



GETTING EVERYONE TOGETHER FOR GETTING EVERYTHING RIGHT

4TH WORLD SMALL-SCALE FISHERIES CONGRESS: NORTH AMERICA
ST. JOHN'S, CANADA | JUNE 20-22, 2022

Getting IT Right
4th World Small-Scale Fisheries Congress
North America

Congress Proceedings

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Too Big To Ignore Report

Number R-02/2022

Land Acknowledgement

The 4th World Small-Scale Fisheries Congress North America took place on territory we acknowledge as the ancestral homelands of the Beothuk, and on the island of Newfoundland, the ancestral homelands of the Mi'kmaq and Beothuk. We would also like to recognize the Inuit of Nunatsiavut and NunatuKavut and the Innu of Nitassinan, and their ancestors, as the original people of Labrador. We strive for respectful relationships with all the peoples of this province as we search for collective healing and true reconciliation and honour this beautiful land and ocean together.

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Acknowledgments

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INTERNATIONAL YEAR OF
**ARTISANAL FISHERIES
AND AQUACULTURE**
2022

The 4WSFC Regional Series are organized in five regions of the world, with support from the Food and Agriculture Organization (FAO) of the United Nations, to help celebrate the International Year of Artisanal Fisheries and Aquaculture (IYAFA 2022).

CONGRESS SUMMARY & HIGHLIGHTS

Background

The World Small-Scale Fisheries Congress (WSFC) is a transdisciplinary forum for people interested in small-scale fisheries. The 4th WSFC was organized in five regions of the world to help celebrate the International Year for Artisanal Fisheries and Aquaculture (IYAFA 2022). The congress aimed to facilitate knowledge exchange, build research and governance capacity, strengthen local and regional organizations and networks, and support the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (SSF Guidelines).

The theme of the 4WSFC North America, 'Getting IT Right,' speaks to the need for open discussion about the many dimensions of change, transition and transformation required to achieve and maintain sustainable small-scale fisheries in coastal and inland communities across North America. The congress theme is inspired by the Ocean Frontier Institute's Module I (OFI-I) on 'Informing Governance Responses in a Changing Ocean', building on its earlier 'Taking Stock' exercise, and the subsequent in-depth research that examines the consequences of social, ecological, economic and institutional changes for the future of fisheries, coastal communities and the economy of Atlantic Canada. The summary of the work done in OFI-I – Getting Together for Getting IT Done – is included in the proceedings (see Pages 12-13).

The 4WSFC was an opportunity to put it all together, through the lens of Getting IT Right, to explore options and develop responses for sustainable and viable fisheries in the North Atlantic, especially in Atlantic Canada where Module I research was focused, and broadly in Canada and the USA. Embedded below, the 'Getting Together for Getting IT Right' brief showcases key highlights from OFI-I.

You may notice that the Congress proceedings refer to an event during the Getting Governance Right plenary when attendees from the Saugeen Ojibway Nation made a statement about the involvement and recognition of Indigenous perspectives during the Congress. After this statement, the attendees left the Congress. As a result, *Panel #4.1: Two-Eyed Seeing and fisheries governance: The Saugeen Ojibway Nation Perspective* was not delivered. Since then, a process of learning commenced among all attendees during and after the Congress, including discussions among the International Organizing Committee, and between the Committee and the Saugeen Ojibway Nation. Together, we have identified a pathway forward for future collaboration. For instance, the emerging eBook *Thinking Big about Small-Scale Fisheries in Canada* will include a chapter, *Nothing About Us, Without Us*, that reflects insights and experiences, which were meant to

be presented during Panel #4.1. As well, the process of finalizing the eBook is made in response to lessons learned from the Saugeen Ojibway Nation. Other comments and feedback from the congress participants received after the event suggest that we are all keen to continue learning and to move together. Several positive inputs were received as well as recommendations for improvement. Participants also wrote about the importance of common identity, respect and recognition of different rights and cultures, the need to work together, and other areas related to the logistics and planning of the Congress. We thank those who submitted feedbacks for the opportunity to learn for future engagements.

Landing in St. John's to Get IT Right

On June 20-22, 2022, over 200 participants participated in the 4th World Small-Scale Fisheries Congress, North America (4WSFC) (www.4wsfcongress.com/north-america-june-2022), more than half joined in-person in St. John's. The Congress was a transdisciplinary forum to discuss bold prospects for small-scale fisheries and fisheries and oceans sustainability in North America. Following local public health guidelines for in person gatherings and offering of hybrid options, the Congress was an important opportunity to come together after over two years of online meetings. 4WSFC involved Congress-wide plenaries and small-setting paper sessions, a format that enabled in-depth discussions and fostered knowledge exchange and sharing.

The Congress was closely tied with the Ocean Frontier Institute's Module I 'Informing Governance Responses in a Changing Ocean' (OFI-I) (www.ofigovernance.net), including its third phase of research, Getting IT Right. The 4WSFC facilitated dialogue about and across different changes and transitions, articulated as many ITs needed to achieve and maintain sustainable fisheries, coastal communities, and ocean activities. Inspired by this multidimensional perspective, 4WSFC activities such as plenary sessions, individual presentations, and a movie night were organized around seven themes: Getting Adaptation Right, Getting Small Right, Getting Conservation Right, Getting Governance Right, Getting Aquaculture Right, Getting the Blue Economy Right, and Getting the Future Right. At the end of the 4WSFC, four speakers synthesized final thoughts and highlighted future directions.

The conference proceedings show that presentations and discussions revealed many lessons, and forged fruitful ideas, relationships, and next steps. At the end of the Congress, attendees developed the new goal of "moving together to get everything right". The 4WSFC was therefore a key contribution for the 2022 International Year of Artisanal Fisheries and Aquaculture, and supported recognition of both Life Above and Below Water for SDG 14.

Building Transdisciplinary Foundations

The 4WSGC highlighted the importance of building transdisciplinary foundations to promote successful engagement and effective governance. The Congress attendees included Indigenous nations across Canada, coastal communities in Atlantic Canada, fishers and industry representatives across North America, Canadian and American ENGOs, employees from Canadian and United States federal governments, and interdisciplinary researchers from the natural and social sciences and humanities. Each of these groups has different interests, worldviews, and knowledge about small-scale fisheries, as well as expectations for a successful Congress. Bringing them together to foster quality interactions was challenging. Mistakes were made and continue to be acknowledged and addressed. In the end, many Congress attendees remarked how we all needed to be humble while remaining positive and hopeful to move forward.

Reflection continues on how to embody these principles, to engage everyone respectfully and thoughtfully, and to ensure no voices are missing. Attendees were excited about strategies such as supporting self-governance among small-scale fishers or building new collaborations across community, government, and academic institutions. New awareness of the difficulties and prospects to build these transdisciplinary foundations is a key outcome of the 4WSFC.

Tensions and Pluralism

Congress attendees pointed to tensions in moving forward together. For example, attendees highlighted the importance of slowing down to build research relationships and learn about histories and context. Meanwhile other attendees discussed urgency for moving forward quickly to keep up with the speed and scale of rapid transition. Further, congress attendees identified contradictions between the desire for diverse knowledge types in governance, including Indigenous and local knowledge, with the implementation of rights and rules that limit access and participation. Discussions in breakout sessions indicated that these tensions are not going away in fisheries and oceans research and governance, where understanding and addressing diverse lived realities are increasingly needed. These discussions pointed to the need to be more active in pursuit of justice and equity by learning how to advance pluralism in research and governance interactions. During a public film screening of 'Lake Superior, Our Helper', attendees learned about sharing stories as key strategy to learn about differences, and to understand history and context in pursuit of rights and well-being. Enabling these interactions across all groups is a key trajectory from 4WSFC.

Everything Frameworks

An important outcome of the 4WSFC is the new goal to produce collaborative ‘everything frameworks’, as introduced by Dr. Paul Foley as a way for us to come together and integrate knowledge about social-ecological change for fisheries and oceans sustainability. Congress attendees discussed how small-scale fisheries do not occur in isolation. They are embedded in broad social-ecological changes and human activity that influence fisheries and oceans sustainability, in coastal communities, and broader society. Speakers in each plenary discussed key interactions important to them, whether it was uncertain feedbacks in marine ecosystems, influence of other sectors in harbours and coastal communities, the erosion and preservation of traditional life and livelihoods on coasts, or the development of new access and allocation rules. ‘Everything frameworks’ speak to the need for holistic frameworks to better characterize and address these interactions.

Moving Together to Get Everything Right

The 4WSFC helped enable interactions to learn across regions, types of fisheries, and cultures, such as when participants learned from community-based fisheries and fisheries networks, like Skipper Otto’s, and discussed new networks, such as Small-Scale Fisheries Canada. Attendees also discussed about the importance of broad outreach and engagement to build coalitions. They heard from a fisher and fisheries scientist, Erica Porter, about her innovative approach in learning and teaching about interactions for marine conservation in Nova Scotia, Canada, and Kimberley Orren from Fishing for Success, an NGO in Newfoundland and Labrador, about the need introduce youth to fishing culture. Examples like these show the breadth of ideas in support of moving together to get everything right. In the end, 4WSFC attendees were excited about taking lessons and moving forward, by building transdisciplinary foundations to help small-scale fisheries navigate a future in pursuit of justice and equity.

Getting Together for Getting IT Right

The World Small-Scale Fisheries Congress (WSFC) is a transdisciplinary forum for people interested in small-scale fisheries and oceans sustainability. Coinciding with the 2022 International Year of Artisanal Fisheries and Aquaculture (IYAF 2022), the 4WSFC is organized in five regions around the world. The congress aims to facilitate knowledge exchange, build research and governance capacity, strengthen local and regional organizations and networks, and support the implementation of the SSF Guidelines.

The 4WSFC North America is organized around seven main topics:



'Informing Governance Responses in a Changing Ocean'

The congress theme is inspired by the Ocean Frontier Institute's Module I on 'Informing Governance Responses in a Changing Ocean', building on its earlier "Taking Stock" dialogue, and the in-depth research that examines the consequences of social, ecological, economic and institutional changes for the future of fisheries, coastal communities and the economy of Atlantic Canada. Several lessons can be drawn from this work, which can help think about what Getting IT Right for small-scale fisheries may imply.

Getting IT Right for Small-Scale Fisheries

'Getting IT Right' speaks to the need for an open discussion about the many dimensions of change, transition and transformation required to achieve and maintain sustainable small-scale fisheries in coastal and inland communities across North America. Taking Stock Dialogue was a multi-stakeholder forum, held at the early phase of Module I, to review and take lessons from past initiatives. The In-Depth Research was conducted, following what was learned, covering topics that are relevant to informing current and future governance actions and responses. Getting IT Right is an opportunity to put it all together, and through anticipatory governance lens, explore options and develop short- and long-term responses for sustainable and viable fisheries, specifically in Newfoundland and Labrador (NL) where Module I research is situated, and broadly in Canada and USA.



ofigovernance.net

What are we doing to get it right?

SSH Working Group "People and the Ocean Speaker Series"

Helping to increase visibility of the social sciences & humanity research related to ocean

OFI Social Sciences and Humanities (SSH) Working Group's speaker series, covering topics such as migrant workers precarity, digital oceans, fisheries economics, treaty relations & ocean governance, the role of human rights & arts in ocean governance, and the relevance of marine social scientists (& more!)

www.ofi.ca/event/people-and-the-ocean-speaker-series

Marine Conservation Targets project

Stepping from Zero

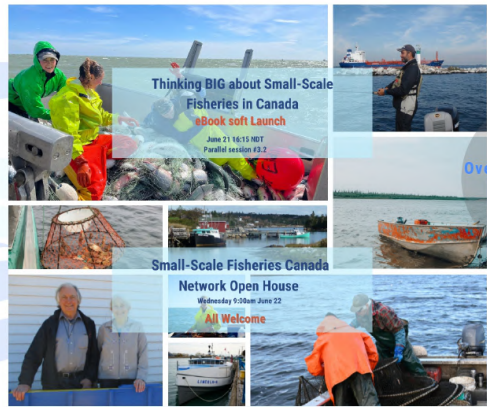


Designing safe, sustainable, and inclusive coastal communities and industries for Atlantic Canada

www.ofi.ca/research-projects/future-ocean-and-coastal-infrastructures-foci

Future Ocean and Coastal Health (FOCI)

Re-thinking the way we design, develop, and manage infrastructures



Making visible the role and contribution of SSF in Canada

Over 75 contributors and counting

Creating network of SSF researchers, practitioners and interested people

Let's use the time at the congress to network, explore collaboration, and see what we can do together to Get IT Right!

From Taking Stock to Getting IT Right

Phase 1

Taking Stock 2017-2018

In September 2018, 65 individuals from communities, government, and academia came together to discuss historical, current, and possible future changes in NL fisheries and coastal communities. Background research was conducted prior to the dialogue, providing the basis for the Taking Stock Dialogue, helping to fine-tune Module I in-depth research, organized around eight themes.



Phase 2

Diving Deep 2019-2021

Based on the in-depth research that Module I researchers and partners have been conducting on a wide range of topics, combining scientific and fishers' knowledge, Several take-home lessons and key findings reveal the importance of history, and the need to understand all aspects of fisheries and coastal communities and the challenges and change facing them.



Phase 3

Getting It Right 2022 & Beyond

What remains to be done in 'Getting IT Right'?

Some collective thoughts from the project team

- Develop of a strategic approach to seafood processing that takes into account not just issues of recruitment and retention of workers but also the relationship between processing, small-scale fisheries, coastal communities and opportunities for diversification, cross-linkages between fisheries/processing and other sectors and not only dominant but also niche markets.
- Important questions that fisheries communities and organizations are asking, or are concerned with, include who will be able to fish? Who can fulfill requirements to have sustainable work in the fishery and under which circumstances?
- There's a lot more work to do in research collaborations and management institutions, especially with respect to institutionalizing meaningful and impactful capacity to integrate social science research on matters such as the distribution of access and benefits in management processes and decision making.
- As heavy- and highly-skilled audience, fisheries are an excellent outlet for weather office outreach. Open questions remain regarding how to best engage meteorologists & fishers, but there are real potential benefits here.
- In relation to Operational Health & Safety: We plan on disseminating/publishing these findings and making the information available to manufacturers and regulators to help inform governance and decision-making about new designs.
- On Nunatsiavut fisheries: This work is currently still working to systematically combine and curate potential fisheries futures that are Inuit-led and offer pragmatic and just options for Nunatsiavut beneficiaries.

NL fisheries snapshot

After the series of moratoria on commercial fishing of North Atlantic cod in 1992, the industry shifted from harvesting groundfish to shellfish. Shellfish, such as snow crab and shrimp, remain the largest portion of catches landed in Newfoundland and Labrador (Figure 1). But, change is happening. The landings are decreasing in volume, although they are increasing in value. All of the province's fisheries make incredible economic contributions, but the contribution from small boat harvesters (less than 40 feet) cannot be undervalued. Of the 4,100 vessels landed in the NL Region, approximately 3,500 were in this category (Figure 2) (Source: DFO-NL, 2022, unpublished report)

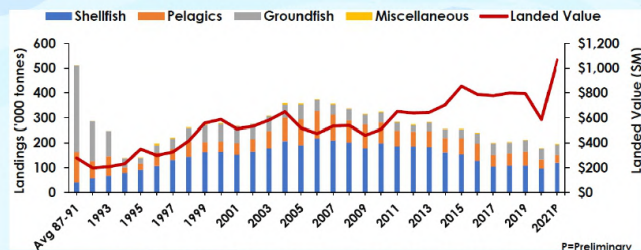


Figure 1: All Vessels, Total Landings (Tonnes '000) and Landed Value (\$ Millions), NL Region

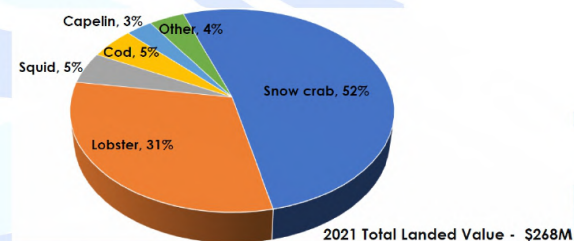


Figure 2: Vessels Less Than 40 Feet, 2021 Total Landed Value, Top Species, NL Region

Program-at-a glance

DAY 1 - Monday, June 20			
REGISTRATION & NETWORKING WITH MORNING REFRESHMENT (08:30 - 9:30)			
<p>9:30 - 10:20 OPENING REMARKS</p> <p>HOSTS: Paul Foley, Evan J. Andrews & Ratana Chuenpagdee</p> <p>SALON A</p> <p>Welcome speeches by:</p> <p>His Honourable Mayor Danny Breen, City of St. John's</p> <p>Mr. Tony Doyle, Vice-President (Inshore), FFAW-Unifor</p> <p>Mr. William McGillivar, Regional Director General, Fisheries and Ocean</p> <p>Dr. Tana Allen, Acting Associate Vice-President (Research), Memorial University</p>			
<p>10:30 - 12:30 PLENARY SESSION # 1: Getting Adaption Right</p> <p>CHAIRS: Maria Andree Lopez Gomez & Sarah Harper</p> <p>SALON A</p>			
SPEAKERS			
Sonia Strobel	Rick Williams	Kanae Tokunaga	Alida Bundy
LUNCH (12:30-13:45)			
<p>13:45 - 15:45 PLENARY SESSION # 2: Making Connections to Get Small Right</p> <p>CHAIRS: Evan J. Andrews, Cynthia Grace-McCaskey & Katia Frangoudes</p> <p>SALON A</p>			
SPEAKERS			
Tony Doyle	Dean Bavington	Hannah Harrison	Jennifer Ford
Erin Carruthers			
BREAK (15:45-16:15)			
16:15 - 17:45 PARALLEL SESSION #1			
SESSION # 1.1	SESSION # 1.2	SESSION # 1.3	SESSION # 1.4
Basic income [SALON B]	Getting Fish Harvesting Policy Right [SALON C]	Getting Adaptation Right (1) - Contributed papers [SALON D]	Getting Small Right - Contributed papers [PLACENTIA BAY]
ORGANIZERS & MODERATORS	ORGANIZERS	CHAIR	CHAIR
Kristen Lowitt, Hannah Harrison, Deatra Walsh & Barb Neis	Barry Darby & Helen Forsey	Prateep Nayak	Cynthia Grace-McCaskey
SPEAKERS	SPEAKERS	SPEAKERS	SPEAKERS
Ryan Lauzon	Barry Darby	Kanae Tokunaga	Stephan Schott
Sonia Strobel	Helen Forsey	Sarah Harper	Tony Charles
Rick Williams		Natascia Tamburello	Hillary Smith
Alyse Stuart		Ian Ivany	Juan Marti
Chalsie Kook-Marche		Eider Graner Urtizberea	Maria Andree Lopez Gomez
Barbara Boraks		Alexandria Major	Md. Ruyel Miah
BREAK (17:45-18:00)			

DAY 1 - Monday, June 20			
18:00 - 19:30 PARALLEL SESSION #2			
SESSION # 2.1	SESSION # 2.2	SESSION # 2.3	SESSION # 2.4
Canada and Japan comparison: Different but Similar [SALON B]	Transitioning from vulnerability to viability: Transdisciplinary approaches to getting small-scale fisheries governance right [SALON C]	Getting Governance Right (1) - Contributed papers [SALON D]	Getting Conservation Right - Contributed papers [PLACENTIA BAY]
ORGANIZER & MODERATOR	ORGANIZER & MODERATOR	CHAIR	CHAIR
Yinji Li & Kimberly Orren	Prateep Kumar Nayak	Susan Squires	Patricia Pinto da Silva
SPEAKERS	SPEAKERS	SPEAKERS	SPEAKERS
Jennifer Brenton	Jessica Blythe	Courtenay E. Parlee	Evan J Andrews
Megan Meadus	Ana Carolina Esteves Dias	Katia Frangoudes	Alida Bundy
Jasmine Paul	Ratana Chuenpagdee	Frédéric Cyr	Kayla Hamelin
Yinji Li	Derek Armitage	Charles Mather	Walter Bezha & Grace Martin
Kimberly Orren	Discussants	Madu Galappaththi	Poppy Keogh
	Natasha Serrao	Sahir Advani	Tony Charles
	Bhabishya Khaniya		
	Md. Ruyel Miah		
19:30 - 21:00: Congress reception @ Delta Hotel			
DAY 2 - Tuesday, June 21			
REGISTRATION & NETWORKING WITH MORNING REFRESHMENT (09:00 - 10:00)			
10:00 - 10:30 DAY 1 SUMMARY SALON A			
10:30 - 12:30 PLENARY SESSION # 3: Step Zero for Getting Marine Conservation Right CHAIRS: Patricia Pinto da Silva & Evan J. Andrews SALON A			
SPEAKERS			
Erica Porter	Tyler Eddy	Brice Trouillet	Patricia Clay
LUNCH (12:30-13:45)			
13:45 - 15:45 PLENARY SESSION # 4: Getting Governance Right CHAIRS: Kristen Lowitt, Susan Squires & Prateep Nayak SALON A			
SPEAKERS			
Barb Neis	Bonnie McCay	Madeleine Hall-Arber	
BREAK (15:45-16:15)			

