning Sámi fishing technologies, specifically weirs and stationary net devices for trapping salmon (YLE, 2022), limiting fishing to permanent residents of the Tana River valley, and cutting Sámi fishing by 80%, while cutting recreational fishing by a mere 40% (Kuokkanen, 2020, p. 518). The architects of the agreement, on which the Sámi were not consulted, and to which they did not consent, justified these changes as conservation measures. Ellos Deatnu pointed to the fact that it was in fact the state’s fisheries management regime that led to the collapse of salmon stocks in the river (NRK, 2017).

The Sámi scholar Solveig Joks describes her relatives fishing with a drift net on the Tana River, highlighting the detailed knowledge of the river bottom, the currents, and the behaviour of the fish that is required to successfully catch fish using this technology. The rules for drift net fishing have become increasingly restrictive over the years. Only people who live along the river can fish during limited openings, which amounted to four days in the 2017 season. Openings for Sámi to use drift nets and weirs have been cut 70% since the 1980s. Indeed, it appears that Sámi drift net and weir fishing are headed for extinction (Law & Joks, 2019, p. 427-428).

### **2.2.2 Restricting Indigenous law in Canada**

The idea that Indigenous people fishing using traditional technologies are a conservation threat is one that has been repeated throughout the history of salmon management in British Columbia. As the salmon canning industry became established on the west coast of Canada in the late 19<sup>th</sup> century, cannery owners began to feel the increasing competition for access to fish. Cannery owners were desperate to get access to limited licenses, and a boom in cannery construction ensued (Walter et al., 2000, p. 290). They also began to complain bitterly about the fact that Indigenous peoples competed with the industrial fishery for access to salmon, accusing Indigenous fishers in the interior of destroying salmon on the spawning grounds.



Still, Canada's Inspector of Fisheries for the new province of British Columbia, A.C. Anderson, attempted over the course of the 1870s -- following British Columbia's entry into the Dominion of Canada -- to exempt Indigenous fisheries from Canada's Fisheries Act. Anderson even went so far as to write to the federal minister to refute allegations from cannery owners about the Native fishery, pointing out that fish weirs were "quite innocuous." (Harris, 2001, p. 43). He also appealed to Canada for a formal exemption for Indians from the fisheries regulations: "I am quite prepared to advocate and to sustain the legitimate and hereditary rights which I conceive to be inalienably legitimate and hereditary rights which I conceive to be inalienably secured to the Indians, both on grounds of abstract justice, and of formal concession by the Crown." (Harris, 2001, p. 46)<sup>4</sup>.

By 1881, pressure from settler interests, in particular the profitable salmon canning industry, mounted. The change in government policy towards Indigenous fisheries was reflected in the subtle but powerful shift in A.C Anderson's stance towards enforcement of Canada's Fisheries Act. In closing an Indigenous commercial salmon fishery in non-tidal waters, Anderson suddenly started to refer to Indigenous fishing not as rights, but as privileges (Harris, 2001, p. 58). When competition for fish mounted, Indigenous people began to have the fisheries regulations -- which were geared towards the fishing methods of the industrial fishery -- strictly enforced against them.

State surveillance and regulation of the Native fisheries reached a new high in 1888 with the creation of a separate category of fishing, one that had not existed in actual Indigenous societies -- the "Indian food fishery." This effectively restricted Indigenous fishing to a subsistence component only, and even this subsistence fishery was sometimes completely closed by fisheries authorities. By 1894 fishing for food was strictly controlled by a permit system, gear restrictions, and seasonal closures, and by 1909 weekly closures as well as a requirement to report catches was added. Selling fish caught under a food fishing license was an offense (Butler, 2006, p. 115-116). As a result, Indigenous fishers could no longer work as independent producers, catching fish at traditional sites using traditional technologies, and then selling parts of the catch -- as they had done since the establishment of the Hudson Bay Company in British Columbia. Selling their labour to the industrial fishery, as fishers or shore workers, was the only option Indigenous fishers had left if they wanted to make a living from fishing. This involved fishing from cannery-owned boats at the mouths of the large salmon-producing rivers, such as the Fraser and the Skeena Rivers. As the historian Dianne Newell has pointed out, Indigenous people were to be helpers, not competitors to the industrial fishery (Newell, 1993, p. 52).

The use of traditional gear to fish for salmon was violently suppressed on both the east and west coasts of Canada in the first part of the 20<sup>th</sup> century. For example, in 1904 fisheries officers destroyed the fish weirs on the tributaries of Babine Lake in British Columbia. These weirs were close to the spawning ground for the Skeena River sockeye, where the Lake Babine Nation caught salmon for their own food, to trade with other Indigenous peoples, and to trade in dried and smoked form with local settlers. Despite the enormous demands made by the canneries at the mouth of the Skeena River -- there were eleven canneries operating at the time, supplied by 700 fishing boats and employing 2,500 workers -- Canada's fisheries department sided with the canneries in arguing that the weirs threatened the conservation of the stocks (Harris, 2001, p. 79-92). In eastern Canada, the fisheries regulations prohibited traditional spear fishing techniques, even though it was a common practice for the government to lease out portions of salmon rivers to private individuals or elite angling clubs. This exclusion from the fishing grounds created terrible hardships for Indigenous peoples. For some, such as the Innu excluded from fishing salmon on the north shore of the St. Lawrence River, the result was starvation (Pulla, 2003).

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<sup>4</sup> Harris adds that "Anderson was referring to the treaties and to the work of the JIRC [Joint Indian Reserve Commission], both of which, so he thought, had secured their fisheries."

The suppression of Indigenous fishing continued well into the 20<sup>th</sup> century, while Indigenous people never stopped asserting treaty and inherent rights. Isaac Metallic, a Mi'kmaq Elder and fisher from Listuguj, recounts that “of course, the anglers, the sports fishermen were complaining that we were taking all the salmon out of the water.” People in his community went ahead and asserted their rights to fish under the Peace and Friendship Treaties, first fishing only at night, and then more openly, in the daytime. “They started putting wardens on the river,” he said, “and sometimes we had a tug-of-war, with them pulling one end and us pulling the other end of the net.” Government offers to buy the community out of their fishing rights were ineffective at stopping community members from fishing, and open periods for fishing continued to be cut back. “When they cut us the last time – down to three days of fishing – that’s when we said ‘no, we’re going to keep on fishing without an agreement.’” The result was the invasion of the Listuguj reserve by militarized police: “In 1981 they sent in the army. We call it the army, but it was actually the Surete du Quebec (SQ), the Quebec provincial police. Five hundred of them entered the reserve, and they were heavily armed. They raided the reserve, but after they left we put our nets back in the water. They had seized all the nets – well, not all of them, since we still had some nets, and other communities donated nets for us to put back in the water, so we put those back in. The SQ came back a week later, but they didn’t enter the reserve.” (Metallic & Metallic, 2012, p. 15) After finally negotiating agreement, Listuguj decided in 1991 that “this is not working for us,” so they took over management of their own fisheries. “We abide by our own laws: we’ve made our own regulations, we’ve developed our own conservation plans, and you see success there,” Isaac Metallic said (Metallic & Metallic, 2012, p. 15-16).

### **2.2.3 The state maintains control, through offers to negotiate and promises of reconciliation**

In the 1990s the Supreme Court of Canada handed down a series of decisions, first recognizing in *Sparrow* [1990] a priority right for Indigenous food fisheries (*R. v. Sparrow* [1990] 1 SCR 1075, z.d.). The Supreme Court of Canada found in *Marshall* [1999] that Mi'kmaq fishers have a right, under the Peace and Friendship treaties, to fish and sell their catch to earn a “moderate livelihood.” (*R. v. Marshall* [1999] 3 SCR 456, z.d.) Aboriginal rights to a commercial fishery need to be proven in court on a case-by-case basis, and the onerous legal test for proving this right has placed legal recognition of commercial rights out of reach for most First Nations. A few have nevertheless succeeded. The Heiltsuk were found in *Gladstone* [1996] to have an Aboriginal right to sell herring spawn-on-kelp, and the Nuu-chah-nulth Nations of the west coast of Vancouver Island were found in *Ahousaht* [2013] to have commercial rights to all species except geoduck within their territory (*Ahousaht Indian Band and Nation v. Canada*, 2013; *R. v. Gladstone* [1996] 2 SCR 723, z.d.).

Likely in an attempt to stave off the litigation that was to come, DFO<sup>5</sup> quickly responded to the *Sparrow* decision by launching the Aboriginal Fishing Strategy, which was to be a “bridging arrangement in fisheries matters during the negotiation of comprehensive land claims and self-government agreements.” (Government of Canada, 2008) And in its 1993 Policy for the Management of Aboriginal Fishing, DFO resumed its practice of making allocations to Indigenous users, this time in cooperation with so-called “aboriginal fishing authorities,” whose role was to designate the individuals who would be allowed to fish under DFO’s communal fishing license (Government of Canada, 2010).

When First Nations negotiate with DFO to gain access to licenses that would allow them to sell the fish they catch, they see that Canada talks of “rights,” “reconciliation,” and “recognition,” but that Canada does not commit, as Mi'kmaq scholar Fred Metallic puts it, “to breathe life into rights.” (APTN, 2019) As a result, Indigenous fishers on both the east and west coasts of Canada have taken a two-pronged approach: negotiating with the DFO wherever possible, but when that fails, exercising rights on the ground.

<sup>5</sup> The Department of Fisheries and Ocean, a federal institution responsible for managing Canada’s fisheries and oceans resources.

Gord John, a federal Member of Parliament and fisheries critic for the NDP party, has spoken out about the fact that the negotiation tables are set up to fail:

We know full well that those tables aren't resourced properly and that the government hasn't really issued a true mandate to their negotiators to resolve these issues," B.C. MP Gord Johns told APTN News. ... "They're ragging the puck," he said, a hockey expression meaning when a player controls the puck to kill off time but doesn't try to score. "It's government inaction, and the Liberals have abandoned Indigenous fishers and left DFO officials without mandates or direction to respect reconciliation and Constitutionally entrenched rights that are reaffirmed by the courts."(APTN, 2020)

The BC Court of Appeal said as much in a 2021 decision. Regarding the inability of Canada and the Nuu-chah-nulth nations to agree on a fisheries policy that would recognize the Nuu-chah-nulth right to fish commercially, the court pointed out: "One factor contributing to the lack of success was Canada's failure to provide its negotiators with authority to negotiate a regulatory scheme outside of the existing legislative and policy structure." (*Ahousaht Indian Band and Nation v. Canada*, 2021)

In its lengthy decision, the BC Court of Appeal found that while Canada may impose licensing requirements without violating Aboriginal rights, large parts of the regulatory regime were unjustified, and the Court sent the parties back to the negotiating table. But after eighteen years of litigation to have their Indigenous right to fish commercially affirmed by the courts, 12 years of which were caught up in appeals to the court over the failure of DFO to create a regulatory pathway consistent with the court's decision, the Nuu-chah-nulth leadership decided that the time had come to start exercising their fishing rights on the ground.

The ha'wiih (hereditary leadership) of the five Nuu-chah-nulth First Nations of Ahousaht, Hesquiaht, Ehattesaht/Chinehkint, Mowachaht/Muchalaht, and Tla-o-qui-aht announced that they "will no longer stand by, as our fishers remain tied to our docks, while non-Indigenous users benefit from the resources of our traditional territories," and authorized their members to fish according to the First Nations' own fishing plans (EIN Presswire, 2021). This is how Hasheukumiss (Richard George) Ahousaht First Nation Ha'wilth (Hereditary Chief) put it:

I have been continually shocked with the various allocations of fish species that the federal government has deemed appropriate. We have the inherent right to fish and sell fish in our traditional territories. The DFO and the rest of Canada need to understand that our traditional territories, and the resources within, are ours to manage. Everything within our waterways is 100% ours, and it is our right to continue our fishery. We are willing to share 50% of our resources with the other user groups, but at the end of the day, the resources are ours to manage through our own conservation practices. We're fighting for these resources so that our next seven generations will be able to participate in fisheries into the future (EIN Presswire, 2021).

In Mi'kmaq territory on the east coast, First Nations have also tired of waiting for DFO to engage in a meaningful manner – tired of waiting for a regulatory regime that would lift their communities out of poverty. In the late summer of 2020 and 2021, numerous Mi'kmaq First Nations took to the water to exercise their treaty right to fish lobster commercially for a moderate livelihood.

The reaction was swift and violent. Under cover of darkness, non-Indigenous lobster fishers are thought to have cut loose boats and set fire to a boat and a lobster pound owned by a Sipekne'katik First Nation band councillor (CBC, 2017). In broad daylight, DFO officers seized many traps as soon as they were put in the water, and were a heavy presence on the fishing grounds, leaving Mi'kmaq fishers intimidated and harassed (APTN, 2021).

It is important to point out that the chiefs of the communities were fishing alongside their members, including Chief Mike Sack of Sipekne'katik First Nation, who was arrested (CBC, 2021).

When Chief Andrea Paul of Pictou Landing First Nation was approached by fisheries officers, she told them: “The only one that is preventing us is you not authorizing our fisheries. We already authorized this in our community,” ... “So we’re going to continue to do what we have a right to do, and that is to fish for Netukulimk [which means sustaining resources for future generations] fisheries.” (APTN, 2021) The national chief of the Assembly of First Nations, RoseAnne Archibald, traveled from Ontario to support Mi’kmaq fishing boats in their treaty fishery, live-streaming the DFO’s enforcement action for all to see. Chief Archibald did not mince words in denouncing Canada’s behaviour: “No more seizure of lobster gear,” she said. “That is taking food from the mouths of our children. That has to end. Stop criminalizing treaty rights.” (CBC, 2021).

### **Fraser River Salmon Co-Management and the Integrated Harvest Planning Committee (IHPC)**

The Department of Fisheries and Ocean’s (DFO’s) mechanism for consulting with Indigenous communities on Fraser River salmon allocations is the Integrated Harvest Planning Committee (IHPC). Canada describes it as “the key advisory process used by DFO for integrated planning of the Pacific salmon fishery.” (Government of Canada, 2021, p. 202)

As with many co-management agencies in Canada, the IHPC is an advisory body, not a decision-making body. The IHPC promises to provide an opportunity for the different fisheries sectors to come together and work out potential conflicts. The structure of the IHPC is therefore designed to represent the groups that compete against one another for a share of the limited overall quota. These groups are: commercial fishers, sport fishers, and First Nations fishers. By setting up each regional IHPC (one for north coast, and one or the south coast) with 4 representatives from the commercial fishery, 4 representatives from the sport fishery, and 4 First Nations representatives, the DFO is treating Indigenous fishers as just another interest group. Unlike non-Indigenous sports and commercial fishers, however, Indigenous fishers have rights protected under the Constitution Act, section 35. These rights include fishing for food social and ceremonial purposes (*R. v. Sparrow*), and increasingly, the Indigenous right to sell fish (*Ahousaht, Marshall, and other court cases*).

The IHPC is designed to make decisions by consensus. In the history of the IHPC, consensus was achieved only twice, and the consensus was restricted to minor budgetary and license payment issues. In both cases the DFO refused to act on the IHPC’s recommendation (Government of Canada, 2021, p. 97).

The main source of dissatisfaction with the IHPC among First Nations is the fact that Canada has set up this advisory body as what is known as a “Tier 3” process, and as such, by-passes direct negotiations between First Nations and Canada. A Tier 3 process, such as the IHPC, is one that engages First Nations, Canada, and others involved in the fisheries. As the First Nations Coalition stated in a written submission to the federal Cohen Commission:

A primary reason First Nations are not currently attending the IHPC is that they will not negotiate the protection and exercise of theirs. 35 Aboriginal rights, particularly their priority s. 35 FSC [food, social, and ceremonial harvesting] rights, with stakeholders. ... The FNC [First Nations Coalition] submits that given the nature of the decisions made ... it is critical that First Nations have an opportunity, on a Tier 2 level, to discuss these issues with DFO (Government of Canada, 2021, p. 277-279).

The Tier 2 process that First Nations are demanding refers to meetings between First Nations and government (in this case, Canada) to discuss the exercise of Aboriginal and treaty rights to fish. This type of meeting has been bypassed in the IHPC process, in favour of pitting commercial and sport fishers against one another, and against First Nations fishers.

The work done by the IHPC can be divided into its pre-season and post-season activities.

In the pre-season, the IHPC provides advice on the efficacy of fishing plans, making sure that fishing plans are coordinated and integrated, reviewing management and enforcement plans, and receiving and providing advice to DFO on pre-season forecasts and stock assessments. Before the start of the season the IHPC is also tasked with advising on changes to escapement strategies or policies, advising on measures and mechanisms for accurate catch monitoring, and advising on selective fishing practices.