DAY 2 - Tuesday, June 21

16:15 - 17:45 PARALLEL SESSION #3

SESSION # 3.1	SESSION # 3.2	SESSION # 3.3	SESSION # 3.4	SESSION # 3.5
Making co-management work: Case studies from Maine's river herring and shellfish fisheries [SALON B]	Thinking BIG about Small-Scale Fisheries in Canada: eBook Launch [SALON C]	Getting Governance Right (2) - Contributed papers [SALON D]	Getting Aquaculture and Other Things Right Contributed papers [PLACENTIA BAY]	Illuminating Hidden Harvest [Virtual only]
ORGANIZERS & MODERATORS	ORGANIZER	CHAIR	CHAIR	ORGANIZERS & MODERATORS
Emily Farr & Mike Thalhauser	Evan J. Andrews & Christine Knott	Megan Bailey	Charles Mather	Lena Westlund
SPEAKERS	SPEAKERS	SPEAKERS	SPEAKERS	SPEAKERS
Joshua Stoll	Kirsten Bradford	C. Julián Idrobo	Robin Fail	Maria del Mar Mancha-Cisneros
Bailey Bowden	Hannah Harrison	Hannah Harrison	Taylor Reidlinger	John Virdin
Mike Thalhauser	Nathan Stanley	Iria García Lorenzo	Maria Andree Lopez Gomez	Joshua Stoll
Marissa McMahan	Sarah Harper	Bhabishya Khaniya	Wilf Swartz	
	Cailyn Siider	Sonia Strobel		
	Zaman Sajid	Solmundur Palsson		
	Evelyn Pinkerton			

BREAK (17:45-18:00)

18:00 - 19:30 PARALLEL SESSION #4

SESSION # 4.1	SESSION # 4.2	SESSION # 4.3	SESSION # 4.4
Two-Eyed Seeing and fisheries governance: The Saugeen Ojibway Nation Perspective [SALON B]	Inspiring new pathways: innovation, network building, and research in community-based seafood system [SALON C]	Getting Blue Economy Right - Contributed papers [SALON D]	Getting Future Right - Contributed papers [PLACENTIA BAY]
ORGANIZER	ORGANIZER & MODERATOR	CHAIR	CHAIR
Ryan Lauzon, Alexander Duncan & Breanna Redford	Joshua Stoll & Sahir Advani	Sheila Prall-Dillman	Gerald Singh
SPEAKERS	SPEAKERS	SPEAKERS	SPEAKERS
Ryan Lauzon	Sahir Advani	Racheal Weymer	Mirella de Oliveira Leis
Alexander Duncan	Talia Young	Syma Ebbin	Rachael Cadman
Breanna Redford	Sonia Strobel	Megan Bailey	Monica Engel
Christopher Akiwenzie	Peter Halmay	Sarah Ecolano	Desai Shan
Jordane Chegahno	Kevin Scribner	Paloma Henriques	Rob Stephenson
	Jordan Richardson	Ian Stewart	Eranga Galappaththi
	Joshua Stoll		

20:30 - 22:30 Movie Night "Lake Superior Our Helper: Stories from Batchewanaung Anishinabek Fisheries"

Film Launch to be held at Bruneau Centre auditorium, Memorial University

*** Pizzas are provided on the third floor prior to the screening ***

HOST: Kristen Lowitt

SPEAKERS

Kristen Lowitt	Charles Levkoe	Greg Agawa	Sarah Furlotte
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DAY 3 - Wednesday, June 22			
REGISTRATION & NETWORKING WITH MORNING REFRESHMENT (09:00 - 10:00)			
10:00 - 10:30 DAY 2 SUMMARY SALON A			
10:30 - 12:30 PLENARY SESSION #5: Food, Fishing, and Visions for the Blue Economy CHAIRS: Gerald Singh & Joshua Stoll SALON A			
SPEAKERS			
Robert Pascal		Sarah Shoffler	
Peter Halmay	Charles Mather	Chris Milley	
LUNCH (12:30-13:45)			
13:45 - 15:45 PLENARY SESSION #6: Getting Future Right CHAIRS: Megan Bailey & C. Julián Idrobo SALON A			
SPEAKERS			
Ken Paul	Momo Kochen	Hekia Bodwitch	Rob Stephenson
Patricia Pinto da Silva			
BREAK (15:45-16:00)			
16:00 - 17:45 PLENARY SESSION #7: Getting Everything Right CHAIRS: Evan J. Andrews & Ratana Chuenpagdee SALON A			
SPEAKERS			
Keith Sullivan	Kimberly Orren	Kevin Anderson	Paul Foley
17:45 - 18:00 - CLOSING REMARKS SALON A			

PLENARY SESSIONS - HIGHLIGHTS

Plenary #1 – Getting ADAPTION Right

Monday, June 20th

Speakers:

- Sonia Strobel, Skipper Otto, Canada
- Kanae Tokunage, Gulf of Maine Research Institute, USA
- Rick Williams, Canadian Council of Professional Fish Harvesters, Canada
- Alida Bundy, Fisheries and Oceans, Canada

Chairs:

- Maria Andree Lopez Gomez, Autonomous University of Barcelona, Spain
- Sarah Harper, University of Victoria / University of British Columbia, Canada

Introduction

Small-scale fisheries in North America face many challenges yet have to potential to be resilient and adapt to changing social, economic, and ecological conditions. This interactive plenary session will feature several panelists exploring how to 'Get Adaptation Right', with a focus on access and infrastructure considerations, overcoming labour and market challenges, identifying knowledge/data requirements for adaptation planning, and highlighting innovative approaches and tools for responding to change, including examples of policies and programs that exist or are needed for adaptation in small-scale fisheries. Session participants were invited to engage in dialogue with the panelists for a rich discussion on adaptation in small-scale fisheries, sharing their questions and insights from the places and experiences that they work and live.

Summary

Sonia Strobel, of Skipper Otto, spoke on the beginnings of Skipper Otto and how it connects consumers to the product they are paying for. Based on an annual subscription, paid before the fishing season starts, the consumer can purchase

fresh, seasonal fish using the money they've pledged. This system helps to create a community supported fishery, with members agreeing to "eat with the ecosystem," with a varied catch per season. Sonia concluded with detailing how the community supported fisheries help small-scale fisheries and fishers be more resilient to supply chain shocks as well as to be more adaptive to change.

Kanae Tokunaga, from the Gulf of Maine Research Institute, who joined virtually, referred to three challenges to Getting Adaption Right: access and allocation, recognizing diverse perspectives and objectives, and integrating different types of knowledge. Kanae concluded the presentation with an emphasis on the importance of a shared understanding of resources, the ecosystem and economics for a resilient fishery.

The next panelist to speak was Rick Williams, of the Canadian Council of Professional Fish Harvesters, on "Policy innovation Canadian owner operator fisheries". He first gave a brief overview of the economics and politics of policy innovation in fisheries and pointed out that *"the biggest threat to small-scale fisheries is that the fishery is getting big"*. He added that industry level leadership and governance is needed to meet the future challenges and one way to do this is to set up a regional governance body for community-based fisheries.

The final speaker, Alida Bundy, from Fisheries and Oceans, Canada, presented on I-ADApT – a decision support tool for global change in marine systems. She opened with the fact that when we talk about how to adapt, we have to remember this is an issue faced by small-scale fisheries around the world. She described how I-ADApT was developed as a way to learn what coping strategies have worked elsewhere and what adaptive responses are available. The tool is intended to be used by community groups, decision makers and other stakeholders into the future.

During the discussion period, a question was raised on the threat to vertical integration between fishers, processors and consumers and how the shift in species available for fishing due to climate change will affect this. A way to tackle this can be seen by looking at Hake as an example in creating fishing opportunities for the species that are abundant and then successfully selling them to the consumer. There was also a discussion on 'where local becomes too big'. This depends on how we define 'local' and the how closely one is connected to the harvester.

The audience was keen to learn on how the work done by Kanae Tokunaga can

be implemented into fisheries governance on a higher level. We can, for example, look at the systems of governance in Maine, US and the way it is based on a co-management system, and keep in mind that decisions should be made at the level that is most relevant. Another question centered on how to define success in the I-ADApT case studies of top-down versus co-management. The key here is to look at the outcomes-based approach to define success, how the objectives were defined and how they were met. A point was made of how the need for adaptation occurs at multiple levels but that the onus of adapting often falls on the small-scale fishers themselves. It is essential to learn from all of the perspectives, in terms of getting adaptation right, to understand who is to adapt and at what level. One way to remedy this is by changing the way small-scale fishers participate in governance, with a shift from co-management to decision making by enabling co-activities of harvesters and giving power and responsibility. The discussion period concluded with a question on “who is a harvester and how do you become one?”. Unfortunately, this depends on money, which creates a barrier to access for new fishers.

Take-home messages:

- Community supported fisheries help small-scale fisheries and fishers become more resilient to supply chain shocks and more adaptive to change.
- A shared understanding of resources, the ecosystem and economics is key for an adaptive and resilient fishery.
- Industry level leadership and governance is needed to meet the future challenges; one way to do this is to set up a regional governance body for community-based fisheries.
- “Local” is about building relationships and connections between consumers and harvesters.
- Shifting from co-management and giving decisions making power and responsibility to the fishers will facilitate adaption in the future.

Plenary #2 - Making Connections for Get SMALL Right

Monday, June 20th

Speakers:

- Tony Doyle, FFAW-Unifor, Canada
- Dean Bavington, Memorial University, Canada

- Hannah Harrison, University of Guelph, Canada
- Jennifer Ford, Fisheries and Oceans, Canada
- Erin Carruthers, FFAW-Unifor, Canada

Chair/Moderators:

- Evan J. Andrews, Memorial University, Canada
- Cynthia Grace-McCaskey, East Carolina University, USA
- Katia Frangoudes, University of Brest, France

Introduction

This plenary explored what it means to be ‘small’ in coastal and marine systems, and how we can better understand and support connections to understand diverse interactions in coastal social-ecological systems. Making connections is at the heart of making sense of small-scale fisheries, including their relationships with other aspects of coastal and marine sustainability. The 3rd World Small-Scale Fisheries Congress enriched many discussions about the meaning of ‘small’, drawing attention to relationships among coastal and marine aspects often thought of as too ‘small’ to require broad attention, including rural families, dependent communities, local markets, and local governance. During the 4th World Small-Scale Fisheries Regional Congress we had an opportunity to exchange knowledge and reflections, and to ask new questions about the meaning of ‘small’ in North American contexts, where small-scale fisheries and these coastal connections are under-recognized. To take advantage of this opportunity, this plenary sought to foster and enable connections among ideas to enrich and broaden discussion about how to Get Small Right in complex coastal and marine systems. As such, the plenary built on previous plenaries and sessions, and fed into discussions about the future. The plenary featured three presentations from researchers and practitioners, followed by discussion period. Then, guided by key questions, attendees discussed what they see as key connections for small-scale fisheries in coastal and marine systems.

Summary

First up was Tony Doyle, of FFAW-Unifor, speaking on his experiences and perspectives of being a small-scale fisher in the Bay de Verde community in Newfoundland and Labrador. He opened with the story of when he started fishing and how he now fishes with his son and grandson. Tony highlighted the

devastating effects of the cod moratorium and the recent uptake of the snow crab fishery and how it has brought life back into the community. He detailed a day in the life of a small-scale fisher in Bay de Verde, which can mean a 2 AM start for a full day of fishing. Tony connected the dots on how in the community, when the fisheries do well, the fishers do too and the whole community benefits. These benefits can then travel all the way to the larger urban centres such as St. John's, and across the island. Finally, he highlighted the issue with the younger generations being priced out of the licences and equipment, making it difficult for them to start up in the industry.

Dean Bavington, Memorial University, spoke next and opened with his childhood experience of growing up in a fishing community in St. Anthony, Newfoundland and Labrador. He asked himself the question *"How can we make connections to get small right?"*. This brought him to thinking of the importance of understanding the history of capitalism and colonialism in this context. Specifically, colonialism through language. He uses the term 'food fishery', which is how locals refer to the officially termed 'recreational groundfish fishery' in Newfoundland and Labrador, as an example. Dean argues that this term opens the fishery up to fishers from off the island to come and pay to fish for cod and can push the locals, who use it as a food source, out. Language becomes important in this regard, as it can separate the locals and their right to fish and recreational, or non-sustenance fishing.

"In Newfoundland fishing communities codfish is just called fish."

Hannah Harrison, Guelph University, described how she grew up in Alaska in a salmon fishing family. Now she works on community centred fishery research on the Great Lakes. The commercial fisheries on the Great Lakes can be defined by their regionality and they are becoming so small that they are in danger of disappearing. Hannah showcased the trailer for a film which will be out next year, called *"The Last Boat on the Lake"*. The film speaks to the challenges faced by the small-scale fishers on the Great Lakes, as well as other small-scale fishing groups around Canada.

"Truly locally caught fish by truly local people" – Fisher in the film *'The Last Boat on the Lake.'*

Hannah ended her presentation with the fact that its not too late to build a future for the small-scale fishers of the Great Lakes by fostering strong connections with the public, including those who eat the fish.

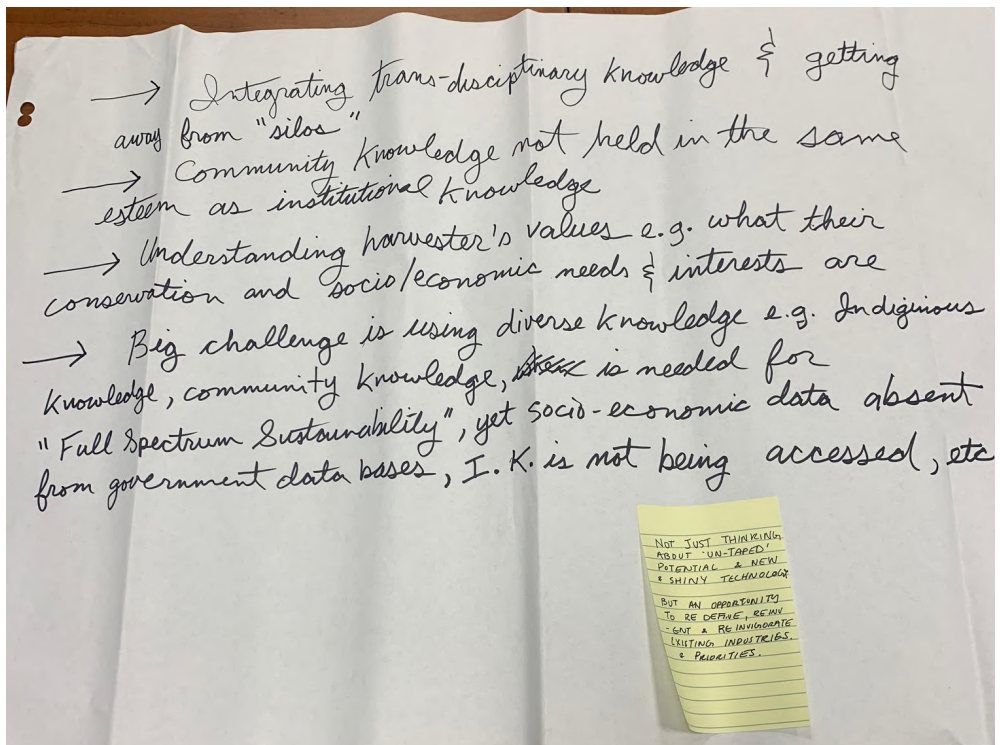
Jennifer Ford, from DFO, provided background on key inshore fisheries policies now incorporated into regulations, including Fleet Separation, Owner-operator and Preserving the Independence of the Inshore Fleets policies in Atlantic Canada. She also brought the congress participants through some of the challenges of inshore regulations implementation including high expectations from industry, the volume of administrative work for licence holders, and the implications of high market values for licences.

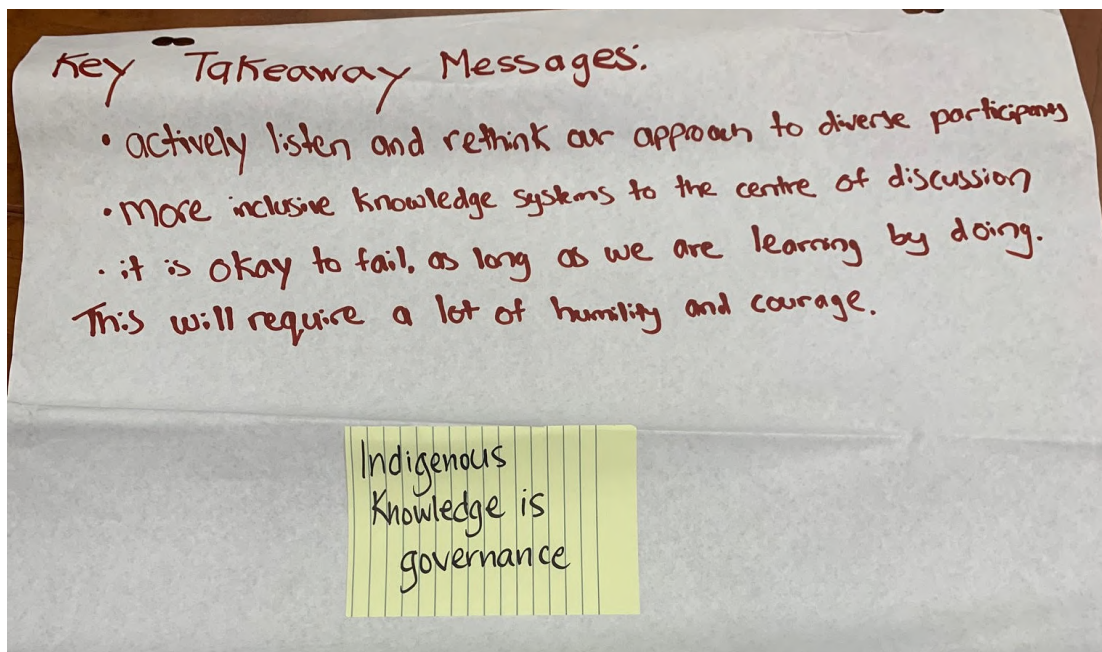
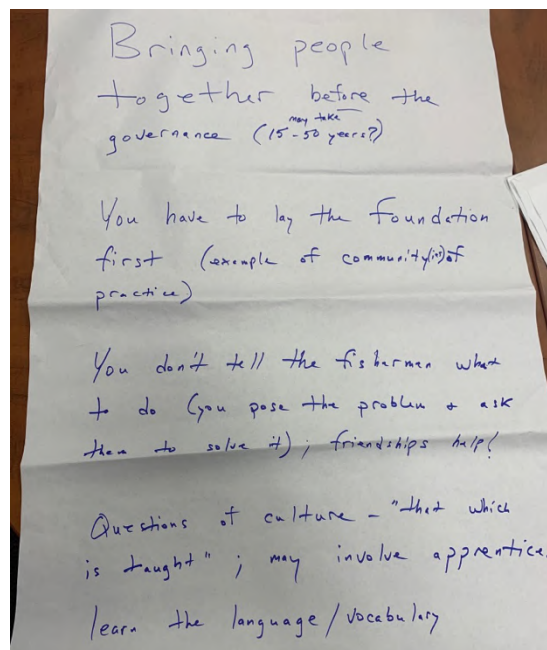
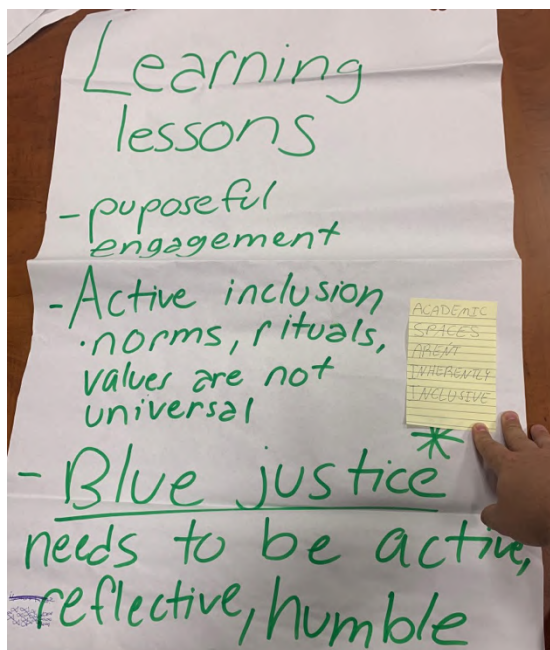
Erin Carruthers, from Fish, Food and Allied Workers, wrapped up the plenary presentations with 'Building and Maintaining Sustainable and High-Value Fisheries in the Gulf of St. Lawrence'. She emphasized the importance of making connections among fisheries, species, communities, governments, and fish harvesters while looking at shrimp, halibut and red fish, specifically in the Gulf of St. Lawrence. How do these fisheries impact the inshore fishing communities? Erin emphasized the importance of highly targeted fisheries, such as the developing redfish fishery, and continuing to avoid catching undersized fish and bycatch. By opening multiple fisheries that work alongside each other, the sustainability of the fisheries becomes more robust, and hence creates stable incomes for harvesters and communities who rely on the Gulf of St. Lawrence for a living.