## 2.3 Conclusion: The way forward is to recognize Indigenous jurisdiction over Indigenous fisheries

The cases described above demonstrate that for Indigenous communities, exercising stewardship and governance rights to the fishery is a matter of cultural survival. At the root of the infringement of fishing rights is a structural issue, related to the replacement of pre-existing Indigenous governance systems with state control. The separation of the regulatory regime – which is in the hands of the state – from fishing technologies and practices is at the heart of structural infringement.

What is becoming clear is that Indigenous rights cannot be accommodated by increasing the amount of “participation” in state-sponsored fisheries management. I suggest that the only way forward to counter structural infringement is to recognize Indigenous jurisdiction over Indigenous fisheries. If the wild fisheries are to survive, and by extension Indigenous peoples, the state’s authority must give way to pre-existing forms of Indigenous law. As described above, in Canada First Nations have given up waiting for the DFO to implement court-recognized fishing rights, and are taking to the water to fish in accordance with their own fishing plans and fisheries laws. This approach appears to be resonating in Sápmi as well. Commenting on the 2017 Tana Agreement and its infringement of Sámi fishing rights, fisherman and Sámi politician Beaska Niillas said: “We have tried all political channels, but there is no use in negotiating with the state. They just take and take. One has to take control oneself.” (NRK, 2017)

This reflects the extent to which the infringement of Indigenous fishing rights “precludes the development of modern, locally driven, and culturally meaningful “self-regulation” initiatives by First Nations” (Walter et al., 2000, p. 298) – or, in this case, Sámi. It is difficult to see how external control and allocation of the fishery can be made compatible with Indigenous ways of knowing and working with the fish. As Solveig Joks has described:

The rules stop you fishing when the conditions are right. Or they stop you fishing in another section of the river even though conditions are right there but not in your own. Or the rules allow you to fish but there is no point in doing so, or you can’t because there is no one to fish with, the water is too low or high, or there are too many tourists. Thus, though they are both present, the world of rules and the world of fishing are indeed, just that, worlds apart. As we have just said, the world of rules is ignorant of the fluidities of the world of fishing and their relational contingencies (Law & Joks, 2019, p. 434).

As Walter et al. suggest, the infringement of the stewardship component of fishing rights “can only be redressed by shifting toward meaningful community management in a manner reminiscent of traditional practices.” (Walter et al., 2000, p. 298) Indigenous institutions may not be able to function in exactly the same way today as they did pre-contact, but Indigenous people are ready to interpret their laws in the context of the present day.

### 3 Indigenous and Local Participation in Wild Salmon Governance: Selected Case Studies from the Arctic and Boreal

Tero Mustonen



*Figure 3. Vladimir Feodoroff, Skolt Sámi elderly fisherman, on Njåuddam, 2013. Credit: Gleb Raygorodetsky.*

#### 3.1 Introduction

This chapter explores challenges, governance, success and failures relating to wild salmon in three northern basins: 1. the Koitajoki catchment area in Finland – Russia (Mustonen & Mustonen, 2018), 2. the Njåuddam river in the sub-Arctic of Finland – Norway (Mustonen & Feodoroff, 2013) and, 3. Washington state's Elwha basin located in the U.S. Pacific Northwest (Mapes, 2013).

All catchment areas have been and/or are in part important wild salmon habitats and river systems. These sites have also suffered from man-made alterations (hydropower, dredging, stream alterations, mining, forestry or other drivers). Additionally, in recent decades the role of human-induced climate change is affecting especially the Arctic and boreal basins in many ways, including drought conditions, extreme warm spells, algae blooms, changes to the cryosphere conditions and ice formation and break-up, and expansion of more southern species.

This chapter provides an overview of contexts in these three basins, summaries of official and/or governmental management of the most important drivers of change and ultimately reviews the Indigenous and/or community responses to the same issues. The discussion section offers reflections from the governance outcomes of the three streams.

### *Species Discussed*

This chapter discusses the following species of salmonid fish:

- Atlantic salmon (*Salmo salar*)
- Land-locked Atlantic salmon (*Salmo salar Sebago / saimensis*)
- Chinook salmon (*Oncorhynchus tshawytscha*)
- Chum salmon (*Oncorhynchus keta*)
- Coho salmon (*Oncorhynchus kisutch*)
- Pink salmon (*Oncorhynchus gorbuscha*)
- Sockeye salmon (*Oncorhynchus nerka*)
- Rainbow trout (*Oncorhynchus mykiss*)

(summarized from (Duda et al., 2011; Mapes, 2013; Mustonen & Feodoroff, 2013; Mustonen & Mustonen, 2018; Wray, 2015)

Salmon, no matter if they are Atlantic or Pacific or land-locked, are anadromous. This means they are born and grow in a river, go out to sea (or a lake system) to grow and become adults, and return to their natal streams for reproduction. However Atlantic and Pacific salmon have varied life histories at reproduction time – the Pacific stocks usually die after spawning, whilst the Atlantic salmon may come back for multiple spawning events. Rainbow trout is included as an anadromous relative of salmon for the Pacific stocks and as an introduced species in Koitajoki.

This chapter discusses Atlantic salmon in their native ranges (Koitajoki, Njåuddam) and Pacific Salmon in their native range of Elwha (Chinook, Chum, Coho, Pink, Sockeye and Rainbow trout). Introductions and species range extensions affect Koitajoki (introduction of Rainbow trout), Njåuddam (expansion of Soviet-introduced Pink salmon) and Elwha (farmed Atlantic salmon escapees). Elwha contains also populations of coastal cutthroat trout, bull trout and Dolly Varden, but they are not discussed here.



Figure 4. Pink salmon, caught in Finnish Sápmi. Photo credit: Tero Mustonen.

### 3.2 Indigenous and Traditional Community Areas Discussed



Figure 5. Koitajoki, and its location in Finland. Map credit: Jorma Mattsson

Koitajoki is a 200-kilometer long boreal basin in Russian and Finnish Karelia (Mustonen & Mustonen, 2018). The catchment area is 6630 square kilometers. In the lower part, the main spawning areas of the land-locked Atlantic salmon (*Salmo salar Sebago / saimensis*) have existed since the last Ice Age and associated connections/barriers to the Baltic. The Koitajoki spawning areas are servicing the whole Saimaa lake system, that acts as the feeding area of the salmon (equivalent to the sea for non-land-locked species). The basin consists of wildernesses that are the homelands of ethnical Finnish, Karelian and Russian groups. Koitajoki is a part of the UNESCO Biosphere area of North Karelia and considered highly relevant due to its role as the home of *Kalevala*, the national epic of Finns and Karelians (Mustonen & Mustonen, 2018).



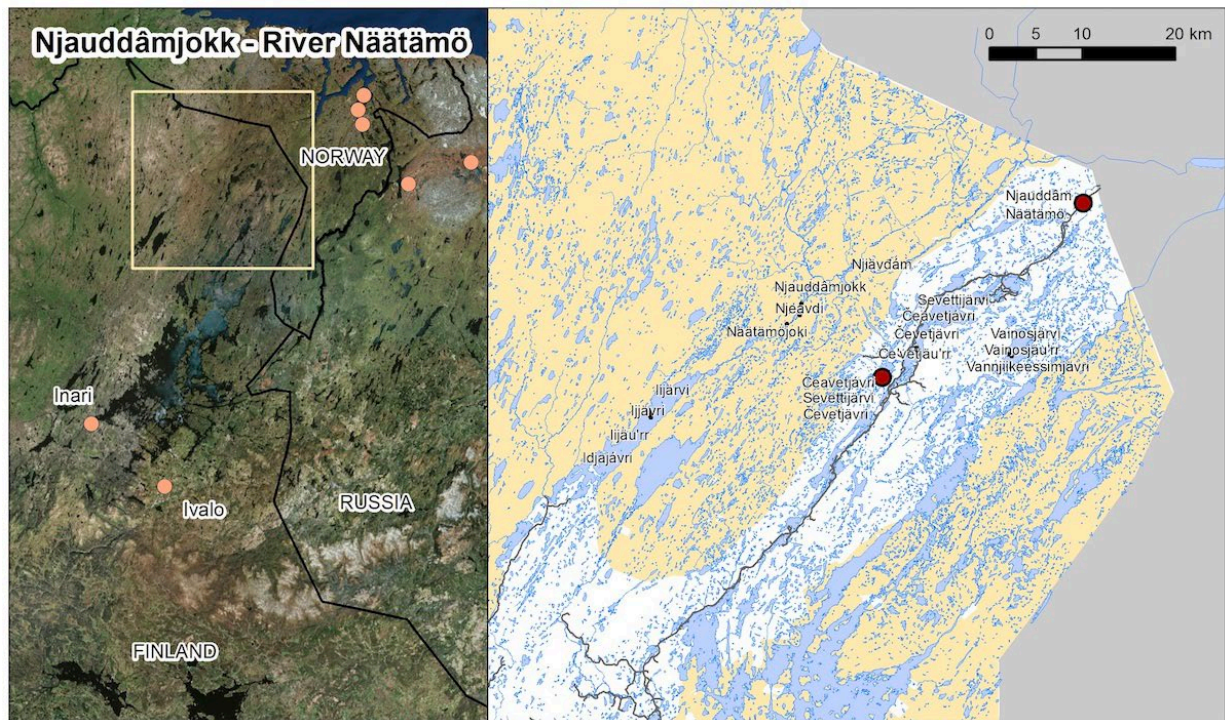


Figure 6. The Njåuddam basin. Map courtesy of Johanna Roto.

Njåuddam basin is a major Atlantic salmon stream on the Finnish-Norwegian borderlands (Mustonen & Feodoroff, 2013). The basin size is 3160 square kilometers. It is the mustonen and feodoro ancestral home of the Skolt Sámi Indigenous (Brattland & Mustonen, 2018). The 'original' Skolts were displaced by Norwegians starting in 1826 and completed by end of 1800s. Kvens, a Finnish-speaking minority in Norway, re-established themselves on the Norwegian side of the river. Since 1945, following the forced relocation of the community of Suonikylä from Petchenga region, Skolt Sámi were re-settled along the Njåuddam basin. This constitutes the Indigenous population today in the region (Mustonen & Feodoroff, 2013).

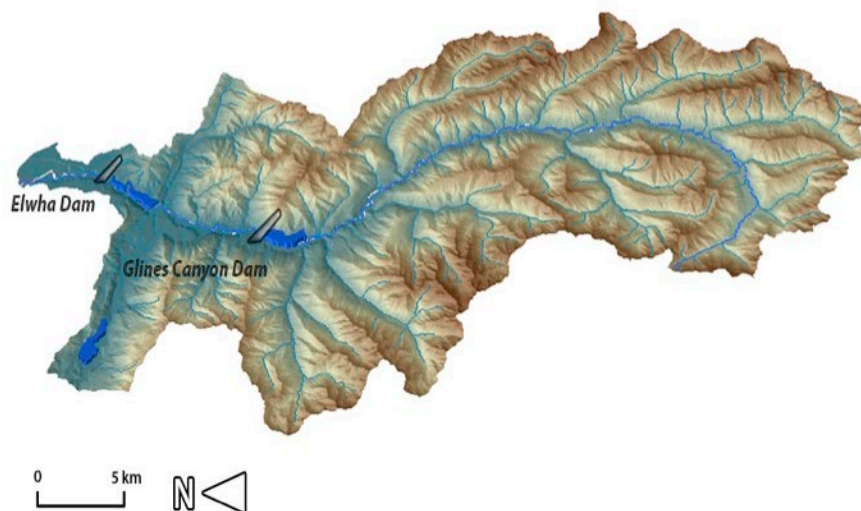


Figure 7. Elwha basin. Map image: Jeff Duda, used with permission.

Elwha basin is located in Washington State, USA (Duda et al., 2011; Mapes, 2013; Wray, 2015). Most of the 72km-long river system is inside Olympic National Park. The basin is 820 square

kilometers. Nəxʷsəl' áyəm, or the Lower Elwha Klallam Indigenous peoples (Wray, 2015), speaking Coast Salish language, are the traditional owners of the river area.

### 3.3 Scene Setting: Challenges in Salmon Management and Health in Three Rivers

In this section, each of the river systems is investigated for the main drivers of change or issues affecting salmon in those streams. Given the space limitations of the report, not all salmon-relevant issues can be summarized adequately. This part focuses first on a number of primary concerns and then on the governance questions in relation to salmon, stocks, habitats and the challenges.

#### ***Koitäjoki: Land-locked Atlantic Salmon***

Koitäjoki is the natal stream of land-locked Atlantic salmon stocks of the national Vuoksi system. The main spawning areas of the entire Saimaa salmon stocks are located in the Ala-Koidanjoki (Lower Koitäjoki). Before large-scale changes occurred in the river system, it was estimated that over 30,000 salmon arrived there to spawn (Mustonen & Mustonen, 2018).

Finland underwent a very rapid industrialisation period after the Second World War. This was partly due to the financial reparations the country had to pay to the Soviet Union. Large industrial land uses altered the boreal basins, peatlands and forests.

In Koitäjoki area, the main terrestrial changes in the basin were a result of:

- Peatland and marsh-mire ditching
- Peat mining using ditches and large open peat production areas
- Clear-felling timber harvesting
- Gold mining since 1990s
- Waste water dumping between 1945-1980  
(summarized from Mustonen & Mustonen, 2018)



Figure 8. Hiiskoski side dam, Koitäjoki. Photo credit: Tero Mustonen.

In the context of Atlantic salmon and other salmonids, the establishment of three hydropower stations (to power the timber industries) are the main problems and impediments for the anadromous fish:

Name	Year of Building	Power	Location	Fish Ladder
1. Pamilo	1955	84 MW	Koitajoki	No
2. Kaltimo	1958	32 MW	Pielisjoki	No
3. Kuurna	1971	18 MW	Pielisjoki	No

No fish ladders exist on these stations, and as Koitajoki is connected to the Saimaa lake system via the Pielisjoki river, the Kuurna and Kaltimo stations make access for the salmon (and trout) difficult. A level of 50 mother fish has been established and they are caught by nets below the Kuurna power station. After that they are transported to a hatchery, milked and the species is thus maintained mainly through a governmental programme. In 2019 the number of mother fish for salmon rose up to around 275 (YLE, 2019) but has since fallen again to 20-40.

In addition to the hydropower problems the salmon is being affected by loss of habitat, by-catch on Saimaa lake and worsening water quality due to terrestrial land uses both on Saimaa and on the river sections where it moves back up (Mustonen & Mustonen, 2018).

#### ***Njäuddam River: Climate Change and Basin Alterations***

Njäuddam river was slated also for hydropower development after the WW2, but these plans were ultimately abandoned for the most part (Mustonen & Feodoroff, 2013). River Kallojoki, a sub-catchment area of the basin, was diverted to produce electricity for Norway. This alteration caused changes to the main flow of the Njäuddam river.



Figure 9. Community-based monitoring has detected fish diseases in Sevettijärvi whitefish, Njäuddam. Photo credit: Tero Mustonen.

On the Finnish side, in 1800s large clear cuts removed most of the pine forests along the Njåuddam river corridor (Mustonen & Feodoroff, 2013, 2020). In 1900s the state agencies continued the clear-cutting programme, especially in the Pakanajoki river sub-catchment area. Additional man-made changes included infrastructure development (bridges, channelling, roads), dredging and removal of rocks from sub-streams like Vainosjoki and Kuosnijoki and burning of terrestrial habitats to stimulate Scots Pine forestry over birch.

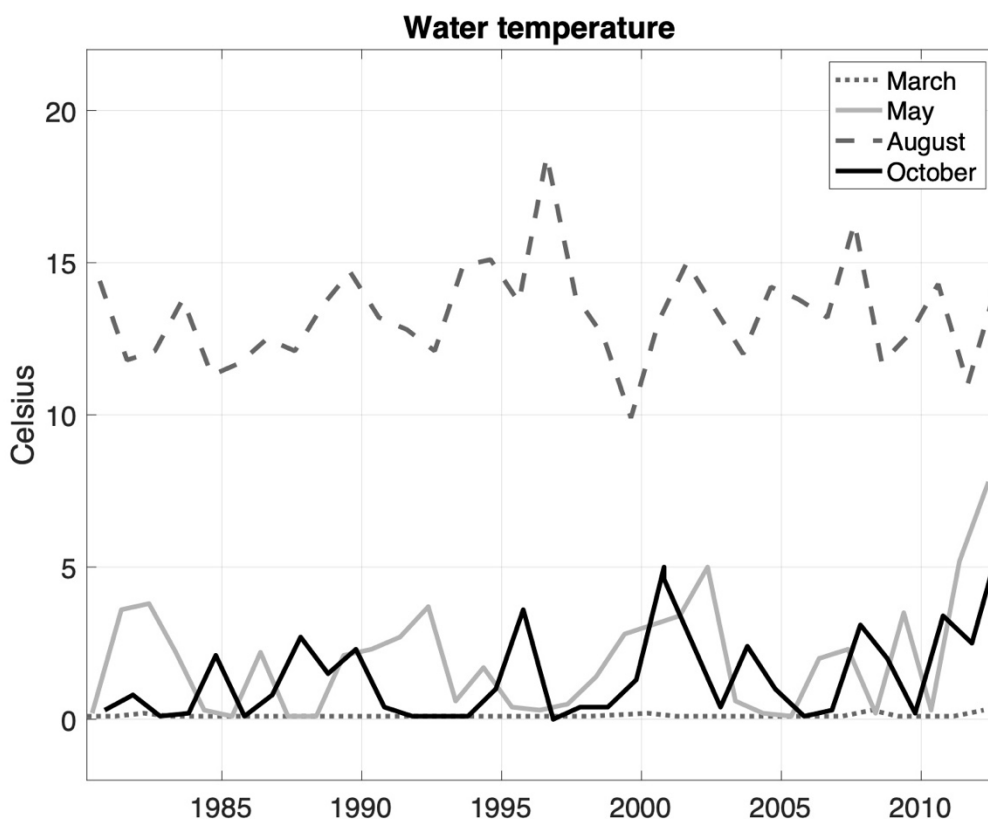


Figure 10. Njåuddam water temperatures, 1980-2015. Source: Brie Van Dam / Snowchange based on the hydrological measurements from Finland.

In the late 1990s and then more prominently between 2000-2020, as seen in the Figures, climate change has affected the Njåuddam basin. For instance, according to the Norwegian Hydrological Authority the station in the lower part of the Neiden river measured peak water temperatures reaching nearly 24 degrees in July and August 2018.

The river is susceptible to quick changes in water levels that may happen as a result of either droughts or spring melt events or rainfall. Some of the key observed climate change-associated issues are:

- Lack of water or sudden increases in water levels on the main river course due to precipitation changes
- Heat spells, often lasting weeks, including air temperatures above 28-30 C and resulting water temperatures beyond 24 C degrees, a critical survival level for salmonids
- Heat stimulated expansion of native algae blooms across the system, benefitting also from the seasonal nutrient inputs from reindeer feces and feeding patterns during winter (practice banned in early 2000s but still practiced occasionally)
- Erosion events due to fluctuating water flows from the altered sections of the basin and new wave action which also adds to organic loading

- Expansion in range and numbers of those fish species, such as northern pike, that thrive on warmer waters and habitats
- Better survival and expansion of range of introduced Pink Salmon stocks in the Njåuddam basin
- Arrival of new southern species of insects into the basin
- Changes in the cryosphere (snow and ice) and a lack of cold seasons, which affects snow amounts, timing of spring runoff, and thus available water across the basin
- New storms and extreme events
- Climate induced and other changes out at sea (where salmon feed) that then affect salmon health, numbers and survival (see, e.g. Brattland & Mustonen, 2018; Mustonen & Feodoroff, 2013, 2020)



*Figure 11. Algae bloom in Njåuddam basin, 2018. Photo credit: Tero Mustonen.*

These climate change related issues affecting Njåuddam and Atlantic salmon stocks should be also understood as complex interconnected systems (over geographical ranges from the ocean into the headwaters), across species (northern pikes to salmon to algae) to impacts related to Indigenous cultures and Sámi ways of life and survival.

### ***Elwha River: Hydropower and Its Removal***

The Elwha river is a basin mostly in a natural state due to its location within a national park (Olympic National Park). However, between 1911 and 2014 two dams were constructed on the river, altering the access, habitat and natural cycles of the salmonid fish, including their anadromous movements (Duda et al., 2011; Mapes, 2013; Wray, 2015).

These two dams were:

	<b>Distance</b>	<b>Power</b>	<b>Year</b>
Glines Canyon Dam	21 KM	13,3 MW	1921
Elwha Dam	7,9 KM	14,8 MW	1913

(summarized from (Mapes, 2013))



*Figure 12. Former Glines Canyon dam site, Elwha. Photo credit: Tero Mustonen.*

It has been estimated that prior to damming approximately 400,000 salmonid fish used the 70 kilometers of the river course and basin, arriving from the Pacific Ocean (Wray, 2015). After the construction of the dams, around 4000 fish were able to use the river (Valadez, J. and Arakawa, H, 2015). Additionally, the dams flooded several Nəxʷsəl̓ áyəm sacred places and prevented traditional harvesting and land use practices (Valadez, J. and Arakawa, H, 2015; Wray, 2015) as well as hindered the food security of the Indigenous peoples. Elwha was known for its distinguished large Chinook salmon stocks, with fish weighing as much as 45 kilos.

Between 2008 and 2014 these dams were removed. This is the largest dam removal to date, in the world. This meant that the salmonid, anadromous fish, could re-start to use the basin (Duda et al., 2011). Expectations are that around 390,000 fish could return to the river as well as a restart of the Pacific rainforest ecosystem functions (nutrient flows from the Pacific upstream are necessary for predators and the rainforest ecosystem, see Mapes, 2013).

### 3.3.1 Governmental / Official Responses to the Challenges

On Koitajoki the regional and state officials have launched a hatchery programme regarding the genetically unique Atlantic salmon (and other salmonid species) of Koitajoki (YLE, 2019). The migratory whitefish (*Coregonus lavaretus*) population of Koitajoki (another endangered salmonid of the river) is sourcing most of the stocking programmes in Finland from the basin (Mustonen & Mustonen, 2018). This highlights the role of Koitajoki stocks at the national level.

Governmental actions have focused on the returning mother fish that numbers from 50 individuals (early 2000s) up to 275 in 2019 (YLE, 2019). No fish ladders have been constructed on the three power plants. Environmental authorities have been in dialogue with the powerplant owners over decades on the need for supporting the land-locked Atlantic salmon spawning and life cycle, but no significant actions have yet been taken.

In 2013 a small breakthrough happened when the Supreme Administrative Court of Finland ordered Vattenfall (a Swedish company owning the Pamilo powerplant) to increase the annual and seasonal water flow into the spawning areas in the lower Ala-Koitajoki (YLE, 2013). The court required that during summer (until the end of September) there should be a minimum of 6 m<sup>3</sup>/s for the stream and in the winter (until the end of March), a minimum of 4 m<sup>3</sup>/s.

These actions were interpreted as a “victory” for the land-locked salmon in media. This was connected with the government-led attempts to restore the spawning areas and habitats for juvenile salmon in the lower Ala-Koitajoki (YLE, 2019). These actions have been advanced despite the fact that no alterations have taken place on the Kuurna or Kaltimo lower dams, , which means that access for fish migration is still blocked.

In 2019 a genetic mixing programme was initiated on the Koitajoki salmon (YLE, 2019). Genetic material was sourced from the river Neva (a Russian Karelian river flowing from the lake Ladoga into the Baltic Sea). This was done to enhance the genetic structure of the extremely low-numbered natural stocks. The initiative has triggered a number of opinions and is under public review.

The Finnish government has also enabled closures and restrictions on the gill net sizes and areas in the larger Saimaa system, where the land-locked salmon go out to feed and grow. However they return to the river Pielisjoki, and will attempt to go up to river Koitajoki, but will be blocked by the Kuurna hydropower station. On Koitajoki the traditional river seining was first banned, but later opened for a quota, after it was determined seining helps clean salmonid fish spawning areas suffering from organic loading (Mustonen & Mustonen, 2018).

In 2018 the government initiated a completely new action plan for land-locked Atlantic Salmon (YLE, 2018). The Ministry of Agriculture and Forestry provided over a million euros (total project 2,4 million euros) to construct a one-kilometer long “Laurinvirta”, an artificial spawning area below the Kuurna powerplant. At the same time the power company PKS was given funds to upgrade their generators on the dam. The purpose of the project is to restore, below the dam, an artificial spawning area accessible for the salmon, and then have one of the dam channels transfer enough water to the area to provide for hatching success. Such an “artificial spawning area” below a dam has no equivalent. Nobody has tested this method and thus there is no evidence for effectiveness or latent consequences, compared to the well-researched effects of fish ladders or dam removal.

Governance and restoration efforts for land-locked Atlantic salmon and other salmonids on Koitajoki (and Pielisjoki basin) have been top-down, whether through court challenges, restoration actions (like the spawning areas for Ala-Koitajoki), genetic modification of the stocks or the controversial Laurinvirta artificial spawning ecosystem associated with dam maintenance and upgrades.

The state-led emphasis has triggered alternate and community-led restoration actions across scales on Koitajoki and on the Pielisjoki basin, by the villages and traditional knowledge holders. They are partly responding to environmental damages, partly addressing equity issues and partly and most importantly, to be discussed below, succeeding in system-wide rewilding and restoration of salmonid stocks.

Njåuddam basin is considered of major importance as a natural Atlantic salmon stream in Norway and in Finland (Brattland & Mustonen, 2018). Governance of the river is derived from the Finnish-Norwegian Border Treaty and associated administrative processes. In Finland the Ministry of Agriculture and Forestry, in discussion with the Natural Resources Institute of Finland, sets the quota of harvestable salmon amounts. Metsähallitus, Parks and Forests Finland, the land owner of the basin, then implements (and also has a say in) the number of salmon harvested based on the FI-NO talks. Metsähallitus governs both the gill netting (right of the locals) and the tourist permits annually (Mustonen & Feodoroff, 2013).

On the Norwegian side the salmon governance is subject to the Ministry of Climate and Environment, both for the coastal fisheries and for the Njåuddam river. The Neiden Fiskefelleskap, the local fisheries body, who has the rights to use the small seine (*käpäälä*) to harvest salmon, is the official body setting the numbers of harvests (usually at 1000 kg / a) from the seine and then governs the tourist permits (Mustonen & Feodoroff, 2013).

Finland and Norway consider the Njåuddam basin to be in prime ecological condition. The Skolt Sámi have, due to the special legal context of the Skolt Sámi Settlement Act, to be represented in the governance of the river and salmon (having a voice and one representative). The government reviews the amounts of permits and stocks using expert knowledge (primarily Natural Resources Institute of Finland and Norwegian expert institutions) and alters the quotas based on the yearly outlook.

Regarding climate change, both Finland and Norway are signatories to the Paris Climate Change Accord. The primary aim of these governance actions is to combat climate change and prevent disruptions using emission cuts and policies that encourage curbing greenhouse gasses. Additionally there are conservation areas such as the Kaldoaivi Nature 2000 EU area and so-called “wilderness” areas on the Finnish side, intended to maintain biodiversity of the basin. These are seen to maintain water quality and the salmon and salmonid habitats to secure both sustainable harvest and renewal of stocks. Regional Council of Lapland has, since 2017, zoned the so-called Arctic Railway from Rovaniemi across the Njåuddam basin towards the seaport of Kirkenes as a future transport corridor associated with the “Polar Silk Road” initiatives led by China.

The architecture of the Finnish-Norwegian Border Treaty and national governance of the salmon both in Norway and in Finland has been rather heavily criticized for years, if not decades (Mustonen & Feodoroff, 2013). Skolt Sámi organisations have challenged the narratives of ‘pristine wilderness’, given the large-scale man-made alterations in the basin area, as well as the new infrastructure plans, such as zoning. While the Skolts have a unique legal right to be represented in the Finnish-Norwegian Border Treaty and associated governmental processes, they are seen as a stakeholder, not a traditional owner.



Due to these reasons, the Skolt Sámi organisations and a Finnish research NGO Snowchange established the Njåuddam Basin Collaborative Management Project in 2011 (Mustonen & Feodoroff, 2013), to renew governance (Carlsson & Berkes, 2005) to meet the ecological and Indigenous needs as well as respond to the climate change impacts affecting the ecosystems and the fish in scalable and new ways. The Skolt Sámi have established self-imposed regulations to not harvest more fish than needed per household in order to support mother fish reaching their spawning areas. Similar actions have been conducted by the Neiden Fiskefelleskap on the Norwegian side regarding returning mother fish (Mustonen & Feodoroff, 2013).

In contrast to grass-roots efforts, the Elwha Ecosystem Restoration project was a governmental process with a price tag of 400 million dollars (Mapes, 2013). It was initiated by state and Federal agencies in dialogue with the local communities and the Nəxʷsáʔ áyəm as the two dams came to a need of licensing (Mapes, 2013; Wray, 2015). An alternative – dam removal – was proposed and successfully conducted by 2014.

Already in 1890 Washington State had a legal precedent to require fish ladders in all, but this was ignored by the private dam operators on Elwha. Elwha River Ecosystem and Fisheries Restoration Act was approved by the US Senate in 1992 (Duda et al., 2011; Wray, 2015). Due to opposition of some politicians the purchase of the dams by the Federal government was delayed until 2000. Locally the dam removal (due to the electricity it provided and socio-economic reasons) was heavily debated in the town of Port Angeles. Nəxʷsáʔ áyəm had been in favour of dam removal for decades (Valadez, J. and Arakawa, H, 2015).

A consensus was found both locally and in coordination with the Federal government (Wray, 2015). Dams were removed and additionally large-scale terrestrial restoration projects, scientific monitoring and a full ban of fisheries on Elwha was accomplished by 2014. The dam removal details, whilst not the main point of the report here, were extremely complex and provided completely new scientific results for large-scale ecosystem restoration and combined the use of Nəxʷsáʔ áyəm knowledge (Agrawal, 2002) in tandem with science.

### 3.3.2 Community and Indigenous Responses to the Challenges

Following Huntington et al. (2017) we can try to assess the autonomous and community response spaces in salmon governance and issues across Koitajoki, Njåuddam and Elwha. Huntington and colleagues outline an analytical global review that points to the importance of community-level scale when natural resources, especially fish and rivers, are assessed.

River-dependent communities possess Indigenous, traditional and local knowledge (Agrawal, 2002; Berkes, 1999; Brattland & Mustonen, 2018) of their habitats as well as customary rights and responsibilities regarding fish and their home streams.

Traditional and Indigenous knowledge (Agrawal, 2002; Berkes, 1999) has inherent value and it is owned, used and interpreted by the holders of that knowledge. One of the vital things to understand is that this knowledge is not to be seen only as data on salmon and rivers. Knowledge is a living process and continues to develop. Whereas science operationalizes the world into data-units, Indigenous and other local knowledge cannot be suppressed into data items (Berkes, 1999). This knowledge requires a) understanding of the context of the knowledge, and b) positioning the information from this knowledge into a dialogue with science.

Community-based observations are observations made by Indigenous or other peoples in their particular locations either over time, over space, or even beyond time and space. CBM (community based monitoring) can consist of Indigenous knowledge and local knowledge information but can also be observations about environmental change recorded in visual histories (Mustonen, 2015), forms, mapping, catch statistics, digital platforms and so on. Indigenous and local knowledge (ILK) is a central part of CBM but not the only actions possible. However, in many ways it is the most valuable for understanding change in the local context and over time.

Based on these three cases presented here, it appears that in salmon governance, Indigenous and traditional knowledge and observations, i.e. “earth views”, are either excluded or only form a limited part of the official governance mechanisms of salmon. Yet, community-based and Indigenous-led actions on salmonid fish may constitute major drivers of improvement. Figure 13 demonstrates some of the main customary and Indigenous governance actions (Berkes, 1999) for each basin as relevant to salmon health, habitats and river ecosystems, utilizing the analytical model from Huntington et al. (2017).