The discussion period opened with a display of the notes taken throughout the session (see images below) and with a question to the session participants on what connections they drew among the panelists' presentations and fisheries in their own area. Connections were drawn between the first and second plenary, with the idea that protecting communities is key as well as the idea of democratic organizations for fisheries and representation of the fisheries industry. It was added that fisheries from around the world seem to have a common issue: a lack of young people coming to work in small-scale fisheries with an aging fisher population. Who will catch the fish in the future? Some remarked that we are in danger of losing the heritage and culture of fishing. A fish harvester from Lake Superior, spoke on the creation of the Treaty back in 1850, which had a representative from the First Nation secure the rights for them to fish in Lake Superior as they had been for many years before. This led to how including local fishing experts in First Nations when studying a fishery, such as on Lake Superior, is the most important thing to remember. The discussion period wrapped up with an emphasis on the importance of fish health over fishery profit.

Take-home messages:

- Language is important as it can separate the locals and their right to fish from recreational, or non-sustenance fishing.
- Making connections among fisheries, species, communities, governments, and fish harvesters by opening multiple fisheries that work alongside each other. In turn, the sustainability of the fisheries becomes more robust and hence creates stable incomes for harvesters and communities.
- Protecting communities is key to protecting small-scale fisheries.
- "Who will catch the fish?". A common issue with small-scale fisheries around the world is the aging fisher population and the need to continue to pass knowledge down to future generations.
- Including the local fishing experts when studying a fishery is key for making connections.





Images of notes taken throughout the Making Connections for Getting SMALL Right discussion session.

Day 1 Summary

Tuesday, June 21st

The day one summary started with some introductions as to who the congress attendees were and where they were from. Congress participants were then led through what was discussed during day one. A key question was asked, “What are we trying to get right?” Attendees saw the interconnectedness of ‘adaption’, ‘small’ and ‘governance’ and the importance of different types of governance, including participatory, regional and community-centred governance. The need to highlight more success stories to bring people into the industry was emphasised. National Indigenous Peoples Day was then acknowledged, and the congress participants were reminded of the screening happening that evening, of the film ‘Lake Superior Our Helper, Stories from Batchewanaung Anishinabek Fisheries’.

Plenary #3 - Step Zero for Getting Marine Conservation Right

Tuesday, June 21st

Speakers:

- Erica Porter, Fisher, Canada
- Tyler Eddy, Memorial University, Canada
- Brice Trouillet, Nantes University, France
- Patricia Clay, NOAA, USA

Chairs:

- Patricia Pinto da Silva, NOAA, USA
- Evan J. Andrews, Memorial University, Canada

Introduction

This plenary presented diverse perspectives about marine conservation in Canada, USA and across the Atlantic as means to understand research and policy opportunities to build capacity for inclusive marine conservation. Marine and

ocean users and leaders, whether Indigenous or non-indigenous, inshore and offshore industries, environmental organizations or community groups, may have different perspectives, visions and values related to marine and ocean conservation. Non-users may be latent in the discussion about marine conservation, even though they may feel like they too have something to contribute. While groups may agree that some level of conservation is desirable, what that means in practice often differs based on group values, priorities, and concerns, as well as different visions for the ocean. Perspectives that broaden the view of marine conservation are critical for collaborative planning of marine conservation in Canada, as it aims to meet its Marine Conservation Targets (MCT) and conserve 25% of the oceans by 2025 and 30% by 2030. To help facilitate a broad and inclusive view of marine conservation, to exchange lessons with conservation efforts elsewhere, and to foster opportunities for future research and practice, this plenary brought together representatives from diverse groups and sectors to share their conservation story, discuss their vision for marine conservation, and talk about pathways for action.

Summary

The session opened with Erica Porter, small-scale fisher and science technician in Nova Scotia, speaking on her experience as a fisher turned scientist working in the Minas Basin.

“The river is not just muddy water but a network of life breaking down the barrier between people and the sea.” – Erica Porter

Beginning with an introduction to the Minas Basin, Erica referred to ‘Step Zero’ as ‘working together’ and discussed how different knowledge systems need to be used alongside each other for successful fishing, surveying and conservation efforts. These three knowledge systems include those from Indigenous, local and academic aspects. Erica used the Atlantic Tomcod from the Minas Basin as an example. She described how the Tomcod was important fish species for the Mi'kmaq community as the only fish on their calendar. She discussed how local knowledge let's them know when the Tomcod spawns and when they are most abundant. Working together with the different knowledge systems is the ‘Step Zero’ in conserving fish habitats, which helps the fishing livelihoods of communities such as those found in the Bay of Fundy, Nova Scotia in the long term.

Tyler Eddy, of the Fisheries and Marine Institute of Memorial University, spoke on the project led by his student on principles and approaches for ecosystem-based fisheries management. He posed an important question in regard to marine conservation by asking *“What are we conserving?”* When thinking of experiences with the natural world that are passed down through the generations, he asked *“What are our priorities?”*

The next speaker was Brice Trouillet, University of Nantes, in France. He spoke about his contribution to the ‘Step Zero’ for Getting Conservation Right from across the Atlantic with an important message:

“We do not manage nature; we only manage people who are trying to conserve nature.” - Brice Trouillet

Brice also brought up the important point that ‘doing less’ in terms of conservation ‘costs much more’.

Finally, Patricia Clay, from NOAA, emphasized the importance in collecting data on the people in fishing and not just the fish, but that the next step from ‘Step Zero’ is to take these voices into account when making decisions on the conservation of the marine environment.

The discussion session started with a point on collecting data on the people in fisheries and how there has been ongoing social impact statements for over 30 years but nothing changes. The rules and regulations fail to take the human side into account. The audience was keen to know *“if we get this data that we say we don’t have, what’s going to change? And how? Why?”*. As a response to this, a point was made on how numerical data can make it easier for council members to compare data across the different levels such as ecological and economical. Next, an important question was asked of the panel *“how do we not trade-off outcomes by including people?”*. The importance of engaging and integrating different types of knowledge and long-term cooperation was discussed in response. Other discussion questions included *“What would make you feel that your work is important to the whole process of things like Ecosystem Based Management and conservation?”*. The importance of working together to get results for meaningful outcomes was highlighted. The discussion was brought back around to the idea of data on people with a point that it is not just about data viability but its also about power.

The discussion then carried on with the idea of power, specifically that even when all the right people are brought to the table, the same people are making the same decisions. The question was asked on “*how do these historically un-inclusive systems, like a stock assessment process, actually foster these various ways of knowing but actually applying this knowledge to decision making?*”. It was emphasized that decisions should be made collectively and that the decisions should not be made until all involved are in agreement. Next, a question was asked of how First Nations can begin to make decisions on issues such as the addition of Deep Geological Repository to store nuclear waste in their fishing areas. This was further discussed, and an acknowledgement was made to the challenges with building new methods to include Indigenous and local knowledge into the decision making and how DFO can be slow to change. Additionally, it was discussed that by using ecosystem-based management, the effects that new projects will have on the fish species and their habitats can be considered and help to guide the decisions. The importance of perseverance when being faced with these difficult decisions for local harvesters was highlighted. A question was raised on how the rise in technology will impact the small-scale fisheries, coastal communities and the empowerment that they are trying to fight for. The key is to protect small-scale fisheries from the impacts if this is the case. Another point was added that large scale fisheries may move towards automation but that fishing by people will remain a core part of small-scale. The session participants were then reminded that technology is not all bad, as things like counter-mapping experiences, for example, can help the small-scale fishing sector and may shift the power structure.

Take-home messages

- Working together with the different knowledge systems is the Step Zero in conserving fish habitats, which helps the fishing livelihoods of communities.
- Engaging and integrating different types of knowledge and long-term cooperation is necessary if we are going to get conservation right.
- That ‘doing less’ in terms of conservation ‘costs much more’ moving forward.
- Collecting data on the people in fishing, not just the fish, to take these voices into account when making decisions on the conservation of the marine environment.

- Even when all the right people are brought to the table, it is still the same people making the same decisions. Decisions should be made collectively and should not be finalized until all involved are in agreement.

Plenary #4 - Getting GOVERNANCE Right

Tuesday, June 21st

Speakers:

- Barbara Neis, Memorial University, Canada
- Bonnie McCay, Professor Emerita at Rutgers University, USA
- Madeleine Hall-Arber, Massachusetts Institute of Technology, USA

Chairs:

- Kristen Lowitt, Queen's University, Canada
- Susan Squires, University of North Texas, USA
- Prateep Nayak, University of Waterloo, USA

Introduction

To be successful, at the heart of governance is collaboration. This session considered joint governance among communities, government, civil society, and academic organizations engaged in small-scale fisheries. The first part of the session featured a keynote panel of speakers with a broad range of experiences on small-scale fisheries governance issues and considerations including stakeholder rights, knowledge acquisition and sharing, the impact of local and regional values, and the importance of inclusion. They also spoke about big picture issues framing governance in a systems perspective.

Summary

“Getting governance right is not an objective for the faint heart.” – Barbara Neis

Barbara Neis opened up the plenary session on governance with an important statement, acknowledging the complexity of governance and the discussions

around it. She went on to give a local example of how governance can be such a wicked problem, the Newfoundland cod collapse and subsequent moratorium. How do we fix these problems through governance? She added that post-collapse governance needs to include communities' voices at the table when discussing fisheries and how they should be governed. Moving forward, can we get governance right without ongoing, grounded collaborative engagement, guided by careful attention to and strategies for engaging with power dynamics from local and global scales?

Bonnie McCay joined virtually and spoke on her perspectives on 'Cooperatives – experiments in getting governance right'. She provided multiple examples from different areas she has researched, including The Fogo Island Cooperative of Newfoundland and Labrador. In summary, Bonnie explained that getting governance right can be helped by following specific principles and ensuring others do the same. Being ready when fish stocks collapse or when the rules and regulations change. This, alongside fair and equitable ways to adapt to these changes is an important step to getting governance right. This may mean investment into community resources such as money, time, knowledge and creativity through community driven organisations like cooperatives.

Madeleine Hall-Arber, of Massachusetts Institute of Technology, introduced her talk 'Seeing Equitable Governance – taking lessons learnt from large scale fisheries,' explaining how it is sometimes useful to make comparisons. She then went on to detail an example of this with owner operated vessels in the sea scallop fleet in New Bedford. Here, there is a stark contrast between the large groups of vessels and single vessel ownership. This gives an insight into what the small-scale fishers can learn from large scale operations. Madeleine finished her talk by emphasising that fisheries governance done right will lead to resilience for small scale fishers and their communities.

The discussion period started with a statement from the Saugeen Ojibway Nation on how many current government agencies put policy forward without consulting the First Nations and how this was reflected with the absence of Indigenous representation on the governance panel, as well as in other aspects of the Congress and incorrect timing of the acknowledgement of Indigenous Peoples Day. The participants from the Saugeen Ojibway Nation then decided to leave the Congress as a result of their contention that there was a lack of Indigenous representation in the Congress, ending with a hopeful statement, *"Maybe we can get it right next time"*.

The congress participants then heard reflections on a comment from the previous panel on the aging fisher population due to continued marginalisation and a lack of compensation for the fish they catch. It was emphasised that the community does not just fish for the money that they need it to keep the traditions going. As well they heard how the congress is a space to meet new people and listen to different perspectives as well as the principles which the congress works by. These include providing space that is diverse and inclusive, and how like most conferences, it is an open call to share information and exchange knowledge, with collaboration and networking so we can move forward on issues together.

A question was asked on when it comes to regulations, laws and how we govern fisheries, are there any examples where fisheries regulation has helped or harmed the societal or cultural side of fisheries and what could be done to improve legislation. This was answered with a reminder of the cod collapse and the importance of understanding and continual learning about the dynamics of a fishery. The harm to small-scale fisheries often comes from the failure to investigate the complex patterns in fisheries and the missed opportunities due to a lack of research into other species that can be fished or continued to be fished by small-scale fisheries.

In response to the Saugeen Ojibway First Nation's decision to leave, Evan J. Andrews described, and apologized for, an earlier interaction where he felt he did not listen well enough to the delegation's concerns. He started a broader conversation by asking the panelists how to get interactions right for getting governance right and the floor was opened to whoever wanted to speak or comment on that thought. Madeline made the point that it was the importance of asking first and listening, and when unsure, to ask people how they want to be represented. Then, members of the International Organizing Committee discussed how the committee could have more strongly considered Indigenous representation in Congress activities. The participants were reminded of uncomfortable moments in projects that involve Indigenous groups with different ways of knowing and sharing knowledge and that if it seems easy you are not doing it right. To sum up the discussion period, it was added that *"we changed the way we talk about First Nations but not the way we do business"*. Ratana Chuenpagdee invited attendees to continue reflecting and discussing, and urged attendees to consider the importance of changing the way we govern and moving past the talking stage.

Take-home messages:

- Investing in community resources is key to fair and equitable ways for adaption to change and an important step in getting governance right.
- Investment into community resources such as money, time, knowledge and creativity through community driven organizations like cooperatives is one step in Getting Governance Right.
- Fisheries governance done right will lead to resilience for small-scale fisheries and their communities.
- We need ongoing, grounded collaborative engagement, guided by careful attention to and strategies for engaging with power dynamics from local and global scales.
- Getting interactions right as a tool to getting governance right.
- Including everyone in the discussion, knowing when to listen and when to ask.

Day 2 Summary

Wednesday, June 22nd

The day two summary was opened with the call to participants to share their thoughts and opinions. Participants were provided with flip charts to capture the conversation at their table. One participant spoke on the importance of engagement processes and ways to include groups from different cultures, cultural norms and how to accommodate for those differences. Another mentioned the volunteers that can sit in on decision making processes within the healthcare system in Newfoundland and Labrador, and how this model could be used by DFO to include fisher groups and representatives. Other participants mentioned important points such as the need to integrate transdisciplinary knowledge and the fact that community knowledge doesn't tend to be held to the same esteem as institutional knowledge. They also spoke about the benefit of engaging with and understanding the values of those most affected, such as small-scale harvesters. The big challenge is using diverse knowledge e.g., Indigenous knowledge, community knowledge, needed for "Full Spectrum Sustainability", yet the socio-economic data is absent from government databases. Another important note was made on not just thinking about 'untapped' potential of technology but rather working to redefine, reinvent and reinvigorate existing industries and priorities. Key terms such as 'active listening', 'purposeful engagement', 'more inclusive knowledge systems', 'reflective and humble', and 'learning by doing'. An important acknowledgement of 'bringing people together before the governance', which could take many years. Then, a vital point was raised on the importance of reflection, relationship mending and connecting the dots among all of the five 4th World Small- Scale Fisheries congresses. Key messages also included to actively listen and rethink our approach to diverse participation, the need for a more inclusive knowledge systems to be brought to the centre of discussion, and that it is okay to fail, as long as we are learning by doing, which requires a lot of humility and courage. The key word from the Asia-Pacific congress was 'Together'. The congress participants were then challenged to think of a take-home key word for this congress.

**Plenary #5 - Getting BLUE ECONOMY Right:
Food, Fishing, and Visions for the Blue Economy**

Wednesday, June 22nd

Speakers

- Robert Pascal, Fisheries and Oceans, Canada
- Sarah Shoffler, NOAA, USA
- Charles Mather, Memorial University, Canada
- Peter Halmai, Fishermen's Marketing Association San Diego, USA
- Chris Milley, NEXUS Coastal Resource Management, Canada

Chairs:

- Gerald G. Singh, Memorial University, Canada
- Joshua Stoll, University of Maine, USA

Introduction

As people, corporations, and governments alike begin to operationalize their visions of the Blue Economy, pressing questions emerge about which ecosystem services, economic benefits, and sociocultural values will be foregrounded and who stands to benefit most. Here, we take the perspective that Getting a Blue Economy Right requires explicit attention to aquatic food production and the contributions, needs, and experiences of seafood harvesters, including those engaged in small-scale fisheries. In this plenary, we heard about efforts and processes in Canada and the US to plan the Blue Economy as well as how considerations of 'Blue Justice' and 'Blue Communities' are being taken into account. This session sought to stimulate research and policy dialogue about how to situate small-scale fisheries and aquaculture in the Blue Economy, including understanding community connections.

Summary

First, Robert Pascal, of the Blue Economy Strategy within DFO, gave the Canadian federal perspective. He opened with the World Bank's definition of the Blue Economy:

“The sustainable use of ocean resources for economic growth, improved livelihoods, jobs, and ocean ecosystem health.”

Robert introduced the “What We Heard” report, which was released this year, that asked and engaged with stakeholders around Canada to find out what they want in Canada’s Blue Economy Strategy. According to Robert, the voices of coastal communities played a big role in the report. Involving the local communities in the creation of the Blue Economy Strategy is key as the strategy will be lived out in these communities, and not just in Ottawa.

Sarah Shoffler, of NOAA Fisheries, presented on the “National Strategy for Seafood Sector Resilience and Competitiveness”. Sarah opened with explaining the challenges faced by the US seafood industry, including in recent times the COVID 19 pandemic and the affects of climate change. Sarah went on to detail what the plan is to mitigate for these kinds of challenges in the future. NOAA laid out four distinct goals in order to do this. They plan to mitigate for future shocks to the industry by building resilience through workforce development, building fair and sustainable international seafood trade systems, collaborative marketing and by modernizing infrastructure.

Charles Mather, who conducts research on aquaculture at Memorial University, introduced the congress participants to aquaculture in Canada, which is made up of 80% salmon aquaculture. The Blue Economy Strategy is seen as a huge opportunity for expansion by the aquaculture industry, who recently released their own Blue Economy plan. Charles went on to challenge the ‘New Frontier’ narrative that is being used by the aquaculture industry when discussing expansion in Canada. He emphasized the importance of an equitable Blue Economy Strategy that prioritises justice for communities around Canada through reconciliation and restitution.

Next to speak on the Blue Economy panel was Peter Halmay from the Fishermen's Marketing Association in San Diego. He started with playing a song by Stan Rogers, ‘Make and Break Harbour’, about the cod collapse in Newfoundland and stressed an important lesson that should be learnt:

“Listen to the small-scale fishers.”

With 140 fishers in San Diego, this group is under threat from gentrification of the waterfront. Peter expressed his hesitancy towards the Blue Economy Strategy as it may mean more trade offs for the fleet in San Diego. He ended his talk with expressing his hope that the small fishing communities are not pushed out when the Blue Economy Strategy is implemented, and that small-scale fishers' existence for future generations is prioritized and supported.

Chris Milley, of NEXUS Coastal Resource Management, closed the plenary panel discussions with an important message:

"We are having a strategy to develop a strategy on something which we don't know what it is. We haven't defined what we mean by Blue Economy."

Providing food for the local community through supply from small-scale fisheries promotes food security, economic resilience, and the surplus can bring in extra revenue. Chris went on to explain that in terms of small communities, especially Indigenous communities, having a say in the future of their resources, government intervention is heading in the wrong direction.

"Good intentions are creating disempowerment... Decolonization is recognizing the value and the merit of independent governance systems working together."

Taking this approach to Canada's Blue Economy Strategy will foster healthy livelihood fisheries that are managed by Indigenous nations to meet their own objectives that are built on generations of traditions and knowledge. Chris stated that moving forward, we have to allow the Blue Economy negotiations and engagement across sectors for issues such as marine spatial planning.

The discussion period started with a question from the audience around the meaning of economy when we speak about Blue Economy. This was answered with a point on how this issue comes up when you look at Blue Economy definitions and ideas across borders as different nations have different definitions. The problem is often when we measure economy in terms of GDP for economic success and hence people equate economy with money. But in fact, the economy is the institutions, the education, the health condition, the well being of the population. Next came a comment from the audience on the idea of decarbonizing the fishing industry and when we talk about decarbonizing

fisheries in Canada, what does that look like in practice for small-scale fisheries? A response came with the fact that the small-scale fishers in San Diego have been given a deadline to upgrade their engines and systems with technologies that are not yet available to lower carbon emissions. Inconsistencies in government policy are an issue here but they are working on reducing those inconsistencies and having the different sectors policies align. Next came a question from the online participants, specifically on the seafood marketing goals presented earlier, on how much is regional cooperation being considered when it comes to the seafood marketing goals? Most of the seafood marketing goals are designed for the US market, but they are developing strategies that include the broader seafood industry.