Customary Salmon Governance				
Examples				
Location	Action	Agency	Benefit	Meaning to Salmonids
Koitajoki (and interconnected Pielisjoki basin)	River Seining	Village of Ala-Koita	Spawning areas cleansed and maintained.	Reproduction supported.
	Oral history documentation	Villages Selkie, Paihola	TK assessment of hydropower impacts	Baselines of ecology increased
	Jukajoki sub-basin restored	Selkie village	Restored ecosystem and basin recovering	Use of TK and science to support salmonids
	CBM monitoring	Koitere villages	Monitoring of present stocks (rainbow)	Contemporary TK maintained and used
Näätämö	Seining locations mapped	Koitere, Ala-Koita, Nuorajärvi	Ecosystem and salmon histories known	Baseline and meaning of change increased
	Co-management established	Skolt Sámi orgs	Sámi knowledge an equal way of knowing	Equity in governance, 1st time ever
	Baseline of Näätämö produced	NGOs, Sámi	Ecological and climate changes mapped	First-ever full assessment of basin
	Detection of southern species	Sámi, scientists	Early warning signs of arriving species	Implementing dynamic management option
	Detection of Pink Salmon (intr.)	Sámi, scientists	Review of introduced species impact	Primary threat to native species
	Harvest of northern pike	Sámi	Control of salmonid-affecting species	Less predation, less pressure
	Ecological restoration, Vainos	Sámi, scientists	Increased temporal and scalar space to adapt	Spawning and juvenile areas recovered
	Self-limitation of harvests	Sámi	Mother fish reaching headwaters	Better and more spawning success
	Detection of algae blooms	Sámi, scientists	System-affecting vegetation changes seen	Warning for loss of habitats and quality
	Elwha	Nax <sup>w</sup> sá <sup>l</sup> áyám opposition to dams	Nax <sup>w</sup> sá <sup>l</sup> áyám	Equity addressed over a century
Dams removed		Nax <sup>w</sup> sá <sup>l</sup> áyám, Feds	Restored access and habitat	System restoration for all species
Self-limitation of harvests		Nax <sup>w</sup> sá <sup>l</sup> áyám, USPS	Support early recovery	Speedier return of species
Purchase of 'new' lands		Nax <sup>w</sup> sá <sup>l</sup> áyám	Rewilded basin lands	Connected terrestrial and aquatic systems
	Re-emergence of sacred sites	Nax <sup>w</sup> sá <sup>l</sup> áyám	Resurgence of Indigenous knowledge	Sacred relationship renewed

Figure 13. Indigenous and Local Knowledge (ILK) governance examples

### 3.4 Discussion

Salmon management on rivers Koitajoki, Njäuudam and Elwha take very different forms due to the ecological and socio-historical contexts of the basins. In all of these sites humans have caused either direct (ecosystem alterations) or in-direct (climate change) drivers of change over the past century.



Figure 14. River seining on Koitajoki river. Photo credit: Tero Mustonen.

If the general indicator of success for salmon management internationally is seen to be healthy, naturally reproductive stocks, equitable governance and sustainable harvests (summarized from (Duda et al., 2011) where applicable, we can try to assess success (or failures) both in formal and customary / Indigenous contexts in the cases of this report.

On Koitajoki the past ecosystem alterations and on-going industrial land uses in the basin and stream have eliminated the once-healthy, unique land-locked Atlantic salmon stocks. Government-led actions have included court victories on water flows, genetic enhancement of stocks, ecosystem restoration of spawning areas, catch limitations and most importantly and costly, a completely new and untested model of experimental artificial ecosystem construction.

The primary need – restoration of access by mother fish to their spawning areas, has not succeeded. This is partly due to the hydro-dam development in Finland has been a specific historical process wherein powerplants have been deeply integrated into the forestry cluster, seen as a nationally crucial and historic economic activity devoid of alternatives. Of special interest here is that even fish ladders are not being discussed as a viable solution.

Traditional governance and fishing practices of the land-locked salmon have been documented in the villages of the Koitajoki and adjacent basins. It is estimated that approximately 33,000 fish reached their spawning areas pre-dams. In 2019 the level of fish reaching the first powerplant was 275. Government-led management has been able to maintain the survival of the extremely endangered stocks through hatcheries and milking of mother fish to this date, whilst the threat of extinction looms constantly.

The village of Ala-Koita, despite a temporal ban, has been able to maintain traditional river seining that secures the spawning areas of salmonids, especially whitefish, from organic loading. Residents of villages of Paihola and Selkie as well as lake Koitere residents have recorded memories and oral histories of the salmon and impact of the dams. Village of Selkie conducted a decade-long full ecosystem restoration, including the basin of the river Jukajoki for renewal of salmonid spawning areas and juvenile fish habitats. Last fish barrier was removed in June 2020.

Jukajoki restoration utilized the traditional knowledge of the villages for baseline and ecosystem assessment as well as the restoration of habitats using science and Traditional Knowledge. Plans for dam removal, or fish ladders and full ecological restoration of the Pielisjoki – Koitajoki system have advanced in recent times led by the villages and NGOs, with one of the aims of these actions being the establishment of a UNESCO World Heritage Area on Koitajoki. The story of the land-locked Atlantic Salmon may yet see another chapter.

Finnish-Norwegian Border Treaty and the national governance of Njãuddam has been seen ineffective and cumbersome from the Sámi and other local perspective for decades. That is why almost a decade ago the Skolt Sámi and NGOs and researchers established the very first co-management project in Finland. New baselines were discovered, arriving and introduced species detected (Pecl et al. 2017), Sámi culture and land uses made visible for the first time (Mustonen 2015) and ultimately the very first rewilding and restoration projects succeeded for salmonid fish habitat renewal and spawning areas (Mustonen & Feodoroff, 2020).



*Figure 15. Fully restored Kirakkakoski stream, Njåuddam. Photo credit: Tero Mustonen.*

Central to the agency of the success of Njåuddam were the Sámi women in leadership positions that designed and implemented the frame of the co-management. Male Sámi co-researchers and participants complemented all actions. Brattland and Mustonen (2018) in their review of what constitutes success in Atlantic Salmon management and Indigenous communities state that much of the Njåuddam success is also due to the “undefined spaces” of Indigenous knowledge and how the Skolts were able to use it for creative, unexpected (in scales) and previously unknown ways not only to implement management models that address climate change and stock declines (monitoring, self-imposed limits, increased harvest of predator fish) but also to undo damages of over 50 years (ecological restoration of Vainosjoki).

On Elwha, the early analysis of governance of salmon is complex. Already in late 1800s Washington State demanded fish ladders to be built into dams. Yet, two large private dams, unheeding of the state demands, were constructed in the early 1900s. Nəxʷsə́ł áyəm, the Indigenous people of the river, had been depending on Elwha for millenia for social, ecological, spiritual and cultural well-being and health.



*Figure 16. Post-dams, new ecosystems emergent – the former reservoir of Elwha, now a restored river course for salmon. Photo credit: Tero Mustonen.*

Once the licencing of the dams emerged as a relevant issue on Elwha, both the Federal and state authorities as well as local population of Port Angeles ultimately agreed on dam removal (Mapes, 2013; Wray, 2015). Nəxʷsəl' áyəm had been resisting the dams for decades and believed that they will ultimately come down. The Elwha River Ecosystem and Fisheries Restoration Act from 1992 resulted in a dam removal that restored access and habitats in 2014. Since then, salmonid fish, especially anadromous stocks have started to return to the river, with steelhead populations being hailed as one of the key successes so far.

The role of Nəxʷsəl' áyəm has been instrumental in the salmon governance both on tactical and strategic levels (Wray, 2015). Their continued opposition to the dams between 1910s and 2010s was a key stimulus in national debates on dam removal. Nəxʷsəl' áyəm of course understood that their traditional Indigenous governance of the Elwha had been replaced in 1800s and early 1900s with the US management. Additionally Nəxʷsəl' áyəm saw and continue to see the Elwha as a life-giver and even as a location where they emerged as a Nation, meaning that their sacred locations are on the river and former reservoir spaces (Mapes, 2013).

On Elwha, due to both dam removal and habitat rewilding, it can be assessed that salmon management (including monitoring) is a rare success, combining Nəxʷsəl' áyəm knowledge and science under a well-funded and thorough process. Elwha basin is mostly intact. It has shown that if dam removal is one of the restoration actions, where applicable, marked ecological success and reversal of negative impacts can happen on salmonid rivers.

Nəxʷsáʼ áyəm (Valadez, J. and Arakawa, H, 2015; Wray, 2015) have also tried to influence the survival of the Pacific Salmon both using Indigenous mechanisms (first salmon ceremonies), as well as using their treaty rights and statements. The Pacific salmon governance is a complex interplay between the US and Canada, between Indigenous, recreational and commercial fisheries and ultimately the swings and shifts of one of the most complex ecosystems in the world – the Pacific Ocean itself. Climate change is seen to be a major complex negative driver both at sea and on Elwha, affecting water cycles and rainfall, a central element of the coastal rain forest ecosystems of the Nəxʷsáʼ áyəm homeland which is the Elwha basin.

Customary, community governances of salmonids and salmon especially are complex destroyed/suppressed-emergent/recovering systems that have been recognised in treaties, rights and management in a range of ways in national and local contexts. Due to the disruptions of the colonial era(s) not all customary governance was successful – poaching, greed and overharvests are sadly documented often on Koitajoki/ Pielisjoki, Njāuddam and Elwha over the past decades, also in ways where community representatives have been involved.

We should explore these sites and acts of disruptions and not shy away from the complexities by simply pronouncing them ‘wrong’ as seen from a classical conservation viewpoint. Poaching may have been a way of maintaining rights when none were recognized. River seining on Koitajoki was first banned as it was seen as an absolute overharvest of salmonids. It was only through a dialogue with regional authorities and the fishermen that a discovery was made – seining cleanses the spawning areas of whitefish and other salmonids affected by organic loading from peat mining, ditching and forestry. Whilst customary governance may not yield immediate or all-encompassing success or answers to all salmonid issues at once it can over time and in parts be a strong method of detection and solving of so-called ‘wicked’ problems.

### 3.5 Final reflections

Very few species trigger as much debate as salmon, whether it is the Atlantic, land-locked or Pacific species. Equally so, Nəxʷsáʼ áyəm and other “salmon nations” (Valadez, J. and Arakawa, H, 2015) have developed millennia of survival strategies around salmonids. Often, a clash of governance between state/official and customary-Indigenous systems persists.

Embedded in the customary system, the role of Indigenous knowledge and local knowledge can be seen as inherently valuable, (often in themselves endangered ways of knowing the world), as roots of critical place-based understandings and awareness of salmonids. This could lead to a central (but not the only) part of CBM actions involving co-production of results and observations to enter into a dialogue with science where convergence and divergence are documented and assessed, including interpretations of IK systems for meaning and significance, instead of dismissal as often happened in the past.

As Huntington et al. (2017), Brattland and Mustonen (2018) and Mustonen and Feodoroff (2020) amongst many others point out, the central node of problems for salmon management is *the agency*.

#### ***Who decides, and how, and in what manner?***

Nəxʷsáʼ áyəm, Skolt Sámi, the Kvens and villages of Koitajoki (and Pielisjoki) have maintained and even advanced actions to conserve and maintain salmonid stocks and habitats on their own. Depending on the temporal and spatial frames, these actions have been rejected (seining bans, dam construction), ignored as irrelevant to larger society or embraced in dialogue with science (Dam removal, catchment area restoration).

Most importantly, if seen from the community perspective, the dynamic direction of the customary salmon management has been clear: if the aim is survival of the people and fish, governance must cross the tumultuous waters of modernity, science, co-management and Anthropocene. In this process, Indigenous and traditional knowledge serve as a compass and deep, complex and myriad co-habitation with the salmon is the ultimate aim.

## 4 Talks from the 2022 International Indigenous Salmon Peoples Gathering

In the fall of 2022, the SALCUL project convened a delegation of participants from the SALCUL project group, and the Deatnu and Namsen river regions to participate in the International Indigenous Salmon Peoples Gathering in Vancouver, October 1<sup>st</sup> to 3<sup>rd</sup>, 2022 (see participant list in Appendix II). The Gathering was co-organized with the Centre for Indigenous Fisheries (UBC) and the Unama`ki Natural Resource Institute (Nova Scotia), the Sami Parliament of Norway, the First Nations Fisheries Council, the Vuntut Gwitch'in and Musqueam First Nations, and the Nuu-chah-nulth Tribal Council. The SALCUL project's participation was funded by the Norwegian Research Council, and the Sami Parliament of Norway supported the participation of Sami Parliament and some of the Sámi participants to the Gathering. North American and other international participation in Vancouver was particularly supported by the MakeWay Foundation.

Around 70 participants who had been invited by the organizers convened at the beautiful premises of the Musqueam Cultural House on the banks of the Fraser River. A summary of the content of the Gathering can be found at the webpage [www.iispg.com](http://www.iispg.com) which also contains an interactive StoryMap, powerpoint presentations, and links to video recordings of the presentations.

The International Indigenous Salmon Peoples Gathering aimed to create a safe and welcoming atmosphere for Indigenous salmon peoples, by bringing together scientific work and community concerns around salmon as ecological and cultural keystones for the peoples present. This was reflected in the artwork created specifically for the Gathering, which was inspired by the interconnectedness of salmon and people (githoon= salmon people). The Salish design elements reflects the characteristics of the five Pacific salmon species of the Salish Sea.<sup>6</sup> A graphic artist worked throughout the two first days to summarize impressions and take-aways from the talks and discussions at the Gathering, which in total provides an inspiring, complex and rich picture of the stories shared, the concerns discussed, and the solutions that were dreamed up during the Gathering. The delegations of peoples that met were afterwards asked to evaluate the Gathering and to suggest future activities for the network. Most agreed that just having an arena to share common experiences and histories with the colonization of Indigenous salmon management systems was powerful in itself. Whether the network should lead up to a common statement or a more permanent organization was left unresolved at this first Gathering, and to be followed up in the future. In the following, the talks from the Sami delegation are reproduced.



Figure 17. Naut' sa mawt Event Management welcomed the participants to the Gathering.



Figure 18. Graphic artist Sam Bradd drawing summaries of the sessions.

<sup>6</sup> For photos from the Gathering, see the webpage [www.iispg.com/photo-gallery](http://www.iispg.com/photo-gallery)

## 4.1 Welcoming speech

Ms. Silje Karine Muotka, president of the Sami Parliament of Norway

*Buorit olbmot, dignities, participants – luossaberosteadjit – You who hold our precious salmon high.*

First, I want to say *ollu giitu*, and that I am deeply grateful to the Indigenous peoples that are welcoming us all to their territories, the Musqueam nation, the Squamish nation and the Tsleil-Waututh nation. I know the coast salish peoples are diverse and that their knowledge and spirits are remarkable, I am grateful for all the teachings I did receive when I was here a period for over 25 years ago as a student.

I also want to share that we, the Sámi people, are devastated by all missing and murdered Indigenous women and the genocide of Indigenous children in residential schools. All of the pain and tears from residential school survivors, all the Indigenous mothers, fathers, siblings, extended families and the Indigenous world are crying.

I bring greetings to You all from the Sámi parliament in Norway. A Sámi delegation has travelled across the world to meet other Indigenous brothers and sisters to share our views and ways of living with, from and for the salmon. These three days we have experienced that our situation unfortunately is echoed by other Indigenous salmon peoples.

The dramatic decline in salmon has brought the situation that we cannot fish as we used to, and this affects our livelihoods in so many ways. The big salmon rivers in our area have been of the richest in Europe and have given us life for generations. Even though we have had strict and increasing governmental regulations from two states, the situation has worsened to this point where we cannot fish in some of our rivers. It is also devastating that this has brought us a challenging public debate where everybody points towards other as the biggest threat to the salmon.

I know you know much about the salmon. I know you will share your knowledge the forthcoming days. I ask for respectful discussions. It is a gift when someone will share their knowledge, and this gift should be accepted with gratitude. To see the whole, to understand how mother earth is interconnected and be blessed with the bird's perspective is not something we can achieve without sharing the knowledge.

As an Indigenous leader, I also must learn and listen. I know that my people are dependent on the salmon. I know our language, our culture, our knowledge, our sacred and ancient ways of pay tribute to nature and our skills has been disturbed heavily. As mother earth herself we also strive with revitalization, strengthening and to adapt for a rapidly changing future. I know that seldom we are offered place at the decision makers table. Even though we have knowledge built from living in extreme climatic areas where few others have been living – our knowledge is not respected or sought.

Indigenous people's rights are a part of human rights and if we are denied a future for our culture, it is a breach of human rights. That is why I must ask why Indigenous peoples don't sit at every table where research is done, where decisions are made. The Sámi parliament in Norway has been observer to NASCO meetings for some time now. But I must ask, are we really part of the decision- and policy making, or are we just allowed to share our thoughts and watch?



The intergovernmental science-policy platform on biodiversity and ecosystem services has published a report where they point out that areas where Indigenous peoples are living are threatened. Both peoples and the nature herself are threatened. In areas where the Indigenous peoples are heard and participate in policy- and decision-making and management the biological diversity is in a better situation. This means that if we incorporate Indigenous peoples in research, policy- and decision making and management this can be a crucial factor in ensuring mother earth and our common future.

I wish you all the best in these days of knowledge sharing and I would like to encourage you to pay attention when the messages from the International gathering of Indigenous salmon peoples are presented. In my opinion something like this session should be organized every time there is meetings in the North Atlantic salmon conservation organization at all levels. I truly think this brings new and important aspects to the challenge of ensuring the future for the salmon and peoples.

*Ollu giitu – thank you for the attention!*

## **4.2 Key Issues and Knowledge Gaps in Circumpolar Salmon People Research with a Focus on Salmon River Management in Sápmi**

Camilla Brattland, MacKenzie Kermoade, Steinar Pedersen and Tero Mustonen.

### **4.2.1 Introduction**

[Camilla Brattland]

The first item on our agenda today is Key Issues and Knowledge Gaps in Circumpolar Salmon People Research with a focus on salmon river management in Sápmi. I have a group of people with me and I ask Steinar, Tero and Mackenzie to come up to the podium together with me. I will start off with the introduction in just a few moments.

(..) My name is Camilla Brattland I am an associate professor at the UiT the Arctic University of Norway at the University Museum. I am going to talk about some issues and knowledge gaps in Circumpolar salmon people research and I think it's a nice way to start off this to give you an overview of the field.

Together with me I have three other presenters and I will present them when they are coming up to do their parts of the presentation but first up I will start with talking a little bit about previous salmon people initiatives. This international gathering of the salmon is not the first initiative to try to gather salmon peoples from around the Circumpolar region. There have been mainly other regional attempts and I would like MacKenzie, now, to come up and join me and we will talk a little bit about these previous initiatives.

### **4.2.2 MacKenzie Kermoade**

In the early phases of planning for this gathering, a couple of months ago, I wanted to make sure that, while the planning team was coming together, we were not going to duplicate any kind of past initiatives. Since I'm from this region I wanted to look at some of the initiatives that have happened in the Pacific basin that have sought to collect and amplify Indigenous voices around salmon. I looked at three initiatives that happened between 2005 and 2015. My objective of this review was to examine their structure the scope of their participation and the outcomes that were generated at these initiatives and then see what we could learn for the international gathering of Indigenous salmon peoples here today.

The first initiative that I looked at was a conference that happened in Kamchatka in 2008, that was co-organized with the United Nations development program and two environmental NGOs in Kamchatka (UNDP, 2008). It seemed to dovetail with two initiatives that the United Nations development program had ongoing at the time. The English language material was a little bit scarce, so it was difficult for me to sift through, but it seemed like the project had a real issue with meaningful and legitimate engagement with the [Indigenous] people there and that was definitely a failure that could have been remedied with better participation.

The second initiative that I looked at was a book that was published in 2015 entitled the 'River of Salmon Peoples' (Armstrong & William, 2015). This book collected conversations that happened along the Fraser River watershed with First Nations there. After a series of consultations that took a couple of years prior to the book's publication, there was some thematic curation of what folks were saying about salmon and their relationships to salmon in chapters. But for the most part I think the interesting thing about this book is that it collected in an unfiltered way the voices of salmon peoples.

And the third initiative that I looked into was an environmental and anthropological anthology entitled 'Keystone Nations' edited by Benedict Colbi and James Brooks and published in 2012 (Colbi and Brooks, 2012). I'm sure lots of us have come across this book. It's pretty seminal in this field and it collected chapters from 10 research specialists focused on eight ethnographic case studies about people and salmon in the Pacific Rim. It came out of a seminar that was held in 2010 in Santa Fe in the U.S state of New Mexico. It was a good starting point, but I think the critique to be had now, especially in 2022, as a matter of representation. Obviously no book can be exhaustive, and we've seen in this room just how long it takes to make sure that everybody is heard and that their voices can resonate in a meaningful way. It takes time and not every book can capture everything. But you're going to need books to contain the voice of every salmon people across the Pacific, let alone across the salmosphere and the multiple hemispheres that we're working with. I think the geographical scope might have been lacking. There's not as much that could be done about that as the lack of representation in authorship. Out of 10 researchers who contributed to this book, it seems that only one self-identified as Indigenous and that seems like a real problem. My takeaways for organizers of events like this is to be as broadly representative and directly representative as possible. Not only casting your net geographically in a wide way, but making sure that the net is reaching people directly who are engaged in Salmon management and are themselves Indigenous salmon managers. An argument that might have been used in this curation of perspectives for 'Keystone Nations' (Colbi and Brooks, 2012) was that 'there weren't enough Indigenous salmon voices.' But hearing the amount of salmon voices in this room in the past couple days, it's obvious that that couldn't be further from the truth, and those voices have always been there. Thanks.

[Camilla Brattland] Mackenzie Kermoade is an International Environmental jurist who specializes in Climate law and Law of the Marine Environment. She has a Master of laws from the University of Edinburgh's Global Environment and Climate Change program. I'm really happy to have worked together with MacKenzie to gather this overview of salmon people initiatives and you can also read more about her presentation that she has now in a paper that just came out in August (Kermoade, August 2022).

### 4.2.3 Camilla Brattland

What our panel will talk about today: What are key issues in Salmon people research?

First, I will talk a little bit about two key concepts that I think we all are concerned with:

- Indigenous participation in self-determination in salmon management, and;
- Indigenous participation in knowledge production

First, I will start with giving you a little overview of a review that we did of literature in the field and then we will have two cases to locate Sámi salmon people from the Deatnu and Njåuddam rivers that will end our presentations. For the SALCUL project that I'm a part of and that was also one of the initiators of this academic seminar we did a review, me and my colleagues, of literature. And to do a review you'd need a theoretical standpoint and some analytical concepts to think with. As for myself I'm a coastal Sámi. I'm also an Associate professor in Sámi culture history and research at the Norwegian Arctic University. What I bring to this analysis is really an attempt to try to think about: what does participation mean from all kinds, not only a Natural Science perspective a Social Science perspective, but to try to bring together different disciplines in thinking about participation. So when you think about participation it can mean many different things for the review we try to come up with some typologies of participation in management. As you can see on the slide here, if it's possible to turn the lights down in the room it's also easier for the audience to see the slides. At a lower step of the ladder, and this is just adopted from Sherry (Phyllis) Arnstein's paper from 1969 (Arnstein, 1969), the lowest ladder of participation is exclusion or informal participation. That people do not participate in state-led management.

Second, it could be anything from tokenism to being ignored to just being paid lip service in state management processes. Co-management is a concept that's very popular and often and ideal. But throughout the discussions we had the last days, I think that this is also more and more being questioned as opposed to when it comes to Indigenous peoples representation in management that we should have self-governance. Where you could kind of place or typologize yourself or your case or your people depends on a range of issues. But one key dimension could be, I think, Indigenous empowerment in Indigenous state relations. So, it depends on the degree of power, equity, degree of recognition of Indigenous rights, and jurisdictions in each case where you would place yourself on this ladder.

When it comes to knowledge production, how can we think about participation in knowledge production for salmon management? Within the Western science integration model you could think about participation as trying to integrate traditional knowledge for instance with Natural Sciences. With some biological salmon conservation perspectives for instance. But there are other ways of thinking about participation as well. In the multiple knowledge systems approach we have concepts such as:

- Two-Eyed Seeing (Marshall & Bartlett, 2004)
- Weaving of knowledges (Tengö et al., 2017)

There is a difference between these perspectives in the sense that the Two-Eyed Seeing approach focuses on the inclusion of Indigenous knowledge and Western science, while the multiple evidence-based approach (EBM approach) recognises a diversity of scientific and non-scientific knowledge systems which includes the knowledge of not only Indigenous peoples and natural science. You could also think about moving beyond participation and actually thinking about co-production. And here again the key dimension is the power differences in Indigenous knowledge and Western science relations. Here, I try to visualize the degree of equity in power next to Maria Tengö's concept of diverse knowledge systems. Trying to show that where knowledge systems are furthest apart there is a greater degree of inequity in knowledge production for salmon management. And we strive towards equity between different knowledge systems.

The research group for SALCUL project, which is an abbreviation for salmon and culture it's led by the Norwegian Institute for Nature research (NINA) in Norway and funded by the Norwegian research Council, searched the web of science for literature with search terms such as salmon, Indigenous knowledge and participation in the period between 2000 and 2021; published in that period. Our search resulted in 83 peer-reviewed articles and we went more into 38 relevant cases.

Not only papers but also special issues such as 'Alaska's salmon and People' by Carothers and colleagues (Carothers et al., 2021) and edited books like the 'Keystone Nations' (Colombi & Brooks, 2012) were also part of the review. There were some papers that were most cited such as Julie Raymond-Yakoubian's et al. paper (2017) on 'Incorporation of traditional knowledge into Alaska federal fisheries management'. And the literature in general is of course dominated by North American and North Pacific literature but there is an emerging body of literature also from our region: from Sápmi. One of the reasons for that knowledge gap in the literature is of course that we are not native English speakers, and therefore publish a lot of literature in other languages than English, but this review was only directed at English language literature.

If I go back a little bit: this table shows an overview where we try to place the different cases in the papers on the ladder of participation. There are some good examples like Colombia River, Athnorco River, the Haiduk nation, and I will also point to our own example from the Njåuddam which Tero will talk about later. But in general it's really hard to do this exercise, I will show it now, but I'm not sure that we'll actually go into the paper. But in general it's easier to place cases in the middle stages of participation rather than in high or low. But some cases are really easy to point out as being on the lower step of the ladder which they now will talk about in the case of the Deatnu River.

So, where are actually Sámi salmon people on this ladder of participation? And we can think about participation at different scales international, national, and local. At the international and national level of participation you could say that in the case of the Norwegian Sámi, the Sámi Parliament has participated in NASCO as observer since 2010. They also consult with the Norwegian government on national salmon regulations. They struggle to consult on farmed salmon policies. But there is no Sámi participation in knowledge production such as in national salmon scientific boards such as the scientific board for salmon research: Vitenskapelig råd for lakseforvaltning (VRL). Then when we come to the local or bilateral level we can start to think about Sápmi salmon rivers and people. Now, I will turn to Steinar and Tero to present our two rivers which, I hope you understood by now, we can categorize as being all over the scale of participation. The Deatnu river in many cases on the bottom of the ladder and Njåuddam or Njåuddam on the top or in the middle. Deatnu means big river in Sámi language and you can also think about it as the mother of rivers. It's the largest Atlantic salmon river in Europe. The main difference between these two cases is that there is no particular recognition of Sámi rights on the Deatnu river where there is a recognition of Skolt Sámi rights in the case of Njåuddam. Which really has an impact I think on the way those cases can move up or down that ladder. This is my last slide before I give it over to Steinar and Tero.

In general, to sum up, you could say that there is a degree of, when we think about what gaps and issues are there in the field. In general you could say that there is:

1. Lack of an international forum for local and Indigenous fisheries and salmon peoples at the international level
2. In our case, for the Sápmi, it's a lack of recognition of Indigenous fishing rights and jurisdictions with some exceptions
3. There is a lack of formal participation of traditional knowledge holders or experts in national and local scientific fora
4. and there is too little research, which we heard from many of the discussions over the two days that we had together, on other rivers than the "iconic" large salmon rivers

I would try to think about this also in terms of empowerment equity and inequity. I will then give the floor to Steinar he will talk about the Deatnu river. And Steinar, he is born in 1947, he is a Sámi historian, lives and works in the sea Sámi community of Denodat. During his career as a researcher at the Nordic Sámi Institute he has researched historical Sámi fishing rights and currently works on topics concerning Sámi rights to use natural resources according to common law. He has been a Sámi Secretary of State, a political advisor to the Norwegian Minister of Local Government and Regional development. He is also a former member of the Sámi parliament of

Norway and the Regional County Council of Finnmark. He is a respected elder, both locally and regionally, and for this gathering he speaks also on behalf of the Deatnu coastal and river fisheries management group which we heard from yesterday. Steinar, I will give the floor to you. Leage buorre.

#### 4.2.4 Steinar Pedersen

Good friends. Yesterday, Benn Larsen, the chair of the board of the Tana fishery management, told us that in 2021 and 2022 there has been a total ban on fishing salmon in the Tana river, and in the Tana Fjord, and in the coast, West and East of the Tana fjord. And that's something which never has happened before. But I have heard no, I have seen no signs of them from no tokens from the Norwegian and Finnish authorities, I have not seen that they are taking any responsibility for the situation because they are the sole ones who are responsible for what has happened. The state authorities of the two countries, the ministries of the two countries are those who are in charge of making all the rules for fishing in the Tana River. And we have regulations concerning both the research and the management of the renewable resources.

I remind you of the convention on the U.N Convention on Biological Diversity, and in Norway we have the Nature Conservation Act which both are stating that the basic knowledge of the management should be biological research and traditional knowledge. But I'm not quite sure whether, well I am sure that those principles aren't followed. When you talk about the thirty salmon stocks of the Tana river the traditional knowledge is totally set aside. And if we look at the history of the Tana river we can see that the Sámi people along the river has had many, many different ways of keeping especially the predators at the low level and I think that the predator situation in Tana now is one of the main reasons why we have come up into the tragic situation we are. Because the predators, the last 40 or 50 years, there is a ban on regulating the predators. You are a criminal if you shoot the different birds for example goosanders ("salmon ducks") which eat salmon juveniles in a great quantity. And it's forbidden to take eggs from those birds as people did earlier which was also an important food supply. The otter, an expert to catch grown up salmon, has been totally protected for exactly 40 years along the watershed. And the seal, as many of you know, is also an outstanding salmon hunter but it has also been it's also 40 years being defined as a holy creature. And why? In 1992 the estuary of the Tana river was made a nature reservation area and since then it has been forbidden to hunt the seals there and now there are many hundreds; between three and five hundred seals gathered in the estuary area in and in 2022 there were something between 15 and 20 hundreds. There's been an enormous increase. And the goosander has for hundreds, and hundreds of years, as I mentioned, been known as a fierce enemy of the juvenile salmon and during the summer many of them are along the upstream of the watershed but at the late summer, early autumn, 20 to 30 thousands goosanders also flock and crowd in that estuary area. But they are forbidden to hunt. And in early times not only salmon, but also other species of fish was the diet of the Sámi's along the river: it was the pike, sea trout, grayling, burbot or eelpout and perch. And most of those are effective predators on juvenile salmon. But in the post-war period it has been imposed strong limitations on using nets with smaller meshes and that's made it impossible to keep down the different stocks of the mentioned species. And they have increased the predation on juvenile salmon. So today you have an enormous increased number of a wide range of predators waterborne, airborne and land borne. And the researchers and the authorities are not able, or they will not see, the negative effects, the total effects, the gathered effects of all this.

And here we are at the main crashing point when it is about the management of the Tana river. The biologists, which the managing authorities of Finland and Norway rely on, deny that predators have any negative impact. I have noticed some sayings from them and in one of the reports they asked is predation a threat for Tana salmon stocks? No. The shortest, simple answer to this is "no": predation as a mechanism simply does not work in a way that would allow for a negative stock development caused by increased predation. And, also, they claim that the Tana river has not been affected by any technical encroachments, like hydroelectric plants or things like that. Therefore the river is in a natural balance and the predators and the salmon have adjusted themselves to each other since the last glacial period eight or ten thousand years ago.

And for that reason a predator control will do more harm than use. I could accept the postulate that predation that does no harm if the natural environment never had been influenced by man. But when was the natural environment in a real balance since the fall of man? Never. Because when Eve and Adam checked out the paradise they started the survival struggle of mankind and what has been one of the main elements of that struggle? Yes, it has to keep at the lowest possible level ever: all the fish, birds and animals which competed with man on the same available foods, the resources which man also would like to have. And man has been present along the Tana river and has been fishing salmon for at least 6 000 years, and by the way, we have about a thousand different Sámi words concerning salmon and salmon fishing. And the Tana river is therefore an outstanding example of the struggle which followed the fall of man but now we are forbidden to struggle or to fight other predators anymore. And it looks like the predators are winning. And traditional knowledge is totally set aside as a basis for management of the Tana river. So we really need assistance from Indigenous communities and the international society to open the eyes of the Finnish and Norwegian authorities. Thank you very much for listening.

[Camilla Brattland]

Now over to our next case, so it's going to be about the Njâuddam river and we will welcome Tero Mustonen to the stage. Tero is a Finn. He is our ally. He's the president of Snowchange. I believe you will talk a little bit about Snowchange, your organization. I will also say that he is a winter seiner and an Adjunct professor in Human Geography at the University of Eastern Finland and has been working in Alaska, Canada, Greenland, Iceland, Sámi territories as well as Russia North since 1999. I will stop there and give the floor to you, thanks. And could the next presentation be uploaded to the screen, please.