An important question was asked about the way we use language in the context of the Blue Economy, specifically how some of the panelists used the term 'leadership'. If we are aiming to develop a sustainable Blue Economy, why are we using terms like 'leadership' instead of 'cooperation'? Many agreed with this and recognised other problematic language used such as 'untapped-potential', 'frontier' and 'opportunities' which creates the idea that we need to extract more from our environment. A participant remarked how a word like 'frontier' is highly problematic and connected to histories of colonialism and Indigenous extirpation. Other congress participants appreciated language as an important part of the conversation and that it was the first time they had heard the word leadership be perceived in that competitive way, instead of in terms of values and collaboration. The importance of using terms such as social and political innovation instead of innovation in terms of technology was discussed. The discussion session wrapped up with last comments from the panelists with similar sentiments including the importance of multiple perspectives on the Blue Economy Strategy, ocean literacy, and engagement as more than one meeting or strategy but a continuous process.

Take-home messages

- Involving the local communities in the creation of the Blue Economy Strategy is key as the strategy will be lived out in these communities.
- The importance of an equitable Blue Economy Strategy that prioritizes justice for communities around Canada through reconciliation and restitution.

- Prioritizing and supporting small-scale fishers in the Blue Economy Strategy will be a vital step for securing the future generations of fishers.
- Decolonization is recognizing the value and the merit of independent governance systems working together. Taking this approach to Canada's Blue Economy Strategy will foster healthy livelihood fisheries that are managed by Indigenous nations meeting their own objectives that are built on generations of traditions and knowledge.
- Multiple perspectives on the Blue Economy Strategy, ocean literacy, and engagement as a continuous process are important components to getting it right.

Plenary #6 - Exploring New Transdisciplinary Frontiers to Get the Future Right

Wednesday, June 22nd

Speakers:

- Ken Paul, Wolastoqey Nation of New Brunswick, Canada
- Rob Stephenson, Fisheries and Oceans, Canada
- Hekia Bodwitch, Dalhousie University, Canada
- Momo Kochen, Momo Kochen, Future of Fish, USA

Chairs:

- Julián Idrobo, Aurora College, Canada
- Megan Bailey, Dalhousie University, Canada

Introduction

This plenary brought together researchers, industry, and practitioners to discuss what is needed to Get the Future Right for marine and freshwater social-ecological systems in North America. Calls are emerging for societies to better anticipate and address future changes to fisheries and their associated communities and economies in Canada and abroad. Interacting drivers such as resource use, climate change, practices of settler colonialism, ageing infrastructure, and economic development are intensifying the complexity and uncertainty of changes to ecosystem health, livelihoods and human wellbeing.

Advancing sustainable futures requires collective actions in the present, informed by lessons learned about governance in the past. But equally so, it requires a willingness to transcend historical and present-day crisis management models of reactive fisheries governance and a commitment to work collaboratively to create, operationalize, and sustain a joint vision of prosperous futures for small-scale fisheries. Designing those futures requires diverse knowledge systems, values and ways of being, including Indigenous peoples, their governance systems and their struggles for decolonization and resurgence. New transdisciplinary interactions are needed to support more proactive governance of these systems. This plenary aimed to encourage those interactions through a mixture of speakers who present different ways of thinking, navigating and steering the future.

Summary

The first speaker for this session was Ken Paul of Wolastoqey Nation, on Finding Balance to Getting it Right. He started with a background of the creation story and the significance of the tree, or the Saint John River to the Wolastoqiyik, the People of the Beautiful and Bountiful River. Ken reminded the congress participants that all Canadians are treaty beneficiaries. He gave a history of colonization and treaty rights in Canada and then explained the meaning of an Indigenous Knowledge Systems, which are place-based, language-based, culturally rooted and require high levels of respect towards Elders and Knowledge Keepers. Ken detailed the goals towards First Nation fisheries, which are rooted in natural cycles, to hold respect for relations (including fish, birds and other wildlife) and secure food sovereignty and food security, as well as create partnerships and diversity in employment opportunities. He gave a cultural grounding, on mental, spiritual, emotional and physical health and their connections to mind, spirit, heart and body and finally the connection to politics, culture, community health and economic health. These can then be connected to knowledge systems, the environment, biodiversity and technology. All of these connecting points on the wheel need to be in balance for a healthy system. He urged the conference participants to keep these in mind when thinking of the future of small-scale fisheries.

Rob Stephenson, of DFO, spoke next with his talk “Transdisciplinary frontiers: how can we get the future right?”. The big challenge, Rob argued, is the future governance of social-ecological systems facing change and a need for ‘Full

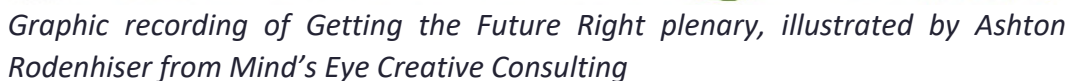
spectrum' sustainability. That is sustainability that looks at ecological, economic, social-cultural and institutional or governance aspects. In his opinion, to get the future right, we need to facilitate participatory governance arrangements and use transdisciplinary methods, articulate the desired ecological, economic, socio-cultural and governance outcomes and explore preferred futures.

Next, Hekia Bodwitch, from Dalhousie University, talked on "Seafood sovereignty and the future in small-scale fisheries". She spoke of the fishing rights of the Māori in New Zealand and concluded with the fact that when mismatches exist between the formats where knowledge is held and how it is incorporated into policy and planning, procedural injustices will persist. Seeking out fisher' knowledge to understand fishery outcomes can help to mitigate for this.

Momo Kochen, of Future of Fish, spoke on markets and what she has learned in her interactions with small-scale fishers and how they access markets. She emphasised the importance of listening at the community level and then working to bring their ideas to action. Markets based approaches came out of a frustration with governing bodies and a need for community participation in the functioning of markets. Most of the global attention for markets has been on large-scale fisheries. How do we support small-scale fisheries in rethinking market-based approaches? We stop, listen and learn. Momo ended by emphasising the need to bring the social, economic and environmental components together for small-scale fishers if we are going to get the future of small-scale fisheries right.

The discussion period started off with asking how we can have governance for small-scale fisheries that can deal with time, which can anticipate and proactively advance things like justice. How do we move forward to get the future right? The first thing we need to do is articulate what we want because we work in a system that is outcome based and then we can know which ones we are achieving, and which ones we are not. It was added that the recent interest in self governance and the importance of having different groups that can implement varied types of governing initiatives. Then, the Small-Scale Fisheries Guidelines were referenced (<https://www.fao.org/voluntary-guidelines-small-scale-fisheries/guidelines/en/>), and how the guidelines brought people together, listening to people and then putting that into a framework that can be worked from. Combining these methods with others that have been developed will bring

"Local people know what's best." – Ken Paul



- Facilitating participatory governance arrangements and using transdisciplinary methods, articulating the desired ecological, economic, socio-cultural and governance outcomes and explore preferred futures.
- In many traditional knowledge systems, the environment, biodiversity and technology are all connecting points on the wheel which need to be in balance for a healthy fisheries system.

- There is a need to bring the social, economic and environmental components together for small-scale fishers if we are going to get the future of small-scale fisheries right.
- Self-governance and local governance are the way to deal with issues and challenges that will arise in small-scale fisheries into the future.

Plenary #7 - Getting Everything Right

Wednesday, June 22nd

Speakers:

- Keith Sullivan, FFAW, Canada
- Kimberly Orren, Fishing for Success, Canada
- Kevin Anderson, Fisheries & Marine Institute of Memorial University, Canada
- Paul Foley, Memorial University, Canada

Chairs:

- Evan J. Andrews, Memorial University, Canada
- Ratana Chuenpagdee, Memorial University/TBTI, Canada

Introduction

The final plenary explored Congress highlights and key prospects for small-scale fisheries in North America. In three days, over 65 presentations/sessions and six plenary sessions explored how to get right adaptation, small, governance, marine conservation, the Blue Economy, and the future. This final plenary was an opportunity to bring together outcomes from this three-day journey, and position new trajectories to get everything right for communities, science, and policy.

Summary

The first speaker, Keith Sullivan, president of Fish, Food and Allied Workers Union, started with an introduction about FFAW, that it represents over 15,000

people in the fishing communities of the province and mostly inshore fish harvesters. Keith made the important point that 'Getting IT Right' means learning from the past, specifically in Newfoundland, the cod moratorium. He added that 'Getting IT Right' also means incorporating scientific inclusion, food security, protecting owner operators, and industry succession planning.

Next was Kimberly Orren of Fishing for Success, who first shared some art, a print of a fish that was caught in Petty Harbour, NL. Kimberly went on to emphasize the importance of a sense of place and heritage for children. One way to foster this is to facilitate outdoor exploration with activities, such as fishing. She tied in her sense of place closely to fishing, catching her first fish and the joy of bringing home a meal to her mother. Kimberly reiterated the idea of 'fishing as a shared human heritage' which needs to be made more accessible to marginalised folks, something that Fishing for Success works hard to achieve.

Kevin Anderson spoke next and opened with *"fishing is about the individual, the family, the community and territory"*. This leads into the point that the concept of fish as a commodity that is owned is an inappropriate way of understanding the global reality of fisheries. On this point, Kevin quoted Chief Dan George *"Nothing belongs to you, of what there is, of what we take we share"*. He added that this ties in with the misuse of the term stakeholder in instances where we should refer to people as rightsholders who fish on their ancestral lands. He ended with the idea that 'Getting It Right' may mean looking back at the things that we have already achieved.

Paul Foley, of Memorial University Grenfell Campus, set up his talk by pointing out the importance of putting science and policy into the service of community. To have policy in service of community we need to get the politics right, how do we do this? Politics barely get a mention at fisheries conferences due to various reasons such as the necessary neutrality of government employees involved in fisheries, NGO's needing to remain relatively neutral so they can retain legal status and the apolitical nature of science and its methods. It is not about taking the politics out of science and policy but about getting the politics right. Paul concluded with the call for 'everything frameworks' that provide integrative and holistic ways to implement policies and include science, something which can not be done without the political system.

The discussion session started off with participants agreeing with changing the term from stakeholder to rightsholder. Then, the discussion moved to the issues with access in the lobster fishery, the biggest fishery in Atlantic Canada, and the quantification of traps. It was added that assessments for lobster fishery allowances should be based on what fishery, what place and what time and adjust to those. There was a recognition for the urgency to get things right but that sometimes imperfections and getting things 'wrong' can be just as important for moving forward. A direct question was asked on what was meant by bringing politics into the analysis. The response to this included a note on the continued reference to power at the congress but how there is a lack of rigorous analysis of those power structures. Then, the different ways people view power outside of the political institutions, such as in gender relations, and self determination was discussed. More congress participants agreed that politics should be part of the conversation and how the coastal communities feel separated from it and that it should be about amplifying the small-scale fishers' voices.

Another participant commented on the idea of the 'everything framework' and asked the panel how we can deal with these alongside unexpected problems that will be cropping up in the future, such as climate related issues. In response, the discussion turned towards the Ecosystem Based Management work being done by DFO and how an 'everything framework' is a challenge to think holistically about issues for small-scale fisheries. Another congress participant spoke on the importance of getting youth involved somehow in fishery as part of co-op work experience and praised the work that Kimberley does with the Girls Who Fish initiative. These early experiences of fishing and being out on the water can go on to inspire the next generation of environmentalists in the world. The discussion then moved towards the lack of acknowledgement of the women in small-scale fisheries and the roles they play. An audience member mentioned that in terms of 'getting everything right', getting the right people in the room is vital. A text was then read out from a member of the Chippewas of Nawash Unceded First Nation, which said that in terms of the response to the group's absence, *"it sounds like things are changing course and coming into port for repair, instead of floundering on the open sea"*.

Building on the gender issues raised in the discussions, the room was reminded that only about 20% of professional fish harvesters are women and less than 2%

of enterprises in Newfoundland are owned by women. Engaging youth in fishing can not only inspire them to take up the profession but through the transformative experience of fishing, youth will be inspired to follow careers in science, art and will carry that experience with them. Then, another congress participant added to the conversation that in terms of getting everyone involved, the rules of the game need to change and that direct interaction with the fishery is not the only way. Getting people involved can mean fostering an understanding of fishing and fisheries, through culture, habits and family, and an appreciation of the trade whether you come from a fishing background or not.

A final comment was added on what was taken from the last few days, including the number of people from different parts of the world who are interested in who gets access to fish and what it means to those people in the communities. A point was added on how different and yet so alike we all are, and that there are similar issues within small-scale fisheries all around North America. Some spoke of memories such as working at the splitting table by the water when young and being part of the fishing community while learning about the science of fish. Since the cod moratorium, that work by community members has largely been industrialised and those interactions are being lost. *“How do you reconnect everyone”* when those connections are lost to the changes in the industry.

Take-home messages

- ‘Getting IT Right’ means learning from the past, incorporating scientific inclusion, food security, protecting owner operators, and industry succession planning.
- Recognizing “Fishing as a shared human heritage” that needs to be made more accessible to marginalized folks.
- The idea that ‘Getting It Right’ may mean looking back at the things that we have already achieved.
- Putting science and policy into the service of community will be a vital step in getting it right.
- In terms of ‘getting everything right’, getting the right people in the room is vital.
- Getting people involved can mean fostering an understanding of fishing and fisheries, through culture, habits and family, and an appreciation of the trade whether you come from a fishing background or not.

CONGRESS PROGRAM

MONDAY, JUNE 20TH – DAY 1

OPENING REMARKS

Monday, June 20th, 09:30 – 10:20

Location: SALON A

Hosts:

- Paul Foley, Memorial University, Canada
- Evan J. Andrews, Memorial University, Canada
- Ratana Chuenpagdee, Memorial University, Canada

Opening and welcome remarks

- Welcome speeches from St. John's City, FFAW, DFO & MUN

PLENARY SESSION #1 Getting ADAPTATION Right

Monday, June 20th, 10:30 – 12:30 PM

Location: SALON A

Chairs:

- Maria Andree Lopez Gomez, Autonomous University of Barcelona, Spain
- Sarah Harper, University of Victoria / University of British Columbia, Canada

Small-scale fisheries in North America face many challenges yet have to potential to be resilient and adapt to changing social, economic, and ecological conditions. This interactive plenary session will feature several panelists exploring how to 'Get Adaptation Right', with a focus on access and infrastructure considerations, overcoming labour and market challenges, identifying knowledge/data requirements for adaptation planning, and highlighting innovative approaches and tools for responding to change, including examples of policies and programs that exist or are needed for adaptation in SSF. Session participants are invited to engage in dialogue with the panelists for a rich discussion on adaptation in small-scale fisheries, sharing their questions and insights from the places and experiences that they work and live.

Speakers:

- Sonia Strobel, Skipper Otto, Canada
- Kanae Tokunage, Gulf of Maine Research Institute, USA
- Rick Williams, Canadian Council of Professional Fish Harvesters, Canada
- Alida Bundy, Fisheries and Oceans, Canada

LUNCH (12:30-13:45)

PLENARY SESSION #2

Making Connections for Get SMALL Right

Monday, June 20th, 13:45 – 15:45

Location: SALON A

Chair/Moderators:

- Evan J. Andrews, Memorial University, Canada
- Cynthia Grace-McCaskey, East Carolina University, USA
- Katia Frangoudes, University of Brest, France

This plenary explores what it means to be ‘small’ in coastal and marine systems, and how we can better understand and support connections to understand diverse interactions in coastal social-ecological systems. Making connections is at the heart of making sense of small-scale fisheries, including their relationships with other aspects of coastal and marine sustainability. The 3rd World Small-Scale Fisheries Congress enriched many discussions about the meaning of ‘small’, drawing attention to relationships among coastal and marine aspects often thought of as too ‘small’ to require broad attention, including rural families, dependent communities, local markets, and local governance. Now, during the 4th World Small-Scale Fisheries Regional Congress, we have an opportunity to exchange knowledge and reflections, and to ask new questions about the meaning of ‘small’ in North American contexts, where small-scale fisheries and these coastal connections are under-recognized. To take advantage of this opportunity, this plenary seeks to foster and enable connections among ideas to enrich and broaden discussion about how to Get Small Right in complex coastal and marine systems. As such, the plenary builds on previous plenaries and sessions, and feeds into discussions about the future. The plenary will feature three presentations from researchers and practitioners, followed by an opportunity to ask questions. Then, guided by key questions, attendees will discuss what they see as key connections for small-scale fisheries in coastal and marine systems.

Speakers:

- Tony Doyle, FFAW-Unifor, Canada
- Dean Bavington, Memorial University, Canada
- Hannah Harrison, University of Guelph, Canada
- Jennifer Ford, Fisheries and Oceans, Canada
- Erin Carruthers, FFAW-Unifor, Canada

BREAK (15:45 – 16:15)

PARALLEL SESSION #1

Time	Session title
16:15 – 17:45	Parallel Session #1
	#1.1: Basic Income #1.2: Getting Fish Harvesting Policy Right #1.3: Getting Adaptation Right (I) – Contributed papers #1.4: Getting Small Right – Contributed papers

**Parallel session #1.1:
Basic Income**

Location: SALON B

Organized by:

- Kristen Lowitt, Queen's University, Canada
- Barb Neis, Memorial University, Canada
- Hannah Harrison, University of Guelph, Canada
- Deatra Walsh, Municipalities Newfoundland and Labrador

Speakers:

- Ryan Lauzon, Chippewas of Nawash Unceded First Nation, Canada
- Sonia Strobel, Skipper Otto Community Supported Fishery, Canada
- Rick Williams, Canadian Council of Professional Fish Harvesters, Canada
- Alyse Stuart, FFAW-Unifor, Canada
- Chalsie Kook-Marche, Mayor, Port au Port West-Aguathuna-Felix Cove
- Barbara Boraks, Coalition Canada

Synopsis:

This session will explore the potential for a basic income to support sustainable livelihoods in the fisheries sector. A basic income provides an income floor so that everyone can meet their basic needs with dignity. Undertaken as part of Coalition Canada's case for basic income series, the session will present an overview of the new case for basic income in the fisheries that is currently being developed. After a short overview of this case, we will hear from a panel of cross-sector fisheries representatives including union, government, and community members from across the country sharing their feedback and reflections on the potential for a basic income in the fisheries sector. A Q&A will take place at the end of the session to consider audience questions and provide opportunities for feedback.

**Parallel session #1.2:
Getting Fish Harvesting Policy Right**

Location: SALON C

Organized by:

- Barry Darby, Changing Course, Canada
- Helen Forsey, Changing Course, Canada

Speakers:

- Barry Darby, Changing Course, Canada
- Helen Forsey, Changing Course, Canada

Synopsis:

Bucking the tide of conventional fishery management, our organization Changing Course advocates an alternative harvesting policy framework that favours small-scale fisheries and is based on science, local knowledge and responsiveness to the ever-changing realities of the ocean. The current dominant approach to fishery management – calculating allowable catches and setting quotas – is flawed by untenable assumptions, and leads to ongoing failures. We propose a paradigm shift in fishery governance, aiming to optimize economic and social benefits while ensuring the sustainability of fish stocks and marine ecosystems. This session will present and discuss the fundamentals of our alternative harvest management approach, based on regulating fishing effort (controlling input) rather than setting quotas (controlling output.) This effort-based system sets rules for certified commercial harvesters – gear and methods, seasons and zones. Ecosystem balance and health are maintained using past knowledge, real-time data and ecosystem feedback in a largely self-adjusting system. For decades, effort-based management has been continuously successful in our lobster fishery, yet management of our other fisheries is still quota-based. The new policy framework that we advocate integrates Western science and modern data technology with the deeper knowledge systems of Indigenous peoples and with lessons learned from our rich

history of traditional outport fishing. With such an approach, we humans can play the honourable role of sustainably harvesting the living commons of the ocean. Challenging the status quo – and being challenged in turn – will make this session an integral part of the process of forging better ways to "get fish harvesting policy right."

**Parallel session #1.3:
Getting Adaptation Right (I) – Contributed papers**

Location: SALON D

Contributions from individual papers.

Chair: Prateep Nayak, University of Waterloo, Canada

Speakers	Title
Kanae TOKUNAGA	Understanding the roles of knowledge and learning in climate resilient small-scale fisheries
Sarah HARPER	Bringing perceptions of fairness into the fold in navigating climate change impacts on fisheries systems
Natascia TAMBURELLO	A climate-smart fisheries monitoring framework for guiding adaptation in the small-scale fisheries sector
Ian IVANY	Understanding the past to build resilient futures: Documenting historic deepwater flounder inshore fisheries in Newfoundland
Eider GRANER URTIZBEREA	The decline of European sea bass stocks in Iroise Sea, France: a case study on the adaptation strategies of small-scale liners
Alexandria MAJOR	Activating personal locator beacons: the impact of cold water exposure on hand dexterity for personal locator beacon activation

**Parallel session #1.4:
Getting Small Right – Contributed papers**

Location: Placentia Bay

Chair: Cynthia Grace-McCaskey, East Carolina University, Canada

Contributions from individual papers.