#### **4.2.5 Tero Mustonen**

Tervetuola, we greet you, the Musqueam Nation, where we are situated today on this extremely important event. I want to recognize all of your traditional territory, your rights, your ancestors and as a Finnish person coming from a small village of Selkie, we greet you. Let me also recognize at the very beginning of my presentation Grand Chief, former lieutenant-governor of British Columbia, chancellor Steven Point. I thank you for the past 20 years of working together and I bring you greetings from your Finnish family, friends and let me also offer our best of greetings and recognition of Gwen, the family, the Skowkale and all of the good people up the river. You are a brother to us and we salute you. I also want to extend our greetings to the Sámi people. It is of utmost humble position to be a Finnish person speaking in front of you today. Steinar Pedersen, I thank you for your presentation. I greet very quickly also the Sámi parliaments that are here, Sámi parliamentarians and the president of Sámi Council: Aslak Holmberg. He's also a salmon fisherman, a young leader who's standing up for exactly the kind of things that elder Pedersen was talking about. Camilla, thank you for having us. And finally I bring you a message from the Intergovernmental Panel on Climate Change, IPCC, where I had the privilege of leading the Arctic and European chapters for the past five years. And as a part of that mandate I tried to incorporate salmon Indigenous rights and knowledge to the work that the panel was doing on climate change to the best we could.

I'm standing here together with many Skolt Sámi representatives who couldn't join us. I'm just a vehicle of communications but they are leading the work on Njâuddam, Njâuddam river. First and foremost in this line you are seeing the face and the smile of one of the elders Vladimir Feodoroff who is leading the work with Snowchange and the Skolt Sámi people with his daughter. More about that a bit later.

We are traveling across the ocean with a delegation from Snowchange. You may ask what is Snowchange? Why is it called Snowchange? Who are we? That is Laurie, Lauri Hämäläinen who is on our table. He is a young salmon fisherman. Salmon fishes are coming to him on the ice and he is one of the future of how Karelian and Finnish communities are trying to maintain all that we are talking about. Despite not being Indigenous peoples but having local knowledge. We are also joined by Hannibal Rhoades from the Gaia Foundation who is restoring a salmon river in the UK, and Rita Lukkarinen, who is our key visual artist.

The Sámi, Fins, Karelians, Nenetses, Komi, and Khanty are part of the non-Indo-European languages of our part of the world. This is a very quick map of who are we. Some of these peoples, and rightly so, have the status of Indigenous peoples. Snowchange will continue to honor and support all of those Indigenous rights. However our context is rather unique for the past 10 000 years. From Western European peoples all the way to Northern Sweden, these Finno-Ugric Nations have depended on exactly what the grand chief Point was saying: the salmon and her relations. And in all of those Nations long history, at some point in time, despite the losses, there was the key central notion of respect. And that's what we are trying to rebuild and bring you today. You will hear from the Sámi themselves. They are reindeer people, they are salmon people and they are people of their Indigenous world. I will not talk about on their behalf but I want to introduce the two key other presenters who couldn't be here because of health reasons. On the left former president of the Sámi Council Pauliina Feodoroff, and, again as mentioned, the elder Vladimir Feodoroff, who are leading the Njåuddam river core management work for the salmon and climate change with Snowchange.

I will give you a very quick overview of what are we doing, and why it's partly working, what is the key to the survival this century? One of the things that MacKenzie and Camilla were talking about. How do the solutions look like in the Skolt Sámi and Snowchange context? As we heard before from Steinar, there are no land rights or water rights in Finland to the Sámi. But yet Njåuddam together with Deatnu, Njåuddam is one of the key Atlantic Salmon home streams in the European North. That's how she looks like because the Skolt Sámi in public discourse have called her a mother. There's a very big notion of how the government looks at this same place; it sees this river as pristine wilderness. Yet it has been heavily impacted over the decades by logging, mining, transport corridors, and there's a gap in understanding on what's going on. Therefore the Skolt Sámi's started to think, in 2011 when climate change was starting to hit very heavily on this Atlantic Salmon waters, what to do. And they partnered and formed teams of leaders including Teijo, here on the right and Jouko Moshnikoff on the left, to know the land: what is the actual baseline, where are we in this new century? This is a quote from one of the oral histories from Vladimir Feodoroff and it shows exactly the kind of points of respect through the Arctic and North that grand chief Point was talking about. [Quotes] You can't muck around on the river. (...) Grandmother Anna [of Vladimir] said if there are no salmon, we will cease to be as humans. So when we heard from chief Point talking about the next 25 years, the 50 years, how will the future be? Let me re-affirm from our collaboration with the Sámi the same understanding that: if there are no salmon the people will no longer exist.

I have only two or three slides more, but these are the key points then of what was done based on this realization. And in 2011 the Skolt Sámi came to Snowchange and asked: what are the solutions? How could we fight and ultimately move to a place of health regarding salmon? They decided on the very first full range core management of Njåuddam watershed with us. The first thing we did was to establish land use and occupancy studies: where is the salmon? How are they using the river? In 2013, a decade ago, we were able to present to the world the very first co-management regime for the whole of the river. In effect realizing Sámi rights to salmon for the first time in Finland. In 2015 the political leadership of the Skolt Sámi decided this co-management regime is the way to go forward. And they validated the work that we had prepared for five years with the Sámi knowledge holders. And then we got to work.

Over the past six years we have moved fast to restore habitats, we have scouted where climate change is hitting the hardest, and we have rebuilt resilience, ecosystems, detected new species, published in peer-reviewed high-powered science journals, and moved on also to the forest question. Perhaps one of the most painful questions the Sámi in Finland, as well as the Finnish people that care about the issue, face today is the massive loss of our forests. You know all about that in British Columbia because of the rainforests are gone. Therefore, we have started to explore over the past two years the critical link between old growth forests. We have preserved over 500 hectares and handed over old growth forest systems in recovery to Sámi governance. These are massive realizations of land rights, water rights, and management that have never taken place in Finland before in practice.

And this year together with Laurie leading a team with Janne [Janne Raassina], we have moved on to restore a full spawning lake, the Sevettijäri lake, to expand Sámi Indigenous-led-governance restoration and resilience work to buy more time. What are the results? How is nature responding to these steps? The work led by women, Sámi Indigenous women and men, together with Snowchange, Fins. She has said: "Yes". She has accepted the work we do. Based on the critical evidence on the ground these are some of the first trout and salmon documented in the fully restored ecosystems that were destroyed by the state of Finland for timber floating. After we have four or five years restored and nurtured led by the Sámi back to life. There is no higher proof that I can bring you to this important seminar today, that if you work with Indigenous peoples and the best of science: nature can be a powerful partner. Nothing stands in your way, survival becomes possible, rights are realized, resilience comes forward, and we might have a fighting chance this century.

So, what are the key lessons from our work in conclusion?

We have been able to realize Sámi rights and management through rewarding and action on the ground. Not only legal fights or building institutional capacity. That is the political arm but this is the actual rebirth on the ground. We have found out that there are completely novel new science results. In period with science and also screened by the Indigenous peoples. In the IPCC, in science journals, and many others. I thank Camilla for working with me and the team on some of those critically important messages. Restoration of these destroyed habitats, those 25 streams that grand chief of Point was talking about or in that range, led to a key in realizing how forests are also connected with salmon. And this led to the door of over 500 hectares now being under Sámi governance on private lands. Climate change is severe. We are seeing the massive fires last year here with the heat dome 49.6 C in Lytton followed by torrential rains. To quote chief Point, he saw the Sumas Lake come back to life for the first time, as I recall. Unfortunately, it was an extreme event but our work buys time despite the massive changes. It may bring ecological safety to the people, and place, and the salmon. Some of the Sámi elders including Vladimir waited for 40 years for this to happen. It goes on to say memory matters. Steinar knows about the Deatnu from probably hundreds of years ago through the oral history and Sámi knowledge I would imagine.

Therefore, it doesn't happen in a two-year project. It doesn't happen in a governmental mission quickly. You have to find new ways, and you have to be humble you have to listen, and you have to back down, and not to impose, if you are to succeed and really enable Indigenous management.

The state of Finland and the agencies have agreed in principle to a central first, which is the restoration of habitats. They haven't agreed on all the points in the co-management yet. But they have agreed, as a historic first for the past five years, on the physical restoration and management of these sites. The only people that had the courage to lead all of it, because we are all damaged, we are all scarred, we are afraid. I'm actually very afraid to speak with you. I was super nervous and then Camilla said it's okay. [This] brings to the fore the idea that women had the courage. That lady that I showed you in one of those slides, Pauliina Feodoroff, was the one that told me this is a mission of peace. And I said: "Peace on what"? Peace between the fins and the Sámi. It starts with the restoration, it starts with the salmon, it moves on to the forests, it will move on to peatlands. But ultimately after centuries of conflict, misunderstanding, and different pathways: we may have a peace. At least here. Maybe not the government. Maybe not the agencies. Maybe not the timber companies. But between us, the Skolt Sámi, and Snowchange on this River, on this stone. And only from that, peace can grow. The real peace, that we so urgently need today. When people are dying in Ukraine, they are dying in Indigenous Nations, they are dying all over the world. And we need that peace more than ever before. And that's why I stand in front of you in peace. Thank you. [Applause]



## 4.3 Sámi Salmon struggles: The Right to Know, the Right to Fish

Aslak Holmberg, Joni Saijets, and Juha Hiedanpää

### 4.3.1 Aslak Holmberg

*Buorre beaivvi buohkat, mun lean Skuvlaalbmá Áslat Niillas Áslat.*

Good day everybody, again, looks like I get to speak every day here but why not as I have come so far. We are a few guys here on the stage now and we want to bring a glimpse into Sámi Indigenous knowledge on salmon and salmon research. To form a basis for this I will be sharing some thoughts about:

- what is Sámi Indigenous knowledge on the salmon and river Deatnu. and;
- what kind of challenges, in my view, there are with the collaborations between salmon biologists and Indigenous knowledge holders.

I will be expanding a bit on what we heard Steinar Pedersen speak about earlier today. This is what I try to cover in the short time that I have here. (1) Just a quick look on Deatnu; (2) Then what is Sámi Indigenous knowledge on salmon and Deatnu, and what biologists are explaining as reasons for decline in the salmon stocks; (3) Also we will look at what kind of differences and similarities there are in the knowledge systems; (4) We look into some historic management actions; (5) And some thoughts regarding possible future management actions that could be taken based on Sámi knowledge.

1. Deatnu River is Teno in Finnish, Tana in Norwegian and in North Sámi Deatnu. Now as we have heard many times already it is a major Atlantic salmon River, the biggest one in Europe. It is about 16.000 square kilometres and there are 1.200 kilometres of river where salmon enters. It is also the most diverse Atlantic salmon river in the world. And as you have heard many times salmon is an essential part of our culture and we call ourselves Čáhcegátteolbmot which means people of the water or the people of the shore. One of the pictures in the presentation is from Boratbokča which is one of the major rapids, after a great ice break. We don't have this kind of ice breaks so often anymore nowadays. We have quite a challenging situation in Deatnu and we got strong restrictions for fishing in 2017, which focused on Sámi traditional fishing. And in the past few years we have experienced a strong decline in the salmon stocks and as has been mentioned before for the past two summers we have had a complete ban on the salmon fishery. And what hasn't been talked about so much is that we've had an invasion of new species. Pink salmon is not a native species to our river, but the summer of 2021 it was outnumbering the native species which is Atlantic salmon. We have experienced a lot of abnormal summers and as was called the second slide Change is the new normal. We barely have what could be called normal summers. So, we have floods, we have droughts, high water temperatures. These things impact both the salmon and our fishery. We have more or less lost what was used to be a normal summer.

2. A little bit on the Sámi Indigenous knowledge. Sámi used to govern fishing in Deatnu until the 19th century. Siida is a Sámi village which is a governance structure with a certain area that it governs. Or it is nowadays mainly a historic concept, because at least in my region it's not a functioning organ anymore. But Siida was what organized collective fishing, solved disputes regarding fishing rights, and ensured the sustainability of the fishery that required quite close communication between people in the different parts of the watershed.

I have looked into different studies on Sámi knowledge on salmon, and of course that is the community where I come from, so also bringing that knowledge to this discussion. Knowledge holders raise a variety of issues that impact the salmon such as increased erosion, predation, and tourist fishing has increased. Climate change is a major factor both in the fresh water, and in the ocean. And impacting the availability of the food of the salmon in the ocean, and as well as concerns regarding salmon farming are raised by Sámi knowledge holders.

As we heard in the presentation by Steinar Pedersen, Sámi used to have quite efficient ways of restricting predators of salmon and thus improving the productivity of the river. We used to hunt birds that feed on salmon and juveniles, such as goosanders and cormorants. We used to hunt seals and otters, which also feed on salmon. And also the fishing of other fish species that are predators of salmon juveniles used to be much more extensive than it is nowadays. Often the Sámi knowledge holders have not been in agreement with the biologists regarding the reasons that impact the salmon stocks. And it was just up until a few years ago that the biologists were arguing that only overfishing is a factor significant enough to impact the salmon stocks in a way that they considered that the stocks have been declining. Just in the past few years this line of argumentation has changed, because we have experienced such a strong decline in the salmon stocks that it cannot be explained with overfishing, since fishing pressure hasn't changed significantly whilst an amount of returning salmon has declined very strongly. To put it in other words juvenile production is still rather stable while as the salmon are not returning in the same way as they used to. So this does point to changes in the ocean migration since the salmon are not returning from the ocean. And we don't know the reasons but there are estimates that these are linked to changes in the availability of food or distribution of food of salmon. So, it is estimated that some key food species of salmon, such as capelin, have migrated a couple thousand kilometres North due to warming waters. When salmon go to their traditional feeding areas they don't find food there anymore.

3. So, now I look into some of the challenges regarding trying to combine these two knowledge systems. There is a group of four biologists, two nominated by Finland, two by Norway. And they are the ones who write annual reports on the salmon stocks in the Deatnu watershed. And they are required to take Sámi Indigenous knowledge into account in their research, but as also Steinar Pedersen was pointing out they have quite significant challenges on that. In order for Sámi knowledge to be part of the reports it has to be approved by the biologists. They function as a filter for considering what knowledge is relevant, and what is valid, and then perhaps part of it gets into the reports. If they cannot confirm Sámi knowledge with the methods that they have then they conclude that these are not relevant, or that they are untrue, while it can be quite challenging to prove some Sámi knowledge. The biologists use mainly quantitative methods, so they need data that can be changed into a numerical form so that they can calculate it and then count estimates based on this data. Not all knowledge that Sámi have can be translated into a numerical form, and often qualitative knowledge is not sufficiently estimated in these reports. And some Sámi knowledge could be quantified but it is not, such as a loss of spawning areas, or an increase of the predation pressure for the salmon stocks. So, what the biologists do they fragment the Sámi knowledge system. They try to evaluate each of the concerns individually, one by one, and they do conclude that none of them separately can be a reason for the decline in the salmon stocks that has been experienced. What they do **not** do, is try to evaluate the more holistic, the group of reasons so to say, that the knowledge holders are raising and the cumulative impacts that that might have on the salmon stocks.

4. So, concluding, looking into what issues Sámi knowledge holders are raising and have been raising throughout the years. I see some management actions that could be asked or executed based on this knowledge but what hasn't been done.

5. So, as the main problems seem to be in the ocean and have to do with the availability of food of salmon, it should be considered how can we improve the status of the species that salmon feeds on. And that could be done for example by having stronger fishing restrictions regarding the key food species. Also, regulating salmon farming especially the open net farming in areas where salmon are swimming, which is basically all along the Norwegian coastline. And as it is estimated in Norway, salmon farming is the number one threat to what I call salmon, some call it wild salmon. And then strengthening of juvenile production by decreasing the number of predators and restoring lost spawning and grounds or spawning redds that have been lost due to erosion. And also strengthening the banks of the river to slow down erosion. And of course we do have to regulate fishing pressure because the salmon are not returning in the same numbers as they used to. I think we should fish more other species in the rivers.

Next summer we're expecting a big run of this invasive pink salmon so we should be able to make use of that new very plentiful species that is coming. As well as fishing the more healthier populations of sea trout, grayling and pike. And of course we are competing over the same resources. All the fishers have to share the same salmon stock. We need to give due consideration who can fish and how much, and as was pointed out previously, then the Sámi rights holders should be the first priority when fishing licenses are distributed. Giitu.

### 4.3.2 Joni Saijets

It is an honor to be here. We will be talking about the research project that was done last year. This is on social, cultural, health, and economic impacts of the first total salmon fishing ban at the river Deatnu, in 2021. And we [Juha and Joni] are going to work together for the next four years. Juha Hiedanpää is going to speak hopefully, if he has time, more on that project, but now I'm going to talk about the project Luossa that was conducted last year. And what Aslak Holmberg was referring to on traditional knowledge, also I have conducted in 2015 to 2018 interviews related to traditional knowledge of the whole watercourse on the Finnish side. So, we are five researchers on this project which is the Finnish Natural Resources Institute where I was asked to conduct interviews in last autumn. And as Aslak Holmberg already told then there was the first total salmon ban. And our research objective was to recognize the main social impacts of the temporary salmon ban and create the basis to follow these impacts. Our perspective is policy implementation research, and impact assessment, and they will also follow the Finnish Ministry of Justice' impact assessment. And in addition, impacts on Sámi cultural practices health and well-being were in our research project. Our data and methods include statements from the hearings. Each year when there are new regulations, there are hearings. So, we looked upon those from 2020. And then LOHITA 2018, it is another research project of economic effect impacts on the municipality of Utsjoki. And then our own observations during interviews and during workshops. We had three physical workshops and then four Teams-based workshops and then we had a survey for entrepreneurs in Utsjoki. And most of the interviews I conducted and in total there were 32 men and 10 women. We tried to cover the whole watercourse on the Finnish side. I will not go in detail how many of them. But what we observed were impacts on:

1. Sámi culture
2. Social statuses and relationships
3. Health and well-being
4. Local economy, and
5. Entrepreneurship

And so now we will go through each theme a bit through quotations from the data that we have collected.