Speakers	Title
Stephan SCHOTT	An inshore fishery model for the Arctic
Tony CHARLES	Understanding small-scale fisheries in Canada
Hillary SMITH	Are targets really SMART-er? Challenging assumptions behind global ocean policies to realize fisheries equity
Juan MARTI	A data-driven social franchise business model for small-scale fisheries
Maria Andree LOPEZ GOMEZ	Getting recruitment and retention of people in small-scale fisheries right
Md. Ruyel MIAH	Vulnerability to the viability of small-scale fisheries: are existing governance approaches and theories well-equipped for the transition?

PARALLEL SESSION #2

Time	Session title
18:00 – 19:30	Parallel Session #2
	#2.1: Canada and Japan comparison: Different but Similar #2.2: Transitioning from vulnerability to viability: Transdisciplinary approaches to getting small-scale fisheries governance right #2.3: Getting Governance Right (I) – Contributed papers #2.4: Getting Conservation Right – Contributed papers

Parallel session #2.1: Girls who Fish Canada and Japan: Apart but Together

Location: SALON B

Organized by:

- Yinji Li, Tokai University, Japan
- Kimberly Orren, Fishing for Success, Canada

Speakers:

- Jennifer Brenton, Memorial University / Girls Who Fish Canada
- Megan Meadus, The Guided Spirit / Girls Who Fish Canada
- Jasmine Paul, commercial fish harvester / Girls Who Fish & Fishing for Success

- Yinji Li, Tokai University, Japan
- Kimberly Orren, Fishing for Success, Canada

Synopsis:

The Canadian 'Girls Who Fish' program, which has been successfully run by Fishing For Success, a non-profit organization from Petty Harbour, Newfoundland & Labrador. Their year-round programming for youth, women, and immigrants encourages visitors to form their own bonds with nature, through purposeful and practical experiences of fishing, gathering, gardening, etc. The non-profit places a great emphasis on the community, and youth to make decisions about their future, the way they want to live, and perhaps make a living. Girls Who Fish Japan is a program inspired by the Canadian 'Girls Who Fish' that started in October 2021 bringing girls and women to fisheries in Japan. Coordinated by TBTI Japan Research Network, the program members from eight to eighty years old gather together once a month at the Mochimune fishing community in Shizuoka and experience hands-on learning about the fisheries and fishing communities. In this session, Girls Who Fish members and coordinators will get together to present and discuss the commonalities and differences in gender and women in fisheries in both countries, why this program, what progress has been made, and the way forward. After two presentations about Girls Who Fish Canada and Japan, a moderated discussion and an open discussion will follow.

Parallel session #2.2:

Transitioning from Vulnerability to Viability:

Transdisciplinary Approaches to Getting Small-Scale Fisheries Governance Right

Location: SALON C

Organized by:

- Prateep Kumar Nayak, University of Waterloo, Canada

Roundtable / Panel Speakers:

- Jessica Blythe, Brock University, Canada
- Ana Carolina Esteves Dias, University of Waterloo, Canada
- Ratana Chuenpagdee, Memorial University/TBTI, Canada
- Derek Armitage, University of Waterloo, Canada

Graduate Student Discussants:

- Natasha Serrao, University of Waterloo, Canada
- Bhabishya Khaniya, University of Waterloo, Canada
- Ruyel Miah, PhD Student, University of Waterloo, Canada

Synopsis:

Strongly anchored in local communities, small-scale fisheries reflect a way of life, and they provide critical contributions to nutrition, food security, poverty alleviation, livelihoods, and local/national economies. Yet, their multiple benefits and contributions are often overlooked as many SSF communities remain economically and politically marginalised, are highly vulnerable to change, and remain invisible in policy debates. Nonetheless, the survivability of many small-scale fisheries suggests certain strengths and forms of resilience. A holistic understanding of what causes vulnerability and what makes small-scale fisheries viable is required. The goal of the roundtable panel is to critically examine the diverse factors and conditions contributing to the vulnerability of SSF and to reflect on ways that are crucial to enhance and facilitate their transition to viability. The panel invitees, mainly constituting members of the Vulnerability to Viability (V2V) Global Partnership, will reflect on the different dimensions of ‘Vulnerability to Viability (V2V) Transition’ as a transdisciplinary approach useful to facilitate the process of ‘getting small-scale fisheries governance right’ within the context of a rapidly changing ocean.

**Parallel session #2.3:
Adjusting the Governance Lens (I) – Contributed papers**

Location: SALON D

Chair: Susan Squires, University of North Texas, USA

Contributions from individual papers.

Speaker	Title
Courtenay E. PARLEE	Full spectrum sustainability and a theory of access: Integrating social benefits into fisheries governance
Frédéric Cyr	Getting your pantry right: How the COVID-19 pandemic boosted local seafood consumption on the Magdalen Islands
Charles MATHER	Recruitment and retention in Newfoundland and Labrador’s fish processing sector (in the time of COVID-19)
Madu GALAPPATHTHI	Women’s experiences in influencing and shaping small-scale fisheries governance: A global literature review
Sahir ADVANI	Selling seafood by the seashore – Getting the size of the US direct seafood sector right
Katia FRANGOUEDES	A transdisciplinary research to support Ecosystem Based management in French English Channel: design of an acoustic telemetry network

Parallel session #2.4:
Getting Conservation Right – Contributed papers

Location: Placentia Bay

Chair: Patricia Pinto da Silva, NOAA, USA

Contributions from individual papers.

Speaker	Title
Evan J. ANDREWS	The case for collaboration for social science and humanities in decision-making for fisheries and oceans sustainability
Alida BUNDY	Towards Ecosystem Based Management: The Maritimes Region (EBM) Initiative
Kayla HAMELIN	Community-based approaches to addressing information gaps for a forage fish in Atlantic Canada
Walter BEZHA & Grace MARTIN	The importance of human-fish relationships in Indigenous fisheries stewardship
Poppy KEOGH	Stepping from Zero to Moving Together in Marine Conservation
Tony CHARLES	Small-Scale Fisheries Linking Conservation and Livelihoods

TUESDAY, JUNE 21TH – DAY 2

REGISTRATION & NETWORKING 09:00-10:00

DAY 1 SUMMARY

10:00– 10:30

PLENARY SESSION #3

Step Zero for Getting Marine Conservation Right

Tuesday, June 21th, 10:30 – 12:30

Location: SALON A

Chairs:

- Patricia Pinto da Silva, NOAA, USA
- Evan J. Andrews, Memorial University, Canada

This plenary presents diverse perspectives about marine conservation in Canada, USA and across the Atlantic as means to understand research and policy opportunities to build capacity for inclusive marine conservation. Marine and ocean users and leaders, whether Indigenous or non-indigenous, inshore and offshore industries, environmental organizations or community groups, may have different perspectives, visions and values related to marine and ocean conservation. Non-users may be latent in the discussion about marine conservation, even though they may feel like they too have something to contribute. While groups may agree that some level of conservation is desirable, what that means in practice often differs based on group values, priorities, and concerns, as well as different visions for the ocean. Perspectives that broaden the view of marine conservation are critical for collaborative planning of marine conservation in Canada, as it aims to meet its Marine Conservation Targets (MCT) and conserve 25% of the oceans by 2025 and 30% by 2030. To help facilitate a broad and inclusive view of marine conservation, to exchange lessons with conservation efforts elsewhere, and to foster opportunities for future research and practice, this plenary brings together representatives from diverse groups and sectors to share their conservation story, discuss their vision for marine conservation, and talk about pathways for action.

Speakers

- Erica Porter, Fisher, Canada
- Tyler Eddy, Memorial University, Canada
- Brice Trouillet, Nantes University, France
- Patricia Clay, NOAA, USA

LUNCH (12:30 – 13:45)

PLENARY SESSION #4 Getting GOVERNANCE Right

Tuesday, June 21th, 13:45 – 15:45

Location: SALON A

Chairs:

- Kristen Lowitt, Queen's University, Canada
- Susan Squires, University of North Texas, USA
- Prateep Nayak, University of Waterloo, USA

To be successful, at the heart of governance is collaboration. This session will consider joint governance among communities, government, civil society, and academic organizations engaged in small-scale fisheries. The first part of the session will feature a keynote panel of speakers with a broad range of experiences on small-scale fisheries governance issues and considerations including stakeholder rights, knowledge acquisition and sharing, the impact of local and regional values, and the importance of inclusion. Importantly they can also speak to big picture issues framing governance in a systems perspective. The second half of the session is interactive providing participants the opportunity to discuss governance issues and solutions in small groups. Sharing small group feedback and Q&A with the panel on the ideas emerging from small group discussion will conclude the session.

Speakers:

- Barb Neis, Memorial University, Canada
- Bonnie McCay, Professor Emerita at Rutgers University, USA
- Madeleine Hall-Arber, Massachusetts Institute of Technology, USA

BREAK (15:45 – 16:15)

PARALLEL SESSION #3

Time	Session title
16:15 - 17:45	Parallel Session #3
	#3.1: Making co-management work: Case studies from Maine's

	river herring and shellfish fisheries #3.2: Thinking BIG about Small-Scale Fisheries in Canada: eBook Launch #3.3: Getting Governance Right (2) – Contributed papers #3.4: Getting Aquaculture Right - Contributed papers #3.5 - Illuminating Hidden Harvests: The Contribution of Small-Scale Fisheries to Sustainable Development
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Parallel session #3.1:
Making co-management work: Case studies from Maine’s river herring and shellfish fisheries

Location: Salon B

Organizers:

- Emily Farr, Manomet, United States
- Mike Thalhauser, Maine Center for Coastal Fisheries, United States

Speakers:

- Josh Stoll, University of Maine, United States
- Bailey Bowden, River Herring and Shellfish Harvester, United States
- Mike Thalhauser, Maine Center for Coastal Fisheries, United States
- Marissa McMahan, Manomet, United States

Synopsis:

Fisheries collaborative management, or co-management, is a governance structure where resource users and governments share responsibility to manage a fishery. Co-managed fisheries fall along a continuum of shared responsibility and power-sharing, but each require adaptive problem-solving, collaboration, and relationship-building across a range of stakeholders and scales to be successful. This session will highlight several efforts to advance co-management and elevate fishers’ knowledge in Maine. The river herring and wild clam and mussel fisheries in Maine are each co-managed between municipalities and the state, combining the local knowledge of fishermen with the scientific expertise and capacity of the state. Both fisheries also face many social, economic, cultural, and ecological challenges including harvest access, climate change, habitat degradation/loss, and limited capacity. Panelists will describe recent efforts to build collaborative networks and advance stakeholder-driven solutions that improve co-management of these fisheries and support adaptation to a changing ecosystem. These efforts include collaborative policy initiatives; improving information access/sharing; supporting community-led restoration activities; and standardizing data collection to inform management. Panelists include two non-profits engaged in community-based research and

management efforts and a research professor. Through these case studies, this session will highlight the factors that are needed to make co-management of community-based fisheries work. Panel presentations will be followed by time for Q&A and discussion, including an invitation for audience members to share additional efforts to advance co-management in other fisheries and geographies.

Parallel session #3.2:
Thinking BIG about Small-Scale Fisheries in Canada: eBook Launch

Location: SALON C

Organized by:

- Evan J. Andrews, Memorial University, Canada
- Christine Knott, Memorial University, Canada

Speakers:

- Kirsten Bradford, Simon Fraser University, Canada
- Cailyn Siider T. buck Suzuki Foundation, Canada
- Sarah Harper, University of Victoria, Canada
- Nathan Stanley, Dalhousie University, Canada
- Zaman Sajid, Memorial University, Canada
- Evelyn Pinkerton, Simon Fraser University, Canada
- Hannah Harrison, University of Guelph, Canada

Synopsis:

Small-scale fisheries in Canada are under-recognized, and opportunities exist to better understand their contributions to seafood production, food security, well-being, and sustainable communities. This panel launches an upcoming knowledge synthesis eBook, “Thinking BIG about Small-Scale Fisheries in Canada”. The eBook brings together 73 community, civil society, and academic contributors to draw attention to small-scale fisheries in Canada including perspectives, challenges, and opportunities for small-scale fisheries in Canada. The eBook reflects a novel offering to Canadian fisheries scholarship with implications for future research and policy recommendations. It bridges conventional knowledge silos including contributions from fisheries in coastal, marine, and freshwater contexts from a range of perspectives and knowledges, such as Indigenous and local knowledge, empirical research, reflections, and stories. The panel will include contributors to the eBook who will share insights from their eBook chapters, and engage in a facilitated cross-contextual discussion about how to get small right for fisheries in Canada through research and policy.

**Parallel session #3.3:
Getting Governance Right (II) – Contributed papers**

Location: SALON D

Chair: Megan Bailey, Dalhousie University, Canada

Contributions from individual papers.

Speaker	Title
C. Julian IDROBO	Northern Inland fisheries facing challenging times: A dialogue between fishers and scientists about freshwater socio-ecological systems
Hannah HARRISON	Forgotten Fish: Contemporary Challenges and Opportunities in Great Lakes Commercial Fisheries
Iria GARCÍA LORENZO	Governance of small-scale fisheries: organisation, co-management and cooperation within the Indigenous Communities of Canada
Bhabishya KHANIYA	Understanding the impact of global changes in small-scale fisheries: key lessons to progress from vulnerability to viability
Sonia STROBEL	Getting Community Supported Fisheries Right
Solmundur Karl Palsson	The success and failure of the Freshwater Fish Marketing Corporation on Lake Winnipeg and the next step for fishers to secure their rights to the market

**Parallel session #3.4:
Getting Aquaculture Right – Contributed papers**

Location: Placentia Bay

Chair: Charles Mather, Memorial University, Canada

Contributions from individual papers.

Speaker	Title
Robin FAIL	Learning from our mistakes on land: Opportunities for Centering Equity in Mariculture Development
Taylor REIDLINGER	Lessons from Kelp Aquaculture: for Better Ocean Governance and Economies
Maria Andree LOPEZ	Getting Employment in Aquaculture Right: a case study

GOMEZ	on the Burin Peninsula
Wilf SWARTZ	Exploring perceptions of commercial fisher representation in management: A case study of the North Atlantic right whale UME, 2017-2021

Parallel session #3.5

Illuminating Hidden Harvests: The Contribution of Small-Scale Fisheries to Sustainable Development

Location: Zoom

Organizers: FAO, Duke University and WorldFish

Speakers:

- Maria del Mar Mancha-Cisneros, University of San Diego, USA
- John Virdin, Duke University, USA
- Josh Stoll, University of Maine, USA

Synopsis:

As a contribution to the celebrations of the International Year of Artisanal Fisheries and Aquaculture, this session will present on the Illuminating Hidden Harvests. This is a global initiative of FAO, Duke University, and WorldFish to generate and disseminate new evidence about the benefits, interactions and impacts of small-scale fisheries to inform policy and practice.

The initiative helps to inform all levels of policy-making processes and contributes to empowering fishing communities, their organizations, and advocates to make a strong case for productive, sustainable and equitable small-scale fisheries. In this way, the IHH initiative supports the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication and progress towards the UN's Sustainable Development Goals.

A key output of the IHH initiative is a major report, which provides a snapshot of the diverse contributions of small-scale fisheries globally. The report—which draws on diverse data sources, 58 country case studies, and 104 government questionnaires—represents a novel, multidisciplinary approach to assess and understand small-scale fisheries.

The session will introduce the approach and share findings and experiences related to the preparation of the study. IHH team members, thematic study authors and members of the Technical Advisory Group will participate in the session which will allow for discussion on the approach and results with attendees.

BREAK (17:45 – 18:00)

PARALLEL SESSION #4

Time	Session title
18:00 – 19:30	Parallel Session #4
	#4.1: Two-Eyed Seeing and fisheries governance: The Saugeen Ojibway Nation Perspective #4.2: Inspiring new pathways: innovation, network building, and research in community-based seafood system #4.3: Getting Blue Economy Right – Contributed papers #4.4: Getting Future Right– Contributed papers

Parallel session #4.1: CANCELLED Two-Eyed Seeing and fisheries governance: The Saugeen Ojibway Nation Perspective

Location: SALON B

Organized by:

- Ryan Lauzon, Chippewas of Nawash Unceded First Nation Fisheries Assessment Program, Canada
- Alexander Duncan, Centre for Indigenous Fisheries, University of British Columbia, Canada
- Breanna Redford, Chippewas of Nawash Unceded First Nation Fisheries Assessment Program, Canada

Speakers:

- Ryan Lauzon, Chippewas of Nawash Unceded First Nation Fisheries Assessment Program, Canada
- Alexander Duncan, Centre for Indigenous Fisheries, University of British Columbia, Canada
- Breanna Redford, Chippewas of Nawash Unceded First Nation Fisheries Assessment Program, Canada
- Christopher Akiwenzie, Chippewas of Nawash Unceded First Nation Fisheries Assessment Program, Canada
- Jordane Chegahno, Chippewas of Nawash Unceded First Nation Fisheries Assessment Program, Canada

Synopsis:

Since time immemorial, the Saugeen Ojibway Nation (SON; Chippewas of Nawash Unceded First Nation and Chippewas of Saugeen First Nation collectively) have harvested fish for ceremony, trade, and subsistence, developing a strong cultural connection and understanding of the waters and fish in Lake Huron and Georgian

Bay. The history of the SON fishery is wrought with conflict and injustices; however, the fishery persists, and the most recent era is characterized by an innovative Two-Eyed Seeing approach to collaboration, research, reconciliation, and self-governance. This session will explore the SON fishery through a contemporary lens and provide insight into the events that occurred following the signing of the 2000 Fishery Agreement. In published literature to date, this modern era of the SON fishery has not been adequately documented. Through the continued assertion of their rights, the SON has created their own unique path to achieve self-governance and reconciliation via research, Nation-to-Nation negotiations, consultation, collaboration, and when necessary, litigation. There are many lessons to be learned from SON's experiences and the purpose of this session is to share these lessons with a broader audience. The content in this session is based on a book chapter written by Ryan Lauzon and Alexander Duncan for the Too Big to Ignore Network (TBTI) e-book, "Thinking Big about Small-Scale Fisheries in Canada."

**Parallel session #4.2:
Inspiring New Pathways:
Innovation, Network Building, and Research in Community-based Seafood System**

Location: SALON C

Organized by:

- Joshua Stoll, University of Maine, USA
- Sahir Advani, University of Maine, USA

Speakers:

- Sahir Advani, University of Maine, USA
- Talia Young, Fishadelphia Community Supported Fishery, USA
- Sonia Strobel, Skipper Otto Community Supported Fishery, Canada
- Peter Halmay, San Diego Fishermen's Working Group, USA
- Kevin Scribner, Kooskooskie Fish, USA
- Sarah Shoffler, NOAA Fisheries, USA
- Jordan Richardson, Local Catch Network / University of Maine, USA
- Joshua Stoll, University of Maine, USA

Synopsis:

Seafood is an important source of employment, nutrition, and wellbeing for millions of people in North America and around the world. Seafood is also the most traded food commodity in the world, creating a dynamic in which fishers' catch increasingly leaves the regions where it is harvested. Here, we share a series of vignettes from across the United States that represent inspiring new pathways to catalyze local and regional food systems through innovation, network building, and

research. Our session will highlight the link between resilient fisheries and vibrant local food systems with an eye towards centering a “fish-as-food” dialog at the World Small-Scale Fisheries Congress. Panelists will include a representative from the fishing sector as well as a network leader, researcher, and government representative.

**Parallel session #4.3:
Getting Blue Economy Right – Contributed papers**

Location: SALON D

Chair: Sheila Prall-Dillman, Fisheries and Oceans, Canada

Contributions from individual papers.

Speaker	Title
Racheal WEYMER	Coastal People Need to Helm the Blue Economy
Syma EBBIN	Fishing for Space in the New Blue Economy: Conflict and Cooperation between the Fishing and Wind Industries in two Northeast US Working Waterfronts
Megan BAILEY	Positioning Canada’s Blue Economy for Growth and Success Through Rights Recognition
Sarah ECOLANO	Working Waterfronts: Supporting independent fishermen by slowing the consolidation of market channels
Paloma HENRIQUES	Co-Creating Accountability Indicators with Alternative Seafood Networks
Ian STEWART	Assessing impacts of offshore oil and gas exploration and development on small-scale fisheries: current challenges facing Atlantic Canada

**Parallel session #4.4:
Getting Future Right – Contributed papers**

Location: Placentia Bay

Chair: Gerald Singh, Memorial University, Canada

Contributions from individual papers.

Speaker	Title
Mirella DE OLIVEIRA LEIS	Fishing into the Future with The Fish Market: A mobile application for (re)connecting small-scale fishers to

	consumers in Newfoundland and Labrador
Rachael CADMAN	Values-based governance and the future of Labrador Inuit fisheries
Monica ENGEL	Balancing public views toward Marine Protected Areas management using the Potential for Conflict Index ²
Desai SHAN	Enforcement of Fishing Occupational Health and Safety Standards: Challenges in Atlantic Canada
Rob STEPHENSON	The future of fisheries: Small-scale fisheries in a blue economy?
Eranga GALAPPATHTHI	Resilience-based steps for adaptive co-management of Arctic small-scale fisheries

**Movie Night "Lake Superior Our Helper:
Stories from Batchewanaung Anishinabek Fisheries"**

Time: 20:30 - 22:30 pm

Film Launch to be held at Bruneau Centre auditorium, Memorial University

Host: Kristen Lowitt

Speakers:

- Kristen Lowitt
- Charles Levkoe
- Greg Agawa
- Sarah Furlotte

REGISTRATION & NETWORKING 09:00-10:00

DAY 2 SUMMARY

10:00 – 10:30

PLENARY SESSION #5

Getting BLUE ECONOMY Right: Food, Fishing, and Visions for the Blue Economy

Wednesday, June 22nd, 10:30 – 12:30

Location: SALON A

Chairs:

- Gerald G. Singh, Memorial University, Canada
- Joshua Stoll, University of Maine, USA

As people, corporations, and governments alike begin to operationalize their visions of the Blue Economy, pressing questions emerge about which ecosystem services, economic benefits, and sociocultural values will be foregrounded and who stands to benefit most. Here, we take the perspective that Getting a Blue Economy Right requires explicit attention to aquatic food production and the contributions, needs, and experiences of seafood harvesters, including those engaged in small-scale fisheries. In this plenary, we hear about efforts and processes in Canada and the US to plan the Blue Economy as well as how considerations of 'Blue Justice' and 'Blue Communities' are being taken into account. We also hear from a panel of Indigenous and scale-scale fishers about what the Blue Economy means to them and their futures as ocean stewards and resource users. This session seeks to stimulate research and policy dialogue about how to situate small-scale fisheries and aquaculture in the Blue Economy, including understanding community connections.

Speakers

- Robert Pascal, Fisheries and Oceans, Canada
- Sarah Shoffler, NOAA, USA
- Charles Mather, Memorial University, Canada
- Peter Halmay, Fishermen's Marketing Association San Diego, USA
- Chris Milley, NEXUS Coastal Resource Management, Canada

LUNCH (12:30 – 13:45)

PLENARY SESSION #6
Exploring New Transdisciplinary Frontiers to Get the Future Right

Wednesday, June 22nd, 13:45 – 15:45

Location: SALON A

Chairs:

- Julián Idrobo, Aurora College, Canada
- Megan Bailey, Dalhousie University, Canada

This plenary brings together researchers, industry, and practitioners to discuss what is needed to Get the Future Right for marine and freshwater social-ecological systems in North America. Calls are emerging for societies to better anticipate and address future changes to fisheries and their associated communities and economies in Canada and abroad. Interacting drivers such as resource use, climate change, practices of settler colonialism, ageing infrastructure, and economic development are intensifying the complexity and uncertainty of changes to ecosystem health, livelihoods and human wellbeing. Advancing sustainable futures requires collective actions in the present, informed by lessons learned about governance in the past. But equally so, it requires a willingness to transcend historical and present-day crisis management models of reactive fisheries governance and a commitment to work collaboratively to create, operationalize, and sustain a joint vision of prosperous futures for small-scale fisheries. Designing those futures requires diverse knowledge systems, values and ways of being, including Indigenous peoples, their governance systems and their struggles for decolonization and resurgence. New transdisciplinary interactions are needed to support more proactive governance of these systems. This plenary aims to encourage those interactions through a mixture of speakers who present different ways of thinking, navigating and steering the future.

Speakers:

- Ken Paul, Wolastoqey Nation of New Brunswick, Canada
- Rob Stephenson, Fisheries and Oceans, Canada
- Hekia Bodwitch, Dalhousie University, Canada
- Momo Kochen, Momo Kochen, Future of Fish, USA

BREAK (15:45 – 16:00)

**Plenary Session #7:
Getting Everything Right**

Wednesday, June 22nd, 16:00 – 17:45

Location: SALON A

Chairs:

- Evan J. Andrews, Memorial University, Canada
- Ratana Chuenpagdee, Memorial University/TBTI, Canada

The final plenary explores Congress highlights and key prospects for small-scale fisheries in North America. In three days, over 65 presentations/sessions and six plenary sessions explore how to get right adaptation, small, governance, marine conservation, the Blue Economy, and the future. This final plenary is an opportunity to bring together outcomes from this three-day journey, and position new trajectories to get everything right for communities, science, and policy. Join in bold discussions with plenary speakers and attendees from communities, industry, government, and academia.

Speakers:

- Keith Sullivan, FFAW, Canada
- Kimberly Orren, Fishing for Success, Canada
- Kevin Anderson, Fisheries & Marine Institute of Memorial University, Canada
- Paul Foley, Memorial University, Canada

FINAL SUMMARY AND CLOSING REMARK

17:45 – 18:00

Closing remarks from Paul and Evan

Paul started with a sentiment that change is not linear and that he is excited to see the work that comes from the congress conversations. Evan added that he believes getting small-scale fisheries right will mean getting universities right, and that having excellent mentors is what brings forward new researchers to the field. He emphasised the importance of holding each other to account with what we have accomplished when we meet again at the next congress in four years' time.

ABSTRACTS – CONTRIBUTED PAPERS

Selling seafood by the seashore – Getting the size of the US direct seafood sector right

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Americo Vega-Labiosa, USDA, americoj.vega-labiosa@usda.gov

Joshua Stoll, Assistant Professor, University of Maine, joshua.stoll@maine.edu

Seafood sales that are directly beneficial and traceable to fishers, or direct seafood marketing, strengthen local seafood systems and livelihoods of small-scale fishing communities. Yet, estimates of the diversity and scale of the direct seafood marketing sector globally and in North America are poor. We describe the methodology being implemented to produce the first benchmark assessment of the US direct seafood marketing sector. We highlight the resources available and steps necessary to conduct a national survey of US fish harvesters involved in direct sales. An accurate estimate of the US direct seafood marketing sector can highlight to policymakers the importance of local and regional seafood systems – of which small-scale fishers are vital – and encourage future investment. This project is the result of a unique collaboration between the National Marine Fisheries Service, US Department of Agriculture, University of Maine, and the fishing sector. The synergistic advantages of such an approach are also described as a means of getting the assessment right.

Decision-making in DFO: Tracking interactions that implement marine conservation

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Understanding decision-making processes supports effective governance for marine conservation. The Canadian government has set ambitious Marine Conservation Targets, seeking to protect 25% of marine and coastal areas by 2025 and 30% by 2030. To meet targets, planning for marine conservation and ocean uses requires diverse knowledge sources and collaborations, in which interactions between multiple stakeholders in the public and private sectors are imperative to advance governance outcomes. Under these conditions, exploring how and with whom DFO interacts with, internally and externally, to advance marine conservation can serve as a foundation for formulating plans, policies and recommendations. This

presentation provides preliminary results from a transdisciplinary study that documents public and private stakeholders' interactions and, based on it, identifies relevant governance principles for advancing Canada's Marine Conservation Targets and other related goals. The study was co-created with partners from DFO and the Ocean Frontier Institute Module I, and draws on interviews with DFO staff from DFO's three Atlantic administrative regions.

Positioning Canada's Blue Economy for Growth and Success Through Rights Recognition

Bailey, Megan, Dalhousie University, Canada, megan.bailey@dal.ca

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Canada's current Blue Economy engagement document claims that "Canada's Blue Economy Strategy has the potential to increase and diversify ocean-related economic opportunities for coastal Indigenous communities that are aligned with their values, priorities and aspirations.". Despite this rhetoric, federal and provincial barriers to accessing safe and sustainable fishing opportunities for Indigenous people and communities remain firmly in place. Even with constitutionally protected treaty rights, a federal commitment to truth and reconciliation, and new federal legislation to implement the United Nations Declaration on the Rights of Indigenous Peoples, some Mi'kmaq continue to be harassed at the wharves and on the water, have their gear apprehended or stolen, and are forced to be seen as illegal actors in the nation's most valuable fishery: that for American lobster. Using an access lens and the treaty right for Mi'kmaq to fish for a moderate livelihood, this paper interrogates the nine areas forwarded by Canada to position its Blue Economy for growth and success (natural environment, innovation, financing, science and data, market access, business environment, regulatory environment), and offers opportunities within each one to use Canada's Blue Economy to support Indigenous Rights. While the focus in this paper is on the Mi'kmaw treaty fishery for lobster, this paper highlights the importance of putting Indigenous Rights at the forefront of Blue Economy strategies across the country.

Towards Ecosystem Based Management: The Maritimes Region (EBM) Initiative

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Members of the EBM Initiative

DFO has a long-standing mandate to apply an ecosystem approach to fisheries and oceans management in Canada. This involves the consideration of ecological, economic, social/cultural and governance information in decision-making processes, as outlined in Department policies and legislation, including the Fisheries

Act and Oceans Act. While DFO is increasingly being tasked with the management of diverse activities that cut across issues, species, ecosystem components and ecological, economic and social impacts, potential management responses remain fractionated within different DFO Sectors. DFO advice and management is generally focused on ecological objectives and does not fully articulate or evaluate the full range of ecological, economic, social/cultural, and governance objectives necessary for sustainability. To address this need, DFO Maritimes Region is revising its Ecosystem Based Management (EBM) Framework, to encompass these objectives as its four pillars, in order to support DFO's mandate and advance sustainable development goals in the Maritimes Region. The EBM Framework is being co-developed with all DFO sectors and external social science experts and is intended to enable transparent and evidence-based decision making based on a broad range of objectives. The EBM framework will also support the evaluation of management plans within and across sectors and the assessment of trade-offs and cumulative impacts using indicators sourced from a wide range of information, knowledge and data of the social-ecological system. This holistic EBM approach will form a common basis for integrated management, marine spatial planning, growing a successful, just Blue Economy, and is key to improved management ('getting governance right').

Values-based governance and the future of Labrador Inuit fisheries

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Megan Bailey, Dalhousie University, megan.bailey@dal.ca

Across the Arctic, Inuit are connected to their marine environments through subsistence and commercial fisheries. Fisheries are a vital source of economic development, cultural preservation, and community wellbeing in Nunatsiavut, a land claim area on the North coast of Labrador. Fisheries in Nunatsiavut are currently managed with a focus on problem-specific planning, while policy interventions continue to redirect most benefits of adjacent marine resources outside of the region. Northern fisheries policy fails Inuit in part because the Canadian government's mandates are determined outside of communities and do not focus on holistic, long-term governance. To advocate for improved integration of Inuit Knowledge and values, Labrador Inuit are asking: How do Inuit envision the future of fisheries?

To answer this question, representatives from the Torngat Wildlife, Plants and Fisheries Secretariat, the Torngat Fish Producers Co-operative, and the Nunatsiavut Government have partnered with researchers at Dalhousie and Memorial Universities to share their visions for the future of the fishing industry. Researchers have interviewed Inuit fishers, processors, managers, and scientists to find

synergies and identify potential structural changes to the industry. Using a modified Delphi approach, this study has elicited information about values and priorities Labrador Inuit hold in relation to the fishing industry. Major findings include the strengths, weaknesses, opportunities, and threats that Labrador Inuit see on the horizon, as well as recommendations for creating resilient and culturally appropriate fisheries. This work also collects recommendations to substantively incorporate those same values and priorities into governance.

Small-Scale Fisheries Linking Conservation and Livelihoods

Charles, Tony, Community Conservation Research Network, Saint Mary's University, Canada, tony.charles@smu.ca

Alison Macnaughton, University of Victoria, aemacnaughton@gmail.com

Shannon Hicks, Saint Mary's University, shannon.hicks@dal.ca

Small-scale fishers and fishing communities around the world are engaging in environmental conservation and stewardship activities, yet these are too little noticed, and supported, around the world. They are playing a major role in effectively maintaining fish stocks, enhancing aquatic habitats, and supporting sustainable local livelihoods, and with 2022 marking the International Year of Artisanal Fisheries and Aquaculture (IYAFA), this is a perfect time to highlight the role of small-scale fishers (SSF) in environmental stewardship globally. This presentation will draw on the results of an ongoing SSF-Stewardship initiative led by Saint Mary's University and supported by the UN Food and Agriculture Organization (FAO) and will also draw on insights from a decade of work by the Community Conservation Research Network, leading to the recent IUCN-published book, *Communities, Conservation & Livelihoods*. Examples of SSF stewardship will be discussed, including the work of Indigenous organizations, local communities, nongovernmental organizations, and more. The presentation will also consider measures to ensure that government policy and funding is used to enhance SSF conservation efforts. Answers to four major questions will be explored: In what ways do small-scale fishing communities engage in environmental stewardship? Who makes the decisions affecting how fishing communities link conservation and livelihoods? What are the ingredients of success in fishing community conservation practices? How can government policy and practice provide better support to small-scale fishers engaged in conservation and livelihood initiatives?

Understanding Small-Scale Fisheries in Canada

Charles, Tony, Community Conservation Research Network, Saint Mary's University, Canada, tony.charles@smu.ca

Understanding Canadian small-scale fisheries requires research and knowledge-building, and this presentation assesses the evolution of that understanding, through a personal journey over the decades, beginning with a seminal conference back in 1989, on research and knowledge-creation in small-scale fisheries globally. This presentation explores what has evolved, and in what ways, since that time. It

first discusses the nature of small-scale fisheries in Canada, recognizing that until recently, the term ‘small-scale fisheries’ was not widely used in Canadian fishery discussions. Indeed, even within the relatively recent 1999 negotiations over the Small-Scale Fisheries Guidelines (FAO 2015), it was not clear how well the Canadian government understood the nature of small-scale fisheries in the country. We will discuss the extent to which Canada’s small-scale fisheries are now appreciated as such. The second major theme of the presentation is the ‘nature of research’, and in particular the evolution of understanding about the various sources of knowledge in small-scale fisheries, the participation of fishers in research, and the overall multidisciplinary of that research and knowledge-building. Finally, the third major aspect of the presentation lies in assessing the knowledge needs in Canadian small-scale fisheries, and how these have changed over time. Specific discussions will cover: fishery objectives; fishery systems; the processing sector; the role of women; labour; Indigenous fisheries; fishery management systems; the Commons; co-management; decision-making and behavioural responses; conflict; biodiversity conservation; and human rights & fishing rights in small-scale fisheries.

Getting your pantry right: How the COVID-19 pandemic boosted local seafood consumption on the Magdalen Islands

Cyr, Frédéric, DFO, Frederic.Cyr@dfo-mpo.gc.ca

María Andree López Gómez, Memorial University of Newfoundland and Labrador, malopezgomez@mun.ca

Canadian seafood producers maximize their profit by targeting the international market. While harvesters often take profit from this global gold (or blue) rush, local consumers often find themselves unable to afford a resource harvested locally. This is the case on the Magdalen Islands (Qc), where the lobster fishery is the main economy. Deprived from their seasonal workforce due to closed borders at the beginning of the COVID-19 pandemic – which largely prevented secondary and tertiary transformation of seafood – the Islands’ seafood producers had no choice but to sell a large part of their live production locally, and at low prices. Through news articles, family stories and informal interviews, we report here how the pandemic changed the lobster fishery distribution – and the kitchen parties – for the joy of locals. At least for one season.

Fishing into the Future with The Fish Market: A mobile application for (re)connecting small-scale fishers to consumers in Newfoundland and Labrador

de Oliveira Leis, Mirella, Memorial University of Newfoundland and Labrador, Canada, mirella.deoliveiraleis@mun.ca

The United Nations Decade of Ocean Science for Sustainable Development offers us a unique opportunity to take a closer look at our global progress in the 2030 Agenda for Sustainable Development and trace our next steps towards “Getting the Future Right”. In a context of change, ocean and fisheries sustainability relies on

innovative and technological solutions to overcome current and future challenges. In Newfoundland and Labrador (NL), small-scale fishers and local consumers have become increasingly distanced, both geographically and socially, with a long fish chain and a focus of export markets. About 90% of all seafood caught in the province is exported, and direct sales of fish and seafood were not permitted until 2015. The Fish Market is a mobile application for (re)connecting small-scale fishers to local consumers in NL and elsewhere. Through the app, small-scale fishers can directly sell their catch to consumers, increasing their revenue and access to local markets, while contributing to food sovereignty. Consumers can have access to locally caught seafood with increased transparency while supporting fisheries sustainability. With funding support from Ocean Wise, The Fish Market has conducted over 45 interviews with key stakeholders in NL, involved 50 beta testers, established ten partnerships, hosted public outreach events, received two awards, was featured in 13 media interviews and guest presentations, and released its prototype version. The final launch is planned for the summer of 2022 in celebration of the International Year of Artisanal Fisheries and Aquaculture, highlighting its contribution to the small-scale fisheries of the future.

Fishing for Space in the New Blue Economy: Conflict and Cooperation between the Fishing and Wind Industries in two Northeast US Working Waterfronts

Ebbin, Syma, University of Connecticut, USA, syma.ebbin@uconn.edu

Nathaniel Trumbull, University of Connecticut, trumbull@uconn.edu

Working waterfront space is limited, leading to competition for coastal space among waterfront dependent, and non-waterfront dependent industries. The ascendance of offshore wind power in the US is squeezing already scarce port resources, exacerbating competition for these spaces, and generating conflicts. The Biden administration's prioritization of wind energy generation has augmented demand for port space to serve as production, staging and marshalling areas for this offshore development. Although the development of wind power will occur offshore, Northeast US ports are anticipating port use by wind companies. This paper focuses on the competition for waterfront space between the fishing and wind industries on the Thames River, Connecticut, and in New Bedford Harbor, Massachusetts. Emerging wind power in the new Blue Economy looks to reshape port usage, generating both winners and losers. This paper explores the processes by which port space is being (re)allocated and examines the generation of conflicts and cooperation among competing stakeholders.

Working Waterfronts: Supporting independent fishermen by slowing the consolidation of market channels

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In Alaska, and elsewhere, remote coastal fishing communities are experiencing the shuttering of independently owned local processors, amid the rise of consolidation the fishermen are becoming beholden in “company towns” essentially owned by multi-national corporations with more concern for earnings than the people that have worked for generations to provide a pristine food source. The seafood production landscape is on course to mimic the supply chain monopoly woes of the livestock industry. An industry that is so messed up that the US government is investing 1 billion dollars as an attempt to restructure a broken system. Before the domestic seafood industry hits the flash point of our current livestock industry brought about by narrowing of market channels, the US administration should be focused on diversification and promotion of small and mid sized seafood suppliers. As more industrial seafood buying and processing giants lean into value added products and direct to consumer sales. They displace smaller artisan seafood products and allow the unfair advantage of reaping profits at both ends. Being in control of both the price paid to fishers who suffer from lack of market options and setting the price of product sold to grocery or direct to consumer allows for the perfect scenario for reaping maximum benefit while squeezing those at either end of the production chain.

Balancing public views toward Marine Protected Areas management using the Potential for Conflict Index2

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Jerry Vaske, Colorado State University

Implementing marine protected areas and deciding what activities should be permitted can trigger conflict among the public. The Potential for Conflict Index2 has been widely used to assess the likelihood of conflicts across various contexts but has not as yet been applied to managing marine protected areas. This article assessed levels of consensus or potential conflict across various management options before implementing a new MPA. The options ranged from no-take to allowing oil drilling. Data from Newfoundland, Canada, showed that despite public support for the full protection approach, a higher potential for conflict was observed for not allowing small-scale fishing and closing the area for any human activity. A lower potential for conflict/higher consensus was observed for not allowing industrial fishing and oil exploration. Understanding public acceptability for MPAs and identifying areas of potential conflict may increase the likelihood of successfully implementing new areas for biodiversity conservation and meeting the global targets of ocean protection.

Learning from our mistakes on land: Opportunities for Centering Equity in Mariculture Development

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Food production represents the most significant nexus between the environment and society—a relationship often characterized by environmental degradation and inequitable access. Our terrestrial food system is dominated by corporate ownership and agro-industrial production systems that treat food as a commodity serving the agenda of global economic development, with little attention to the environmental and social impacts of the system. As a rapidly growing sector of food production, mariculture has the opportunity to learn from the mistakes of modern industrial agriculture and bring different priorities to bear in its contribution to our food system. Proponents of mariculture expansion commonly highlight its potential for economic growth, aligning it with broader Blue Economy discourse that positions ocean spaces as horizons of economic development. This research is grounded in the recognition that aquaculture, while providing a substantial contribution to our food system, paradoxically has the potential to inhibit equitable outcomes through privatizing public waters, competing with wild-capture fisheries, generating profit for multinational corporations rather than local business owners, and focusing production on foods that are affordable for and desirable to high-income consumers. As mariculture makes up an increasing percentage of food produced within the U.S., policymakers must grapple with questions of who this food is for and who benefits from this burgeoning industry. With equity as a guiding principle of aquaculture development, the sector could have an opportunity to support and empower small-scale growers, recognize and accommodate diverse values and preferences regarding seafood, and, ideally, create a more sustainable and accessible (sea)food system.