1. Effects on Sámi culture. There were four major themes that came out of the interviews: (1) Feelings of injustice (continuum). Like we have heard that states of Finland and Norway have regulated fishing since 1875 on and then Sámi cultural customary law has not been taken in consideration. And of course (2) fear of losing your own culture through the ban, and (3) traditional livelihood and lifestyles were prevented, and then of course (4) health effects.

“Aim of this ban is probably that people will forget their culture” stated a man over 65 years old.

“I'm afraid that all fishing will end in Deatnu. I do not know exactly how the ban will affect us but I am worried that our fishing traditions will end” stated a woman between 40 and 65 years old.

2. And how were traditional livelihoods and lifestyles prevented? Besides fishing, the river has many customary habits and communal ways, for instance that we meet people during fishing and outside of the fishing season. But now when there was no fishing, we did not meet those people that we regularly would meet during fishing season. And also transmission of traditional knowledge to children and youth was prevented now for two years. And traditional knowledge is only transmitted through practices as we know. A few quotes here:

“I have a 10 year old son. He would have wanted to fish like every summer” stated a man between 40s and 65 years old.

3. And then what is very important in the case of Deatnu: During fishing season we do not ask *how are you doing* we asked *Leatgo goddán guoli* which means *have you got any salmon*, but which can be translated as *are you doing well*. But this summer and last summer none of those questions were asked. It is already a huge impact on health and well-being when we do not ask *how are you doing* and we cannot ask *Leatgo goddán guoli* – have you got any fish? And of course elders or older fishers were mostly affected.

“I have been a bit depressed it is really strange that we are not allowed to fish, although the river is just next to us. I have never before experienced anything like this and hopefully I won't again” said a man, over 65 years old.

But not only older fishers experience this. A man under 45 years old stated:

“One will think of escaping [this place]. I was stressed and depressed when I did not know what to do now. I believe it would have been a very difficult summer for me if I would not have been able to fish for pink salmon (in Norway)”.

4. The river authorities had a project particularly on pink salmon as an invasive which this fisher was a part of. And then increase of fear of depression among other fishers as well. And the river is also a place where you can rest, and now when you don't go to the river you don't rest, you don't recharge your batteries, and you don't get to be healthy in that sense.

There are many different ways that everything is connected. Other social effects include:

- Inequality, an increase of inequality among Sámi and Finnish people.
- Changes in the community's way of life and social relations.
- Administrative processes and social injustice. As we have already heard that customary law is not taken into consideration in the management.
- Health effects of trust and influencing opportunities.

5. And then we have not talked so much about economy, but in Finland, also Sámi entrepreneurs sell fishing licenses. Before 2017 there was no limit how many fishing licenses you could sell. In 2017 there was a regulation that only 11 000 licenses on both sides of the river could be sold. So that is why there is this huge drop in 2017. And then of course during 2020 and 2022 there were very few licenses sold. During the ban did the revenue increase or decrease? Most of the entrepreneurs that we interviewed or surveyed, 78.3 %, stated that their revenue decreased. And in the municipality of Utsjoki or Ohcejohka, 4.1 million euros is estimated that the municipality of Utsjoki lost in the first year of the total fishing ban.

I will not go into detail how, and what ways were affected. But tourist licenses, cabin renting and then grocery shopping by others.

### 4.3.3 Juha Hiedanpää

There are two ongoing projects of relevance for the present discussion in the Teno region, the DEATNU and the RecoSal projects (see box 1 and 2). The first project deals with institutional virtues. What is institutional virtues in governance? Whatever index, democracy or quality index, you take regarding countries or states, Finland is always in the top three or top five. So, it is a wonder why Finland fails so dramatically when it comes to wildlife, and now especially to Teno salmon. That is why we took this approach of institutional virtues. Normally this is an individual character: being virtuous. How can institutions be virtuous or should they be? Institutions are collective action. We are trying to understand that and give a push to administration and law-makers, policy makers in Helsinki.

#### **Box 1: Bringing institutional virtues into governance: integrating the scientific, Indigenous and local knowing in Teno river salmon policy and administration (DEATNU)**

Objectives:

1. To organize a transdisciplinary research project in such ways that it positively influences salmon policy making and local livelihood prospects.
2. To identify and analyse natural and social scientific, local, and Indigenous knowledge relevant for systematic understanding of the factors affecting the well-being of Teno salmon, including potential knowledge gaps.
3. To understand the nature and evolution of Sámi Teno salmon management institutions to help improve Teno salmon policy and governance.
4. To indicate the relationship between different knowings about salmon and the formal knowledge requirements in Teno salmon policy making.

And this has been the challenge for us and greatly introduced and explicated:

5. To co-create, test and demonstrate rigorous criteria and mechanisms for ethical and equitable knowledge sharing and integration.

#### **Box 2: Recosal project**

Lead by the Natural Resources Institute Finland (Luke), in collaboration with the Arctic University of Norway (UiT), the Norwegian Institute for Nature Research (NINA), and Umeå University of Sweden. We are doing the same thing, more or less, as in the previous project but now we also have two other countries. And we are looking both from the Norwegian side and Finnish side to the problem. This study aims to support collaborative governance for recovery of diverse Atlantic salmon populations complex in the large river Teno catchment (Tana in Norwegian, Deatnu in Sámi) in the northernmost of Fennoscandia. Through the establishment of a Living Lab, the project connects knowledge production with salmon management, with a special emphasis on the development of population-specific, target-based assessment of genetically diverse salmon populations in a multicultural setting that values Indigenous and Local knowledge (ILK) and rights. [WP1] RECOBAL will provide transdisciplinary work. Again, what Aslak Holmberg just said about these genetics. So, this will be covered in this project.

Bringing population ecology in Work Package (WP) 1, that aspires Bayesian population modelling for assessing the status of Teno Atlantic salmon populations. And here the second subtask is important because there we are exactly trying to do that incorporation of Indigenous Local knowledge (ILK) into Bayesian thinking. How uncertainties and qualitative data could be brought to statistics and Bayesian analysis. [WP2] And through exploring cooperative governance and here we have our Framework for Collaborative Governance (IFCG) that's our starting point. But collaborative governance is basically the starting point. [WP3] And then, how to make things different in practice? That is the third work package.

## 5 Summary and Concluding Remarks

Camilla Brattland and Stine Rybråten

### 5.1 Summary

To sum up this report, we will start with reflections from the IYS (International Year of the Salmon) closing symposium, where a keynote from the Gathering of Indigenous Salmon Peoples (ISP) was presented by Camilla Brattland, Andrea Reid, and Shelley Denny, three Indigenous researchers central to organizing the Gathering. The IYS closing symposium was organized in the centre of Vancouver, with parallel sessions including updates and the latest research on salmon from a natural science perspective, human dimensions of salmon from social science perspectives and a significant number of presentations from or including an Indigenous perspective. In their keynote, Brattland, Reid and Denny highlighted the main take-aways from the Gathering and pointed towards important steps for the inclusion of Indigenous knowledges and perspectives in salmon research and governance for the future.

The Indigenous Salmon Peoples Gathering itself was held in a spirit of ceremony, celebration and meeting of cultures which affected the whole atmosphere of the Gathering and made all participants feel welcome and valued at the Musqueam premises. The Gathering started and ended with cultural performances, sharing of traditional foods and ceremony in contrast to the scientific character of the IYS synthesis symposium. It also contained sharing of knowledges and experiences, communicated orally as well as visually through artwork (see cover picture and Figure 18).

In the keynote, Andrea Reid encouraged the audience to not consider Indigenous contributions as something “to get over and done with” before getting on with the “real work”. Here, she also referred to the fact that Indigenous researchers constituted a central part of the IYS synthesis symposium presenters as well. The contributions of the Indigenous Salmon Peoples Gathering were about bringing together the work and concerns regarding a fish species that is an ecological and cultural keystone at the same time. The sharing of congruent and relatable experiences revealed striking commonalities between Indigenous Salmon Peoples from the Atlantic, Arctic, and Pacific salmon rivers. As stated by Reid: “Salmon know no boundaries and neither do our experiences as Indigenous salmon peoples”.

Some of the overarching themes that emerged over the three-day Gathering were summarized by the presenters and in the proceedings report as follows:

#### **Traditional knowledge**

Using traditional knowledge must become commonplace to enhance salmon habitats, revitalize surrounding ecosystems and foster cultural resilience against colonial mismanagement regimes.

#### **Recognizing Legal Orders and Rights**

Despite the clearly demonstrated universal benefit of Indigenous-led jurisdiction over salmon (the many examples of projects that have seen restored stocks thanks to community-led monitoring and management), Indigenous Peoples and First Nations continue to be criminalized for asserting their rights and laws. It is time for full rights recognition and implementation. This is an imperative for governance and management systems to be effective.

#### **Youth Empowerment**

“Make salmon cool!” was one of the statements emerging from the Gathering. Ensuring that youth are part of the conservation, salmon ceremonies and practises is crucial to the lives and viability of salmon, which is synonymous with the health and well-being of Indigenous peoples.

### **Spirituality Connecting Peoples**

The presenters stressed the importance of public education and to foster a spiritual connection with salmon for both Indigenous and non-Indigenous peoples. Increased public awareness and education regarding traditional salmon knowledge will also make the step towards spiritual connection easier. Eventually this connection could be a great foundation for collaboration between both Indigenous and non-Indigenous communities, academic institutions, and governments.

### **International Indigenous Collaboration**

Indigenous salmon peoples need to learn from each other, share with each other, and inspire each other towards Indigenous-led salmon governance. Participants and organizers alike recognized the need for an international network to forward the priorities of Indigenous salmon peoples. The possibility of a Declaration connecting Indigenous salmon peoples across the world in a common statement was also discussed as a future goal of the network. Those who responded to the evaluation survey after the Gathering were positive to all these ideas, but first and foremost to staying connected through a common forum for Indigenous salmon peoples.

The presenters ended by posing two questions for the IYS symposium audience and for salmon researchers in general to reflect upon: How could listening to other knowledge systems than your own be practiced in your line of work? How would you present your own knowledge, if it was not for winning a discussion but to contribute to dialogue?

The report “When Salmon Are Healthy, We are Healthy” written by the planning team behind the Gathering, containing full details of the program and summary of discussions at the International Gathering of Salmon Peoples, can be found on the webpage [www.iispg.com](http://www.iispg.com)<sup>7</sup>. The proceedings report also contains short and long-term goals for connecting Indigenous salmon peoples, such as using the network as a platform to strengthen Indigenous-led salmon conservation and management, and to increase Indigenous participation in state-led and interstate-led salmon management processes such as the NASCO and NPAFC.

### **5.2 Concluding remarks**

Based on these take-aways and the contributions in this report, we conclude with some remarks on next and future steps for inclusion of Indigenous peoples in salmon governance and for international collaboration as such.

The title of this report hints at a movement towards increased Indigenous leadership in salmon governance in Indigenous peoples’ areas. The reality of this movement is so far unevenly distributed across the northern hemisphere, but very present in the emerging research literature on Indigenous-lead governance. To what extent can Indigenous-led salmon governance based on Indigenous knowledge become a reality beyond international conferences and reports? Despite the growing recognition of Indigenous and Local knowledge (ILK) as essential for maintaining and enhancing biodiversity and for sustainable management, there is still a lack of ILK and Indigenous and local participation in many Western governance and management arrangements. Furthermore, the dialogue between different knowledge systems is still mostly a theoretical ideal with substantial potential for improvement in most salmon management systems. In terms of governance, Schreiber’s analysis of lessons learned from Canada for Sámi points to the lack of rights recognition as a root cause of governance failure and lack of legitimacy: “What is becoming clear is that Indigenous rights cannot be accommodated by increasing the amount of “participation” in state-sponsored fisheries management” (Schreiber, this report Chapter 2).

The Gathering provided great examples of Indigenous-led salmon conservation projects and cooperation: cooperation among Indigenous peoples, cooperation with non-Indigenous peoples,

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<sup>7</sup> See also the StoryMap «Indigenous Salmon Peoples” at <https://arcg.is/1PvT1W>

cooperation with governmental institutions and cooperation across borders and knowledge systems. Some of the most inspiring examples of Indigenous-led conservation presented at the gathering were the “Salmon parks” initiative ([www.salmonparks.ca](http://www.salmonparks.ca)), the Lower Fraser River Fisheries Alliance RELAW project, and the Columbia River Inter-Tribal Fisheries Commission.

In terms of academic-indigenous collaborations, the work of the Centre for Indigenous Fisheries at the University of British Columbia is a force that connects a diversity of disciplines and First Nations around salmon species spanning the northwestern Pacific coast, while the Unama’ki Institute for Natural Resources in Cape Breton is the Mi’kmaw voice for natural resources and the environment on the Canadian east coast. The concept of “Two-Eyed Seeing” is important to both of these centres where Indigenous knowledge, values and worldviews lie at the basis of research and management activities. There are as of yet no comparable institutions in Sápmi where Indigenous-led conservation and Sami knowledge is at the centre of scientific research, although there are several ongoing initiatives such as the Joddu Wild Salmon Centre and the Deatnu Instituhtta on the Deatnu river, as well as the SALCUL project and the research projects presented by Hiedanpää which point towards an increased engagement for Indigenous leadership and participation in governance based on local and Sámi knowledges for the future also in Sápmi.

What relevance can the examples and models of Indigenous-led conservation, and collaboration across disciplines and knowledge systems hold for contexts where Indigenous and local knowledges are marginalized in research, and where the participation of Indigenous and local peoples in salmon governance are at the symbolic level of inclusion? As stated by Mustonen: “We should explore these sites and acts of disruptions and not shy away from the complexities by simply pronouncing them ‘wrong’ as seen from a classical conservation viewpoint [...]. If you work with Indigenous peoples and the best of science: nature can be a powerful partner. Nothing stands in your way, survival becomes possible, rights are realized, resilience comes forward” (this report, chapter 3). To get there, he emphasizes, we have to be humble – we have to listen to each other.

Good and inspiring examples of Indigenous-led conservation, collaboration and dialogue are primarily found in contexts where rights are recognized, and authorities have moved beyond the symbolic level of inclusion in salmon governance towards Indigenous leadership (Reid and Ban 2023). Among several success stories from the literature review, are the ones where salmon river restoration on self-governed Indigenous land is central (e.g., Ween & Colombi, 2013; Walsh et al. 2020). In terms of efforts to connect Indigenous salmon peoples along the same watershed, the River of Salmon Peoples initiative engaged First Nations along the Fraser river watershed in a series of “community dialogue workshops”, which were presented in the River of Salmon Peoples book (Armstrong & William, 2015, 1). At the NASCO symposium in Tromsø in 2019, an example from the west coast of Vancouver Island was presented, providing a concrete and systematic model for inclusion of multiple knowledges along the entire salmon migration route by way of organizing “salmon roundtables” (see Lem’s contribution in NASCO 2020). An exceptional example of Indigenous-led conservation in Sápmi is the Njâuddam co-management program where the Skolt Sámi and Snowchange cooperative collaborated in meeting both ecological and Indigenous needs in working towards restoring the river system based on Skolt Sámi knowledge (Brattland and Mustonen 2018). This is so far the only example of Indigenous-led conservation in Sápmi, as well as a Fennoscandian example of “two-eyed seeing” in practice, where Indigenous and Western scientific knowledge systems contribute in parallel and support complementary insights. Although the Deatnu watershed fisheries management board is Indigenous led, the degree of self-determination is constrained by of legal prescriptions and Acts that are ultimately governed by the Finnish and Norwegian Ministries of Climate and Environment, and by decisions made by the Norwegian and Finnish Parliaments. It can be noted that a dialogue process is currently ongoing along the Deatnu river watershed, organized by the Joddu Wild Salmon Centre. The aim is to facilitate dialogue between different groups along the whole of the watershed and across land borders, between Indigenous and local knowledge holders and scientist, and



between representatives of the various levels of salmon management, spanning from the local management board to the Norwegian and Finnish state authorities.