A transdisciplinary research to support Ecosystem Based management in French English Channel: design of an acoustic telemetry network

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Marine fisheries within the English Channel region support around 4000 vessels representing 27% of UK and 28 % of French fishing fleets from which a large part is small scale vessels. In collaboration with regional fisheries and statutory conservation bodies and fishers, recreational fishers, divers, the project FISH INTEL (EU Interreg Chanel-Manche) deploys state of the art fish tracking techniques to evidence and implement Ecosystem Based Fisheries Management (EBFM) at 7 pilot sites in three countries (France, UK, Belgium) for four economically and ecologically important marine species (seabass, pollack, crawfish, bluefin tuna).

Fishers Local Ecological Knowledge (LEK) will be used to identify the points to deploy the acoustic devices and understand fish behave and then design new management rules. Meetings and interviews were conducted in the three French

pilots' sites (Iroise Sea, Bay of Saint Brieuc and Bay of Seine) with Small scale fishers (netters and liners). The presentation will present the main results of these interviews and meetings: small scale fishers opinion about acoustic tools and EBFM, knowledge about the species behave, state of the resources (4 species), efficiency of current management system of species and how to improve fisheries management for the three species.

Women's experiences in influencing and shaping small-scale fisheries governance:

A global literature review

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This presentation will focus on the findings of a synthesis of current empirical evidence on how women experience, shape, and influence small-scale fisheries (SSF) governance. Globally, women make up about half of the fisheries workforce (56 million women) and critically depend on coastal resources for livelihoods and wellbeing. Yet, women are rarely involved in any decision-making and institutions concerning the issues of access to, control over, and the management of coastal resources. Their unique experiences, issues, priorities, and specific needs are therefore left out of deliberations while perpetuating gender inequity. These issues also have gained attention in recent global policy frameworks, such as the Voluntary Guidelines for securing sustainable small-scale fisheries and Sustainable Development Goals, where explicit commitments have been made to foster gender equality as a guiding principle in efforts at all levels. However, a comprehensive synthesis on the state of empirical evidence on women's engagement in governing SSF remains a critical gap in scholarship. To address this gap, we employed the systematic scoping review method to assess relevant peer-reviewed literature. Our review findings reveal a typology of women's governance roles, the specific outcomes they contribute to, and the context-specific barriers they face in doing so. The results also highlight the gaps, opportunities, and directions for future research at the intersection of gender and SSF governance.

Resilience-based steps for adaptive co-management of Arctic small-scale fisheries

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Arctic small-scale fisheries are essential for the livelihoods, cultures, nutrition, economy and food security of Indigenous communities. Their sustainable management in the rapidly changing Arctic is thus a key priority. Fisheries management in complex systems such as the Arctic would benefit from integrative approaches that explicitly seek to build resilience. Yet, resilience is rarely articulated as an explicit goal of Arctic fisheries management. Here, we first describe how marine and anadromous fisheries management throughout the North has used the notion of resilience through a literature review of 72 peer-reviewed articles. Second, we make a conceptual contribution in the form of steps to implement adaptive co-management that aim to foster resilience. Building on resilience-based insights from the literature review and foundational research on adaptive co-management and resilience, the steps we propose are to initiate and carry out 1) dialogue through a discussion forum, 2) place-based social-ecological participatory research, 3) resilience-building management actions, 4) collaborative monitoring, and 5) joint process evaluation. Additionally, we propose action items associated with the steps to put adaptive co-management into practice. Third, we assess two case studies, Cambridge Bay and Pangnirtung Arctic Char commercial fisheries, to explore how the five steps can help reinforce resilience through adaptive co-management. Overall, we propose novel guidelines for implementing adaptive co-management that actively seeks to build resilience within fishery social-ecological systems in times of rapid, uncertain, and complex environmental change.

Governance of small-scale fisheries: organisation, co-management and cooperation within the Indigenous Communities of Canada

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This study is a work in progress about the fisheries governance in the Indigenous Communities of Canada and is part of a broader research project about the contribution of community-based fisheries organisations to sustainable development in small-scale fisheries*. In this sense, the objective is to analyse the organisational structures (formal or informal) that the Indigenous Peoples of Canada have to manage their fisheries activities (in self-management or in co-management systems). The focus is given to: i) the position of these structures within the fisheries socio-ecological system: ii) the internal characteristics of the organisation, such as decision-making processes, by-laws or distribution of the benefits arising from the fisheries activities. This study applies approaches from the New Institutional Economics and the Social and Solidarity Economy, specifically on compliance with the cooperative principles. // *I. García-Lorenzo, D. Ashan, M.M. Varela-Lafuente, Community-based fisheries organisations and sustainable development: Lessons learned from a comparison between European and Asian countries. Mar. Policy 132 (2021), 104672. <https://doi.org/10.1016/j.marpol.2021.104672>.

The decline of European sea bass stocks in Iroise Sea, France: a case study on the adaptation strategies of small-scale liners

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In Iroise Sea, France, European sea bass has been for many decades the main harvested species for small-scale fishers of the area, in particular for hand-liners. This specie has experienced a decline in the biomass of reproductive stocks in Europe since 2005 and is now, according to scientists, below the biomass threshold (BT) in the northern area (Celtic Seas, North Sea Channel). In this particular sector, where significant Marine Protected Areas (MPA) are present, management measures have been implemented since 2012 (licensing system, an increase in the minimum catch size, etc.), which have impacted the activity of local fishers. Finistère small-scale fishers consider that the decline of the stocks can be explained by the effects of climate change and the activity of pelagic trawls, especially during the biological rest period (January to March).

According to recent observations, this situation has obliged small-scale fishers to diversify species and fishing practices in order to make their livings. Many of them are now turning to fishing pollack, previously a by-catch, but for this species biological data is rare and management rules are almost inexistent (no rest period, no quotas, etc.). Through the analysis of semi-structured interviews, this presentation will summarize fishers visions concerning their current activity and the adaptation of their fishing practices to this situation and current management measures. This presentation is based on the work realized within the frame of FISH INTEL project (Interreg EU Channel-Manche).

Fishing for Success- getting the future right for all small-scale fishermen in a Port

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Small-scale fisheries in San Diego, like fisheries across the nation, face concurrent challenges of waterfront gentrification, potential competition for ocean use via finfish aquaculture and wind farms, competition with cheap imports, concerns about impacts on protected species and a pandemic which interrupted exports and demand from restaurants, the main recipients/clients for this industry and the processors who buy their harvest. The pandemic served to highlight existing and pervasive supply chain issues. These all affect the resilience and future of small-scale fisheries and thus the availability of a sustainable source of healthy protein for the public.

The San Diego fishing industry includes 140 fishing vessels which use seven gear types to harvest ~130 species of fish and invertebrates. It is a small-scale fishery. To ensure food security for the region and maintain the portfolio of opportunities

which keep the San Diego small-scale fishing industry in business, solutions to the concurrent challenges should focus on benefitting the entire industry. How can the industry develop a business-marketing plan for all fish landed in San Diego through an association consisting solely of fishermen. In this presentation, we will describe examples of functions that existing food hubs in the nation are providing to their industry, describe the functions that would benefit the San Diego industry and ask for advice.

Community-based approaches to addressing information gaps for a forage fish in Atlantic Canada

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Atlantic mackerel (*Scomber scombrus*) is an ecologically significant forage fish that is subjected to commercial, bait, and recreational fisheries in Atlantic Canada. The federal Department of Fisheries and Oceans has assessed mackerel in the “critical” zone under the Sustainable Fisheries Framework, meaning that the stock is in need of conservation action to rebuild the population. However, scientific assessment and management of this species focuses primarily on the commercial fishery, with little to no data collection or stakeholder engagement from others who use the resource, including a large, widely distributed community of recreational fishers. This study uses community engagement tools to describe biological, operational, and socio-cultural dimensions of recreational mackerel fishing in Nova Scotia to address information gaps affecting the management of this species. First, this community-based science project will estimate catch, effort, and discard rates in the recreational mackerel fishery, and relationships between mackerel catch and date, time, tide level, and temperature. A second research objective is to describe the diverse community of recreational mackerel fishers in the region. Ultimately, this research will provide the first standardized data collection on recreational Atlantic mackerel fishing activities in Canada, illustrate the range of stakeholders in this fishery, and highlight the diverse ways in which they rely upon and benefit from this resource.

Bringing perceptions of fairness into the fold in navigating climate change impacts on fisheries systems

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Climate change will amplify stress on systems already challenged by unequal distribution of access to, control over and benefits from fisheries. Understanding how those most connected to fisheries perceive the risks associated with climate change is critical to developing effective responses and establishing management priorities. Adaptation planning efforts may be hindered by perceptions of unequal or unfair distribution of resources and the processes in place to manage them. In contrast, adaptation planning that engages with perceptions of fairness is more likely to garner support. We elicited fisher perceptions of climate change impacts on fisheries, and responses to these impacts, through an online survey of commercial fishers in Canada's Pacific region. The survey, completed by 105 fishers, highlights substantial concern for climate change, the impacts it will have on fishers' livelihoods and wellbeing, and some of the key challenges which may interfere with the ability of fishers and fisheries management to adapt. We frame the findings of the survey drawing from concepts of social justice, focusing on distributive and procedural justice, as necessary considerations for climate change adaptation planning. Developing plans and processes to respond to climate change impacts on fisheries require not only understanding ecological impacts and challenges, but also the social, economic, and institutional considerations that could help or hinder efforts to respond effectively and equitably to a changing ocean.

Forgotten Fish: Contemporary Challenges and Opportunities in Great Lakes Commercial Fisheries

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Commercial fisheries on the Great Lakes collectively form the world's largest freshwater commercial fishery. These fisheries are diverse both in scale, targeted species, gear types, and include Indigenous and settler participants. However, these fisheries face significant challenges from urban development and coastal gentrification, agricultural pollution, a long history of introduced exotic and invasive species, and a dwindling number of participants due to high barriers to entry. This presentation will discuss preliminary findings of ongoing human dimensions research on Great Lakes commercial fisheries, and will feature the trailer of a forthcoming documentary film and podcast series focused on these fisheries. This combination of empirical research and knowledge mobilization will highlight how today's commercial fishers are facing challenges and seeking new opportunities to remain resilient in a changing landscape of seafood consumption.

Co-Creating Accountability Indicators with Alternative Seafood Networks

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As awareness around overfishing, habitat loss, labor abuses and issues of equity and access in fisheries have increased, certifications are being used to incentivize sustainability. However, certification schemes have been criticized for not fulfilling their purpose, being inattentive to socioeconomic and cultural dimensions of sustainability, and disproportionately disadvantaging small-scale fishing operators. These limitations, coupled with a specific interest in actively cultivating empowering models of shared accountability, warrant the exploration of alternative processes for encouraging sustainability in fisheries. The University of Maine is collaborating with the Local Catch Network, a network based around small-scale fisheries, and Sitka Salmon Shares, a Community Supported Fishery, to conduct participatory action research on accountability indicators. We used the Local Catch Network core values, based on caring for communities and the environment, as the starting point to design measurable metrics that could be used as the basis for a self-reflective or peer review tool. This research aims to take a step towards changing the way certifications are used and deployed in fisheries in North America and beyond by (1) co-creating measurable metrics for accountability among small-scale seafood enterprises in North America and (2) piloting a process that seafood enterprises can use to evaluate their operations relative to these metrics. This research is funded by the Robert and Patricia Switzer Foundation, Sitka Salmon Shares, and the University of Maine.

Understanding the Past to Build Resilient Futures: Documenting Historic Deepwater Flounder Inshore Fisheries in Newfoundland

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American plaice, or deepwater flounder, has been under moratoria since the early 1990s. Pre-moratorium, this species was a valued component of many harvesters' inshore fisheries, with deepwater flounder fisheries operating around Newfoundland. Inshore harvesters requested research documenting pre-moratorium inshore flounder fishery as part of understanding past and current flounder distribution and abundance and in preparation for possible fishery reopening, and highlighted the importance of this fishery. Fishers have noted that many fishing grounds were shoreward of past and present research vessel surveys

used to estimate groundfish species' abundance. Fishers' knowledge research was carried out with harvesters from Fortune Bay to White Bay using semi-structured interviews with a mapping component (19 to date). Participants described fishing practices, catch rates, mapped grounds and discussed the importance of deepwater flounder fishing as part of their annual fishing cycle and income. The fishery occurred from March to December, depending on the area and other species fished. Flounder were mainly fished using gillnets (8-inch mesh), with some longline fishing in the fall. Deepwater flounder were fished over level bottoms, with sand or mud bottom, at depths ranging from 30 to 200 fathoms. Up to half of the income of those who directed for deepwater flounder came from this fishery. Interview findings provide insight into the importance of multiple fisheries, fished sequentially, for the economic sustainability of inshore fisheries. Overlaying historic fishing grounds and catch and effort data with current stock definitions and research survey data will help determine research and management needs for inshore fisheries.

Stepping from Zero to Moving Together in Marine Conservation

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This presentation discusses new insight and future directions from an outreach and governance capacity building projects: Catalyzing Step Zero for Marine Conservation Targets: A Transdisciplinary Outreach in Newfoundland and Labrador. The project seeks to build relationships that can help improve understanding about values, visions, and experiences of ocean users, actors, and leaders for marine conservation, in the context of the Canadian government's Marine Conservation Targets. To meet targets, planning for marine conservation and ocean uses requires diverse knowledge sources and collaborations, in which relationships among multiple stakeholders in the public and private sectors are imperative to advance conservation outcomes. Through an interactive knowledge platform, we are encouraging community members from around Newfoundland and Labrador to engage with marine conservation in the province, aiming especially to grow awareness about the topic, make visible the connection between people and the ocean, share stories about community-led conservation initiatives, and enhance knowledge about the importance of life above and below water. Ultimately, we hope to build shared visions and motivations for the future of the ocean, starting at Step Zero for Getting Conservation Right.

Understanding the impact of global changes in small-scale fisheries: key lessons to progress from vulnerability to viability

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Small-scale fisheries across the globe are facing multifaceted vulnerabilities mainly associated with poverty, marginalization, and social injustice due to global change. Yet, these fishing communities across the globe have developed certain strengths and capacities to deal with these changes. The main aim of this research is to conduct a comparative study using the I-ADApT framework to understand the major drivers of vulnerabilities faced by small-scale fishing communities, their adaptive capacity, and grounded societal and governing responses used in developing resilience to deal with global changes. We performed both qualitative and quantitative assessments using content analysis in NVIVO and multiple factorial analysis in R-Studio, respectively to compare twenty-nine small-scale fisheries systems representing nineteen different geographical locations. The goal of the analyses was to develop typologies of the small-scale fisheries system based on shared characteristics when viewed from the lens of vulnerability, governability, and sustainability responses. We find the most common responses to deal with global change included a shift toward alternative livelihood opportunities, a shift from hierarchical management to a co-management type of governance, and extended collaboration with various stakeholders. The most common factors that prevented the management objectives were lack of social cohesion, lack of financial capital, and delayed response to deal with the social-ecological crisis. The typology developed here serves as a decision support tool to guide policy and practice for helping small-scale fisheries communities progress from vulnerability towards viability.

Getting recruitment and retention of people in small-scale fisheries right

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Small-scale fisheries in Newfoundland and Labrador (NL) have supported livelihoods in hundreds of coastal communities for centuries, but recent ecological, societal, economic and governance changes have changed the way in which people fish and enter fisheries work. The implementation of groundfish moratoria in the early 1990s coupled with downsizing policies reduced the number of fish harvesters in NL by 45% in the last two decades. The result is a reduced and aging labour force and reduced local employment options for young people, encouraging outmigration. Who will be able to fish and who will benefit from the fishery are important

questions related to the future sustainability of coastal communities in the region. This study investigates the processes and dynamics that impact recruitment, training and retention of people in small-scale fisheries in NL through a mixed methods approach that includes a review of the literature, analysis of fisheries-related data, results from an online fish harvester survey (330 respondents) and interviews with people interested in entering fisheries work (n=11). Findings show that recruitment of crew is not an immediate problem for small-scale enterprises, but that retention of crew is a challenge as crew have to juggle formal requirements to stay in the fishery and strategies to earn a livelihood throughout the year with long-term obstacles to shifting from crew to owner-operator status. Addressing intergenerational equity issues in terms of succession in the fishery, including the policies and regulations that mediate entry, and ensuring community access are critical to 'getting it right' in future fisheries.

Getting Employment in Aquaculture Right: a case study on the Burin Peninsula

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Recently a multinational aquaculture firm opened operations in the Burin Peninsula region in Newfoundland and Labrador (NL) promising economic development and the potential to create economic opportunities in the local seafood sector, including attracting and retaining workers and families. It was expected that the aquaculture firm would generate 440 direct jobs and 380 jobs in affiliated sectors. However, concerns around labour shortages due to the small population and potential skills mismatch raise questions about how the aquaculture industry will fulfill these jobs. This presentation outlines the findings from a Harris Centre Thriving Regions Study, in which communities identified priorities needed to improve the sustainability of the Burin Peninsula in NL, Canada. This study informs two of the priority areas identified: attraction and retention of workers and families and ocean health and seafood opportunities. The aim of the study was to understand the needs of the community and possible opportunities for sustainable employment development related to aquaculture production. Through key informant interviews and an online survey, we asked participants about their expectations and needs regarding aquaculture employment in the area and what would be a useful tool for researchers to provide to community to inform these issues. Preliminary findings indicate that communities want: the sector to hire locally, information about what aquaculture jobs entail, training available locally, and amenities such as childcare to retain and attract workers, among others. This presentation will showcase final findings and the deliverable for communities in the Burin.

Activating Personal Locator Beacons: The Impact of Cold Water Exposure on Hand Dexterity for Personal Locator Beacon Activation

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Rapid detection and location of casualties following maritime accidents is of paramount importance to ensure their survival at sea. Emergency location transmitters such as personal locator beacons (PLBs) transmit an emergency distress signal to alert authorities of an incident and a GPS position to help locate the survivors. PLBs are small, lightweight, and portable handheld devices which, when activated, can help reduce search and rescue time. People involved in maritime survival situations can find themselves exposed to cold water which reduces both their core temperature and the dexterity of their fingers/hands. Activation of a PLB requires that users perform fine manipulative tasks such as deployment of an antenna and pressing a button which may not be visible to them. Anecdotal evidence suggests that some PLB users have found it difficult to locate and depress a PLB activation button. These signaling devices and understanding their application as a piece of critical safety equipment for fish harvesters in emergency situations is very important. Our study measured the effect of button design characteristics on activation rate for users with cold hands and suggest improvements which would enable easier activation. It is anticipated that our results could benefit beacon manufacturers, regulators as well as the user community (e.g. fish harvesters and recreational boaters).

A data-driven social franchise business model for small-scale fisheries.

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Thriving, equitable, and resilient small-scale fishing communities are key to restoring ocean life. Small fisheries catch almost 50% of the fish that is consumed in the world, sadly most fishermen are forced to sell their fish at very low prices to intermediaries as they usually lack the management capacities, infrastructure, market access, and legal and sustainability compliance. To tackle the previous challenges, we propose the implementation of bottom-up Information and Communication Technologies for Small-scale Fisheries (ICT4SSF) in conjunction with a social franchise business model. One of the oldest and most successful business models are franchises, and today a new radical variation is arising in the impact

scene: social franchises. These have been described as the application of commercial franchising methods and concepts to achieve socially beneficial ends, and during the last five years they have gained traction in the fields of health, housing and agriculture, but they have not been tested within small-scale fisheries yet. Here we propose a roadmap to trigger discussions of social franchise business model for small scale fisheries using a combination of infrastructure enhancement, capacity building, traceability technology, and market access, all financially justified in a profitable business. By connecting conscious consumers with premium quality, fair-trade, and responsibly-caught local seafood from the franchises, we believe that this business model has the potential to protect fish stocks for future generations while improving the livelihoods in rural fishing communities.

The importance of human-fish relationships in Indigenous fisheries conservation

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How can Indigenous conservation planning support sustainable small-scale fisheries and community wellbeing in the context of social, economic, and environmental change? The subsistence fishery from Sahtú (Great Bear Lake) in the Northwest Territories is a dietary staple in the Dene community of Déḻnē and is essential for its cultural and spiritual connection to land, water, and wildlife. In pre-colonial times, Déḻnē community members used stories and experience to maintain respectful relations with fish, but social-ecological changes in the Sahtú watershed have since led many to abandon fish harvesting as a livelihood. The Genome Canada 'FISHES' (Fostering Indigenous Small-scale fisheries for Health, Economy, and Food Security) project is researching ways to help ensure local and regional fisheries governance processes are equipped to support long-term community food sovereignty and address uncertainties associated with climate change. The partners will present Déḻnē's approaches to fisheries monitoring and conservation, including how principles of Dene ts'ı́ḻ (ways of life, identity) including "ʔas̱ı́ḻ godı hé gots'edi'

(‘all living things living together’) have the potential to help sustain healthy Sahtú fish populations and the wellbeing of the community of Délı̨nę into the future.