What role can an international network such as the one organized in 2022 play in moving towards Indigenous-lead salmon governance systems and/or increased Indigenous participation in state-led management and knowledge production processes underpinning wild salmon conservation?

First and foremost, bringing diverse groups together to present themselves to others was empowering for the ISP participants and facilitated knowledge exchange. This even applied to groups along the same watershed. For instance, the Gathering was one of the few occasions upon which the two Sámi-led Deatnu watershed management organizations from opposite sides of the Norwegian-Finnish border had met with each other and with leaders from the Sámi Parliament at the same forum. The organizers of the Gathering also created a new umbrella title for the diversity of Deatnu coastal and river salmon institutions, named the “Deatnu Coastal and River Salmon Management Group”. Connecting the diversity of people and institutions who have long-standing cultural and historical ties with the same watershed was a value in itself, instigating increased collaboration and inspiration to work together also after the Gathering.

Similarly, the Gathering was an opportunity to connect salmon coastal and river fishers from different salmon watersheds internally in Norway who seldomly meet, and to connect Indigenous and local peoples who harvest Atlantic salmon across the Atlantic salmon living range (i.e., the Sámi and the Mi'kmaq).

Last but not least, the Gathering connected the diversity of Indigenous salmon peoples from a variety of different Atlantic and Pacific salmon watersheds, coasts and Nations around a common cause: the health and wellbeing of salmon and peoples.

The intention to continue the networks that were starting to form at the Gathering is certainly present and needed among many Indigenous salmon peoples. However, looking back at previous salmon peoples' initiatives, these were ended for lack of organizational capacity beyond project-based funding and organization around events such as the Indigenous Peoples Gathering. Another key challenge is to ensure Indigenous leadership also in the organization of international collaboration. The 2022 Indigenous Salmon Peoples Gathering was partly initiated as part of a research project, with goals that did not always align with the goals of Indigenous peoples and their organizations. It is thus important to ensure the capacity of Indigenous leaders and governments to lead salmon restoration and restoration of relations with salmon, and to ensure legitimate Indigenous leadership in future initiatives and events, with a sound and already established Indigenous institutional anchoring and clear organizational structure as a basis. An advantage with the flat and bottom-up organizational structure of the 2022 ISP Gathering was that it perhaps recruited more and other participants from the “grass roots” of both academic and Indigenous environments than more established arenas would generate. To keep up engagement and momentum for Indigenous salmon peoples as an international phenomenon beyond regional and local research projects and limited participation in salmon governance, planning towards future international Gatherings for empowering indigenous salmon conservation strategies, will be key. In this respect, we are looking forward to the next Gathering initiated by the Sami Parliaments and the continued Indigenous-led academic work by centres such as the Centre for Indigenous Fisheries in Vancouver.

Acknowledging the various governmental contexts under which Indigenous salmon people operate, we further call for Fennoscandian government representatives to address international recommendations and strive towards fruitful incorporation of indigenous, local, and scientific knowledge as a basis for future salmon management decisions. As of today, investing time, resources, and determination in rightful processes will be needed for Sámi leadership and contributions to salmon governance to be fully acknowledged.

We close this report with the words of Silje Karine Muotka, president of the Sámi Parliament of Norway:

*“To see the whole, to understand how mother earth is interconnected and be blessed with the bird’s perspective is not something we can achieve without sharing the knowledge. In order to ensure ecological and cultural survival and wellbeing of our salmon and salmon people, we have no time to lose”.*



Figure 19. Silje Karine Muotka putting the Sámi on the salmon peoples’ map.

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# Appendices

## Appendix I. List of relevant literature

Author(s)	Title	Year	Journal/ Book
Reid, A.J., Ban, N.C. (2023).	Indigenous leadership is essential to conservation: examples from coastal British Columbia.	2023	L.B. Crowder (Ed.) .Navigating Our Way to Solutions in Marine Conservation. Cambridge, United Kingdom: Open Book Publishers.
Tero Mustonen	Indigenous Ecological Reconstruction After Industrial Ruin in Two Iconic Sámi Catchments: Ethics of Comanagement?	2021	American Journal of Evaluation, 42 n0 2
Andrea J. Reid,Lauren E. Eckert,John-Francis Lane,Nathan Young,Scott G. Hinch,Chris T. Darimont,Steven J. Cooke,Natalie C. Ban,Albert Marshall	"Two-Eyed Seeing": An Indigenous framework to transform fisheries research and management	2021	Fish and Fisheries 22, no 2
Greening, Andrea J Reid, Nicole Morven, Elroy White, William G Housty, Jess A Housty	Indigenous Systems of Management for Culturally and Ecologically Resilient Pacific Salmon ( <i>Oncorhynchus</i> spp.) Fisheries	2021	BioScience, 71(2), 186-204
Jade R. Steela *, William I. Atlasb , Natalie C. Bana , Kyle Wilsonc , Jayda Wilsoncd, William G. Housty d , and Jonathan W. Moore	Understanding barriers, access, and management of marine mixed-stock fisheries in an era of reconciliation: Indigenous-led salmon monitoring in British Columbia	2021	FACETS 6.1 (2021)
<b>Reviewed</b>			
Frandy, T	Mas amas diehta maid oarri borra?: Contesting Sustainability in Sapmi	2021	JOURNAL OF AMERICAN FOLKLORE
Nathan Young et al.	"Consulted to death": Personal stress as a major barrier to environmental co-management	2020	JOURNAL OF ENVIRONMENTAL MANAGEMENT
Hiedanpaa, J; Saijets, J; Jounela, P; Jokinen, M; Sarkki, S	Beliefs in Conflict: The Management of Teno Atlantic Salmon in the Sami Homeland in Finland	2020	ENVIRONMENTAL MANAGEMENT
Kuokkanen, R	The Deatnu Agreement: a contemporary wall of settler colonialism	2020	SETTLER COLONIAL STUDIES
Donkersloot, R; Coleman, J; Carothers, C; Ringer, D; Cullenberg, P	Kin, community, and diverse rural economies: Rethinking resource governance for Alaska rural fisheries	2020	MARINE POLICY
Voinot-Baron, W	A bitter taste of fish: the temporality of salmon, settler colonialism, and the work of well-being in a Yupiaq fishing village	2020	ECOLOGY AND SOCIETY
Walsh, JC; Connors, K; Hertz, E; Kehoe, L; Martin, TG; Connors, B; Bradford, MJ; Freshwater, C; Frid, A; Halverson, J; Moore, JW; Price, MHH; Reynolds, JD	Prioritizing conservation actions for Pacific salmon in Canada	2020	JOURNAL OF APPLIED ECOLOGY
Ritchie, M; Angelbeck, B	Coyote Broke the Dams: Power, Reciprocity, and Conflict in Fish Weir Narratives and Implications for Traditional and Contemporary Fisheries	2020	ETHNOHISTORY
DeRoy, BC; Darimont, CT; Service, CN	Biocultural indicators to support locally led environmental management and monitoring	2019	ECOLOGY AND SOCIETY
Connors, B; Atlas, W; Melymick, C; Moody, M; Moody, J; Frid, A	Conservation Risk and Uncertainty in Recovery Prospects for a Collapsed and Culturally Important Salmon Population in a Mixed-Stock Fishery	2019	MARINE AND COASTAL FISHERIES
Wyllie de Echeverria, VR; Thornton, TF	Using traditional ecological knowledge to understand and adapt to climate and biodiversity change on the Pacific coast of North America	2019	AMBIO
Brattland, C; Mustonen, T	How Traditional Knowledge Comes to Matter in Atlantic Salmon Governance in Norway and Finland	2018	ARCTIC
Walsey, V; Brewer, J	Managed out of existence: over-regulation of Indigenous subsistence fishing of the Yukon River	2018	GEOJOURNAL
Harrison, HL; Rybraten, S; Aas, O	Hatching Knowledge: A Case Study on the Hybridization of Local Ecological Knowledge and Scientific Knowledge in Small-Scale Atlantic Salmon ( <i>Salmo salar</i> ) Cultivation in Norway	2018	HUMAN ECOLOGY
Eckert, LE; Ban, NC; Tallio, SC; Turner, N	Linking marine conservation and Indigenous cultural revitalization: First Nations free themselves from externally imposed social-ecological traps	2018	ECOLOGY AND SOCIETY

Muller, MK	Promoting or Protecting Traditional Knowledges? Tensions in the Resurgence of Indigenous Food Practices on Vancouver Island	2018	INTERNATIONAL INDIGENOUS POLICY JOURNAL
Fagen, RM	Salmonid Jumping and Playing: Potential Cultural and Welfare Implications	2017	ANIMALS
Raymond-Yakoubian, J; Raymond-Yakoubian, B; Moncrieff, C	The incorporation of traditional knowledge into Alaska federal fisheries management	2017	MARINE POLICY
Atlas, WI; Housty, WG; Beliveau, A; DeRoy, B; Callegari, G; Reid, M; Moore, JW	Ancient fish weir technology for modern stewardship: lessons from community-based salmon monitoring	2017	ECOSYSTEM HEALTH AND SUSTAINABILITY
Gerkey, D	The Emergence of Institutions in a Post-Soviet Commons: Salmon Fishing and Reindeer Herding in Kamchatka, Russia	2016	HUMAN ORGANIZATION
Nakhshina, M	Constraints on community participation in salmon fisheries management in Northwest Russia	2016	MARINE POLICY
Willette, M; Norgaard, K	You got to have fish: Families, environmental decline and cultural reproduction	2016	FAMILIES RELATIONSHIPS AND SOCIETIES
Nesbitt, HK; Moore, JW	Species and population diversity in Pacific salmon fisheries underpin indigenous food security	2016	JOURNAL OF APPLIED ECOLOGY
Nguyen, VM; Young, N; Hinch, SG; Cooke, SJ	Getting past the blame game: Convergence and divergence in perceived threats to salmon resources among anglers and indigenous fishers in Canada's lower Fraser River	2016	AMBIO
McKechnie, I; Moss, ML	Meta-analysis in zooarchaeology expands perspectives on Indigenous fisheries of the Northwest Coast of North America	2016	JOURNAL OF ARCHAEOLOGICAL SCIENCE-REPORTS
Denny, SK; Fanning, LM	A Mi'kmaw Perspective on Advancing Salmon Governance in Nova Scotia, Canada: Setting the Stage for Collaborative Co-Existence	2016	INTERNATIONAL INDIGENOUS POLICY JOURNAL
Noble, M; Duncan, P; Perry, D; Prosper, K; Rose, D; Schnierer, S; Tipa, G; Williams, E; Woods, R; Pittock, J	Culturally significant fisheries: keystones for management of freshwater social-ecological systems	2016	ECOLOGY AND SOCIETY
Naves, LC; Simeone, WE; Lowe, ME; Valentine, EM; Stickwan, G; Brady, J	Cultural Consensus on Salmon Fisheries and Ecology in the Copper River, Alaska	2015	ARCTIC
Kirner, KD	Pursuing the Salmon of Wisdom: The Sacred in Folk Botanical Knowledge Revival among Modern Druids	2015	JOURNAL FOR THE STUDY OF RELIGION NATURE AND CULTURE
Dale, C; Natcher, DC	What is old is new again: the reintroduction of indigenous fishing technologies in British Columbia	2015	LOCAL ENVIRONMENT
Service, CN; Adams, MS; Artelle, KA; Paquet, P; Grant, LV; Darimont, CT	Indigenous Knowledge and Science Unite to Reveal Spatial and Temporal Dimensions of Distributional Shift in Wildlife of Conservation Concern	2014	PLOS ONE
Reid, JL	Keystone Nations: Indigenous Peoples and Salmon across the North Pacific	2014	WESTERN HISTORICAL QUARTERLY
Stuart-Richard, GD	Keystone Nations: Indigenous Peoples and Salmon across the North Pacific	2014	AMERICAN INDIAN CULTURE AND RESEARCH JOURNAL
Monteith, D	Keystone Nations: Indigenous Peoples and Salmon across the North Pacific	2013	JOURNAL OF ANTHROPOLOGICAL RESEARCH
Reedy-Maschner, K	Salmon Politicians: Mapping Boundaries, Resources, and People at the Bristol Bay/Aleutian Border	2013	SOCIETY & NATURAL RESOURCES
Ween, GB; Colombi, BJ	Two Rivers: The Politics of Wild Salmon, Indigenous Rights and Natural Resource Management	2013	SUSTAINABILITY
Jacob, C; McDaniels, T; Hinch, S	Indigenous culture and adaptation to climate change: sockeye salmon and the St'at'imc people	2010	MITIGATION AND ADAPTATION STRATEGIES FOR GLOBAL CHANGE

*Table 2. List of journal articles resulting from the literature search and relevant emerging literature published **after** the literature search and review were finalized (2021-2023).*



## Appendix II. Participant list from the 2022 Indigenous Salmon Peoples Gathering

Community Name/ Organization	Country								Number
	CA	DK	FI	GB	JP	NO	RU	US	
Kuskokwim River Inter Tribal Fish Commission								1	1
Ahousaht	1								1
Aleut International Association								2	2
BC Hydro	1								1
Bivdu						2			2
Cayoosce Creek Indian Band	1								1
Citizen, Okanagan Indian Band, Sylix Nation	1								1
Columbia River Inter-Tribal Fish Commission								1	1
Confederacy of Mainland Mi'kmaq	1								1
drawing change	2								2
Eskasoni Fish & Wildlife Commission	2								2
Facilitator	1								1
First Nations Fisheries Council of BC	2								2
First Nations Summit	3								3
Fish Outlaws	1								1
Fisheries and Oceans Canada, Government of Canada	1								1
FNFC	1								1
Gespe'gewaq Mi'gmaq Resource Council	1								1
Govas Film as						1			1
Hokkaido Museum of Northern Peoples					1				1
Itelmen people	1								1
Khabarovsk Krai Association of the Indigenous Peoples of the North							1		1
Kwanlin Dun First Nation	1								1
Lower Fraser Fishery Alliance	1								1
Lower Fraser Fishery Alliance - RELAW project	1								1
Lower Nicola Indian Band member (Nlaka'pamux Nation); Mi'kmaq; UBC Centre for Indigenous Fisheries	1								1
Lummi / Fish Outlaws								1	1
Maliseet Nation Conservation Council	1								1
Miawpukek First Nation	1								1
Mi'gmaq and Maliseet Aboriginal Fisheries Association	1								1
Mowachah/Muchalaht First Nation	1								1
Namgis First Nation	1								1
Namsen						1			1
Natural Resources Institute Finland (Luke)			1						1
North Atlantic Salmon Conservation Organization				1					1
North Coast Skeena First Nations Stewardship Society	1								1
North Pacific Anadromous Fish Commission	1								1
NSF							1		1
Nuu-chah-nulth Tribal Council	2								2
Okanagan Indian Band	1								1
Paqtnkek First Nation	1								1
Penticton/Okanagan	1								1
Rampart Village								1	1
Saami Council			1						1
SALCUL (UIT/NINA)		1							1
Salmonberry Tribal Associates								1	1
Sámi			1						1
Sámi, Teno management area			1						1
SCHR					1				1
Self-employed								1	1
Semath (Sumas) FN	1								1
Settler	1								1
SFU Department of Archaeology	1								1
Skeena Fisheries Commission	1								1
Snowchange Cooperative			3	1					4
Sylix Okanagan Nation member; staff Okanagan Nation Alliance	1								1
Tana Watercourse Fisheries Management (TF)						1			1
Tanavassdragets fiskeforvaltning						1			1
The Confederacy of Mainland Mi'kmaq	1								1
The Sámi Parliament of Norway						3			3
The University of British Columbia	1								1
Tl'azt'en Nation	1								1
Tribal TAB								1	1
Tr'ondek Hwech'in Government	1								1
Tseshaht/Nuu-chah-nulth Nation and University of Washington								2	2
UBC	1								1
UIT - the Arctic University of Norway						1			1
Unama'ki Institute of Natural Resources	1								1
University of British Columbia	1								1
University of Illinois Urbana-Champaign								1	1
University of Victoria	2								2
Vuntut Gwitchin First Nation	1								1
Vuntut Gwitchin Government	3								3
Washington State								1	1
Whitehorse, YT - Champagne and Aishihik First Nation	2								2
Wolastoqey Nation	1								1
<b>Total number</b>	<b>57</b>	<b>1</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>11</b>	<b>1</b>	<b>13</b>	<b>94</b>

Table 3. Number of participants from the 2022 Indigenous Salmon Peoples Gathering per organization or community, per country, and in total.



*Norsk institutt for naturforskning, NINA, er en uavhengig stiftelse som forsker på natur og samspillet natur–samfunn.*

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