**Recruitment and retention in Newfoundland and Labrador’s fish processing sector
(in the time of COVID-19)**

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Newfoundland and Labrador’s fish processing sector has played a critical role in providing employment for people living in rural coastal communities. Since the 1990s, the number of processing plants and number of workers has declined significantly but as of 2019 the sector continued to provide employment for approximately one thousand five hundred seasonal workers. NL seafood processing faces a number of challenges related to current and future recruitment and retention of workers. These include an ageing workforce, changes in the structure and ownership patterns of the fish processing sector, low incomes, adverse working conditions, and employment uncertainty related to changes in the health of fish and shellfish stocks, their geographic distribution and consolidation of access to licenses and quota in the harvesting sector. The sector also has a history of serious occupational health and safety threats, with the ongoing COVID-19 pandemic adding a new threat to both health and employment. This paper presents some preliminary findings from a study of recruitment and retention of workers in NL seafood processing. Our methods include a review of grey and academic literature on the post-1990s history of NL processing with a focus on recruitment and retention and key relevant changes in NL’s fish processing industry including ownership, markets and government policies; as well as key informant interviews with processors, industry representatives, and relevant government employees. The aim is to deepen and extend recent research in the area through research and dialogue with industry, labour and government. One of the central aims of our research is to draw attention to lessons learned from the effects of the COVID-19 pandemic on current and future labour recruitment needs and options in the sector.

Vulnerability to the viability of small-scale fisheries: are existing governance approaches and theories well-equipped for the transition?

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Despite contributing to food security, employment, poverty eradication, and community well-being, small-scale fisheries are neglected remain vulnerable to a range of challenges. In dealing with such vulnerabilities of small-scale fisheries, the governance of small-scale fisheries is varied and has been going through a significant change in thinking and approaches for the last 15-20 years. A number of theories and approaches have been established, such as co-management, good governance, and adaptive governance, to sustainably govern the common-pool resources, including small-scale fisheries. These approaches, along with the action of the governing institutions (including state, market and civil society), exert a huge influence on small-scale fishers' socio-economic outcome and resource sustainability. This study investigates how these theories or approaches see the vulnerability and viability of small-scale fisheries and whether these theories or approaches are well equipped to help transition small-scale fisheries from vulnerability to viability. A systematic literature review will be conducted to find out how different governance approaches address the vulnerability to the viability of small-scale fisheries. The study argues that a lack of understanding about the root causes of context/case-specific vulnerabilities and subsequent inappropriate governance actions accelerates the vulnerability and makes barriers in moving towards the viability of small-scale fisheries. Thus, the findings will contribute to the relevant literature areas by identifying the pros and cons of the existing approaches pertaining to small-scale fisheries governance. A concrete list of principles will be identified for enabling the transition of vulnerability to viability.

The success and failure of the Freshwater Fish Marketing Corporation on Lake Winnipeg and the next step for fishers to secure their rights to the market

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Between 1960s and 1980s many marketing boards were established around Canada and Manitoba. One of the objectives of these marketing boards were to protect the primary producers from the unequal nature of the market and to ensure that the surplus flowed back to the primary producers. The federal government in co-operation with few provinces established Freshwater Fish Marketing Corporation (FFMC) to put an end to fishers' exploitation by bigger American importers in inland waters. In FFMC, the fishers had a guaranteed buyer that secured fisher's financial stability and freedom from internal and external competition. The FFMC is heavily embedded in Manitoba's food production and economy. However, in 2017, the Conservative government of Manitoba decided to opt-out of FFMC to favor a more competitive market in a neo-liberal fashion.

This paper explore how nested FFMC is in the Manitoba's inland fishery and how FFMC supported both fisher's freedom and financial security. Moreover, the paper will examine the right to the market and the fishers 'right to influence how their market is designed to support their own idea of the good life. As the right to the market is not just about financial gain, but important for food security and self-determination of many First Nations. In the end, the paper will detail the challenges that the newly established Freshwater fish Harvesters Association faces in their effort to turn FFMC into a Co-op.

Full spectrum sustainability and a theory of access: Integrating social benefits into fisheries governance

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The United Nations has identified access to and benefits from fisheries resources as key sustainable development challenges. The business-as-usual management approach focusing on a limited set of biological and economic considerations has not adequately addressed widespread global calls for governing the distribution of access and benefits effectively and equitably. Our paper develops a novel approach for incorporating social science analysis of the generation, distribution and maintenance of benefits into integrated full spectrum sustainability frameworks. To do so, our paper puts a full spectrum sustainability framework into conversation with Ribot and Peluso's influential Theory of Access framework, a political ecology framework which allows for a comprehensive understanding of who benefits from resources, and through what processes they are able to do so. Our paper proposes five immediate uses of these combined frameworks: (i) to facilitate the development of indicators around access and benefits; (ii) to help identify, organize and analyze social benefit data; (iii) to guide the development of cross-disciplinary representations of a system; (iv) to lay out potential trade-offs, cumulative impacts and changes to oceans governance; (v) and to help users respond to national and international objectives around the generation and distribution of benefits. In proposing novel ways of analyzing sustainable resource use in fisheries, our paper thus responds to management challenges associated with an expanding agenda and set of priorities, and growing policy interest in governance and management of the ocean for the benefit of coastal peoples and their communities.

Lessons from Kelp Aquaculture: for Better Ocean Governance and Economies

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Aquaculture is central to conversations about the future of food and the ocean. Getting aquaculture right will depend strongly on decisions made for the blue economy and ocean governance. We are faced with an opportunity to create more sustainable and equitable food systems and coastal economies by designing these three ocean activities well.

There is a gap between where we are now and where we aspire to go. What information and priorities will guide the equitable, sustainable, and just use of coastal spaces, and the distribution of benefits derived from ocean resources?

This session – grounded in recent research – is aimed at stimulating conversations in response to this question. In 2020 I set out to understand why and how people are innovating in the marine food space. Throughout 2021 I conducted interviews in British Columbia and honed my focus to identify levers for change in kelp aquaculture. My focussed findings around kelp are embedded in broader narratives about our marine food system. In this session, I will share major themes that emerged from my research about marine food systems, as well as specific hurdles faced in Canadian plant aquaculture.

Aquaculture, blue economies, and ocean governance need to respond to rapidly changing social and environmental conditions. We also need alignment with our desired future social, economic, and environmental outcomes. Learning from lived experiences, we can move forward with greater knowledge about the immediate hurdles and longer-term change needed for coastal activities to support better global food systems, livelihoods, and well-being.

An Inshore Fishery Model for the Arctic

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We discuss various factors to consider for a successful and locally beneficial inshore fishery operation in the Arctic. We base our analysis on harvest study data and interviews with local fishers for Usqsuqtuuq (Gjoa Haven) and Taloyoak, Nunavut, as well as available data on existing commercial operations in Cambridge Bay, Rankin Inlet and Pangnirtung, Nunavut. The paper identifies lessons learned, critical factors and requirements for successful and consistent operations, and how to deal with trade-offs between subsistence and commercial harvesting. We discuss various supply chain and processing options and compare them in terms of public expenditures, local multipliers, food inspection requirements, value added, food security aspects and the distribution of the returns from inshore fisheries. Finally, we discuss potential implementation strategies for various options including public infrastructure investments, the role of science and genomics, Indigenous Knowledge, ecocultural certification methods and biomonitoring to ensure sustainable and equitable management, distribution and use of inshore fisheries.

Enforcement of Fishing Occupational Health and Safety Standards: Challenges in Atlantic Canada

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Fishing is a hazardous occupation worldwide with a poor health and safety record. In Canada, in 2019, among 207 marine accidents reported to the Transportation Safety Board (TSB) of Canada, 29% involved fishing vessels. Commercial fishing has been on Canada's TSB Watch List for transportation safety since 2010. Like fisheries governance more generally, governance of fishing health and safety is a wicked problem, which cannot be solved once and for all but tends to reappear. While there are no panaceas for improving fishing safety, improved regulation can help. In Canada, the federal government (Transport Canada Marine Safety) is responsible for providing a national regulatory framework that applies to the structural and operational safety of vessels and provincial governments are responsible for the workplace health and safety of crews while they are engaged in commercial fishing activities. In this context inconsistencies among standards and variability in levels of protection across fleets and provinces can exist and jurisdictional conflicts may occur. However, few studies have examined this problem.

To fill this research gap, guided by governance theory and drawing upon findings from a legal review of international, federal and provincial fishing OHS laws and regulations and a review of case law, this article identifies multiple OHS law regulatory and enforcement challenges in the Atlantic Canadian context. These challenges include: (1) fragmented OHS governance due to the division of powers between federal and provincial governments; (2) variation in OHS-related standards and protections between provinces with those from the provinces of Prince Edward Island and New Brunswick less protected than those from Nova Scotia and Newfoundland and Labrador; (3) evidence of jurisdictional disputes that can reduce the efficiency of enforcement and development of fishing OHS standards; and, (4) indications federal-provincial jurisdictional divisions may be impeding Canada's progress in ratifying and implementing international OHS instruments such as the C-188, Work in Fishing Convention of the International Labour Organization. These four challenges mean improving fishing occupational health and safety in Canada particularly is difficult. The paper proposes a regional fishing OHS initiative based on a partnership between the federal and provincial governments to establish harmonized fishing OHS standards as a way to potentially mitigate these challenges.

Are targets really SMART-er? Challenging assumptions behind global ocean policies to realize fisheries equity

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Implementing global fisheries goals using policies is a messier process than the straightforward language of 'scaling down' implies. Unpacking policy mobility (what

happens to policies when they ‘move’) is critical to understanding the implementation of global policies, including why many goals, including equity-related ones, remain unmet. Policy mobility is an interdisciplinary theoretical approach that emphasizes how policies move, who implements them and why, and how goals are transformed as they are enacted in place. In this paper, we ‘follow the policy’, tracing the movements of two globally mobile environmental policies with equity goals in oceans governance, one of which takes place in North America (Mexico). Following cases of national-level implementation of the Aichi Biodiversity Targets in Mexico and the Small-Scale Fisheries Guidelines in Tanzania, we show how flexibility and ‘wiggle room’ to determine implementation strategies and measures of progress in place can benefit equity. Yet targets typically aim to eliminate this ‘wiggle room’ in favor of universal, commensurable, and globally coherent means of tracking implementation. Right now, the Convention on Biological Diversity is negotiating the international biodiversity agenda for the next decade and the future status of equity goals is uncertain as difficult to measure goals like equity are poised to be either simplified, eliminated, or revised to be “SMART”-er (Specific, Measurable, Achievable, Realistic, and Time-bound)—strategies which amount to doubling down on targets. Based on our analysis, we call on the Convention of Biological Diversity to double down on equity, expanding the paradigm of targets themselves beyond business-as-usual policymaking.

Moving Forward, Glancing Back: A Legal Perspective on Achieving a Flourishing Future for Small-Scale Fisheries

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The United Nations General Assembly has designated 2022 as the International Year of Artisanal Fisheries and Aquaculture. It is an appropriate time to reflect on past models and decisions in fisheries governance to design a sustainable, viable model for small-scale fisheries in Canada moving forward.

The current legal regime for fisheries is immense and somewhat decentralized; regulations affecting fisheries participants are spread throughout our body of statutes. The legal aspect of fisheries governance is difficult to understand and navigate, and daunting to approach for those without legal knowledge. However, it is essential to work within this system to carve out a space for future fisheries governance. Unweaving these legal concepts and reweaving them with scientific assessment, lived experiences and knowledge, respect for the inherent rights of Indigenous peoples, and a vision of sustainable and viable small-scale fisheries is necessary to move forward.

This contribution will discuss Canada’s legal system as it relates to Atlantic Canadian fisheries, and how this legal structure can be communicated effectively to provide tools for researchers, fishers, and other marine space users to work with. It will discuss small-scale fisheries and how they fit into the domestic legal regime, and suggest a scheme for how such fisheries might be pursued in a way that prepares them for a flourishing future. This discussion will be supported by interactive

governance theory, past examples of fisheries policies and their effects, and contemporary issues which provide insight on how fisheries could be managed going forward.

The future of fisheries: SSF in a blue economy?

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The management of fisheries must change. There is an urgent need not only to correct some shortcomings of current management, but to shape fisheries in relation to climate change and to aspirations for a vibrant 'blue economy'. Many fisheries have been managed with emphasis on only a subset of ecological and economic objectives. This has resulted in insufficient consideration of some of social/cultural considerations, and a number of untracked and unintended consequences. The full scope of relevant considerations for future fisheries management is becoming clear (from developments such as full spectrum sustainability and the Sustainable Development Goals). Fisheries of the future will undoubtedly have to be managed (and will be audited) with other activities against a greater range of ecological, social/cultural, economic and institutional criteria, with higher standards and explicit consideration of trade-offs and cumulative effects. Improved management of fisheries, and other activities, suggests the need for some form of effective integrated management, (or marine spatial planning), and that, surely forms the basis for any notion of a 'blue economy'. This will test management, science and fishery participants, as it will require major changes in governance, in decision-making structures, in the information basis for management and in advisory processes. On the other hand, it offers an opportunity for more sustainable fisheries that contribute to better societal outcomes, and that can adapt to ecosystem and social change. It is predicted that, 'small-scale' fisheries, that have greater ties to communities, and can be adaptable, will be appreciated as an essential component of 'getting it right'.

Understanding the impact of global change on small-scale fisheries: key lessons to progress from vulnerability towards viability

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The record around the world, including North America, is clear: offshore oil and gas exploration and development (including related shipping) poses substantial (and usually disproportionate) risks to small-scale fisheries. The science-based management tool of Impact Assessment is intended to identify and mitigate such risks, but faces serious challenges. This paper reports on recent research findings in particular on the current realities in Canada's Atlantic region for how small-scale fisheries are considered (or not) in Impact Assessment. It will also make forward looking recommendations for improvements, in light of political aspirations for expansion of offshore oil and gas development in the region. Given the cross-

sectoral nature of Impact Assessment, this presentation will address three of the Congress' topics, respectively: Conservation, Governance and The Future.

Getting Community Supported Fisheries Right

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Since the late 2000's, Community Supported Fisheries have proliferated around the world in an effort to connect small-scale fishers and their catch with local consumers. Although the model has enormous potential to build a thriving blue economy in coastal communities and build robust local food systems around the world, many of these enterprises struggle, founder, and fail for a variety of reasons. Skipper Otto Community Supported Fishery (CSF), founded in 2008, has been actively exploring the factors that determine the success of a CSF. They have developed a model that is unique among CSFs, one that is growing, and profitable without outside investment, allowing for a focus on conservation, reconciliation, food security, and preserving a fishing way of life in coastal communities. In this session, Skipper Otto will share what they've learned and collaborate with harvesters, researchers, and other attendees to continue getting the CSF model right.

A Climate-Smart Fisheries Monitoring Framework for Guiding Adaptation in the Small-Scale Fisheries Sector

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Climate change adaptation planning in the fisheries sector is often informed by predictive climate impact modelling but remains constrained by a lack of current information on evolving vulnerabilities and impacts. We summarize key outcomes from work on a 'climate-smart' fisheries monitoring framework initially developed for small-scale fisheries in the Caribbean as part of the Pilot Program on Climate Resilience, but designed to be applicable at a global scale. The framework outlines key indicators and metrics for systematically tracking climate change impacts across multiple ecological, social, and economic dimensions the fisheries sector as well as differing levels of monitoring capacity, which is often constrained in the communities where small-scale fishing takes place. We go on to discuss the importance of linking this monitoring data to adaptation decision-making and the need to leverage existing programs and partnerships to increase capacity for climate change monitoring and impact reduction in the face of limited adaptation resources. By adopting the monitoring guidance provided in this paper, regional fisheries management and adaptation practitioners will be better positioned to draw a line of sight between monitoring data, adaptation measures, and vulnerability reduction, which is also important in making the case for accessing global climate finance. We conclude by sharing key insights and lessons learned throughout our work in developing and disseminating this monitoring framework

across the Caribbean region and draw parallels with how these might apply in the North American fisheries context.

Understanding the roles of knowledge and learning in climate resilient small-scale fisheries

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Small-scale fisheries (SSF) often lack scientific data and information that can inform their climate adaptation and resilience planning. Even when climate-related information is available, spatial and temporal scales of such information may not be suitable for their decisions. Many SSF rely heavily on their lived experiences and Indigenous or local knowledge to inform their decisions. This study synthesizes findings from global case studies of 15 fisheries, including 11 small-scale commercial, subsistence, and artisanal fisheries, that investigated the prominence of 38 ecological, socio-economic, and governance attributes of resilience, actions taken to build resilience, and SSF capacities to improve climate resilience. To understand how SSF with limited scientific data and information are building climate resilience, we examined i) roles of knowledge and learning-related attributes (diversity of knowledge sources, access to knowledge, learning capacity, and adaptive governance) in shaping resilience, ii) what other resilience attributes complement knowledge and learning-related attributes, and iii) how Indigenous or local ecological knowledge was integrated in resilience planning. We found that learning capacity and adaptive governance are important determinants of resilience in most cases. Preliminary findings also indicate that knowledge and learning-related attributes are often complemented by social capital and agency. Additionally, polycentric, equitable and inclusive, and multi-scale governance proved to be essential to the implementation of adaptive governance. SSF are often agile and responsive to changes and can activate and share Indigenous and local ecological knowledge to adapt. Further, their long-term resilience planning may be enhanced by building better access to scientific knowledge.

Geographic informational issues in marine spatial planning: Lessons from artisanal small-scale fisheries in Senegal.

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Geographical information (GI) is essential in Marine Spatial Planning (MSP) process, but its role is still little discussed. Yet, from its construction to its dissemination, GI implies a series of choices which are far from being 'objective' or neutral. This presentation examines the role of GI and associated geo-technologies in MSP. Based on an empirical investigation developed within three fisheries-related case studies in Senegal (the St-Louis region, the Kayar MPA and the Saloum delta), the study shows a fairly wide range of informational issues related to MSP, from which we sum-up three main results. Firstly, there is a chronic lack of GI in general, and there is a particular need to better document fisheries and their interactions with competing uses (especially in regard to the development of the offshore oil and gas activity). Secondly, the ways of capturing and representing data on fisheries can be diverser. Finally, it appears very important to be able to reconstruct the dynamics of human activities over a longer period of time, and to broaden the way fisheries are considered beyond the economic lens. It is therefore necessary to take a closer look at the way in which the diverse and complex 'reality' of fisheries is coded, translated and transcribed into GI that can be simplifying and embedded into MSP processes.

Exploring perceptions of commercial fisher representation in management: A case study of the North Atlantic right whale UME, 2017-2021

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There is a growing recognition of the importance of involving stakeholders in marine governance and management to enable the inclusion of the knowledge and interests of those whose livelihoods are directly linked to the marine ecosystems. This study aims to understand the perceptions of fish harvester organizations as mechanisms to represent the interests of commercial fish harvesters during a resource use conflict in Atlantic Canada. It employs a case study approach, utilising semi-structured interviews and qualitative analysis to evaluate the perceptions of fisher representation during the development of the mitigation measures to protect the critically endangered North Atlantic right whale from fishing gear entanglements. The North Atlantic right whale population have faced an Unusual Mortality Event (UME) with 34 confirmed fatalities since 2017, with human interaction by gear entanglements and vessel strikes as the leading cause of death. This case study has been selected for its urgency and the consequences of the mitigation measures on the operations of commercial lobster and snow crab fish harvesters throughout the Gulf of St. Lawrence. It is argued that the effective

participation of fish harvesters in the design and implementation of mitigation measures can contribute to improved outcomes, whereby fishers can contribute to measures that are reflective of local priorities. The outcomes of this study indicate that there is a clear and valuable role for fisheries organization in the governance of Atlantic Canadian fisheries, but that strategic efforts are needed to overcome barriers of distrust and poor governance.

Coastal People Need to Helm the Blue Economy

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We need to get the blue economy right. Resilient marine and coastal socio-ecological systems are imperative to achieve our globally agreed upon Sustainable Development Goals. Terrestrial systems are reaching and surpassing carrying-capacity, and we are increasingly turning to the sea for sustainable foods, economies, and livelihoods.

Blue economies are expanding worldwide; yet, underlying economic priorities and high rates of expansion into the ocean are problematic. Our status-quo economies (by and large) continue to harm ecological integrity and expand social inequities and injustices. Without conscious and deliberate design, ‘blue economies’ in North America are set to replicate the errors of the ‘green economy’, which has largely failed to address sustainability issues within market economics.

To ‘get blue economy right’, development needs to be led by local knowledge, collaborative governance, and citizen led action. This local approach allows for better monitoring and stewardship opportunities; allows more prompt and appropriate response to stochastic events like pandemics or extreme weather; and allows for proactive adaptation in-line with shifting ecological baselines and social/cultural needs. Adaptive community approaches provide the best opportunity for ecological sustainability and positive socio-economic outcomes.

We are faced with a great opportunity as economies expand into our oceans; we can redefine priorities. The current financialization of resources generates opportunity primarily for investors – leaving local communities behind, bearing the burdens of unsustainable extraction. There are alternatives. Policies that protect and enhance the engagement and efficacy of local resource management can lead to greater local economic benefits and more sustainable and balanced socio-ecological systems.

