

**Workshop Report:**

# Putting Canada's Ocean Economy on the Path to Net Zero

**June 22 and 23, 2022**



**2021** United Nations Decade  
of Ocean Science  
**2030** for Sustainable Development



**Ocean Decade**  
Collaborative Center  
**Northeast Pacific**

**Tula**  
TULA FOUNDATION



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# Acknowledgements

This report was prepared by Kathryn Sheps and the Ocean Decade Collaborative Center for the Northeast Pacific and reviewed by Kate Henderson, Rebecca Martone, Nicola Smith and the participants of the Putting Canada's Oceans on the Path to Net Zero Emissions workshop. Mercedes Minck at the Tula Foundation provided graphic design.

This workshop was a collaboration between the Ocean Decade Collaborative Center for the Northeast Pacific and the University of British Columbia's Institute for Oceans and Fisheries and School of Public Policy and Global Affairs. Organizing committee members were: Dr Rebecca Martone, Dr William Cheung, Dr Rashid Sumaila, Dr Nicola Smith, Kathryn Sheps, Allan Berezny, Fiona Beaty and Karl Jessen.

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**Ocean Decade  
Collaborative Center  
Northeast Pacific**

The Ocean Decade Collaborative Center for the Northeast Pacific is a UN Ocean Decade-endorsed Contribution of the Tula Foundation. We support and facilitate collaborative, co-designed, and co-produced knowledge for sustainable solutions to ocean challenges in the Northeast Pacific region.



THE UNIVERSITY OF BRITISH COLUMBIA  
Institute for the Oceans and Fisheries  
Faculty of Science

The UBC Institute for the Oceans and Fisheries (IOF) contributes to a transformative global shift toward sustainable coastal ecosystems, oceans and fisheries. It brings together a community of Canadian and international experts in ocean and freshwater species, systems, economics, and issues—and provides new insights into how our marine systems function, and the impacts of human activity on those systems.

**Quadra Centre**  
for Coastal Dialogue

The Quadra Centre for Coastal Dialogue offers meeting space for small groups of experts who wish to generate ideas that touch on our core values through scientific, community and governmental collaboration. Through our affiliations with the Hakai Institute, Universities, First Nations, and various governments we see issues, disciplines and seemingly unrelated themes where we can help to build bridges through these forums.



The UBC School of Public Policy and Global Affairs is an interdisciplinary hub with particular expertise in Asia Pacific and sustainability policies, we draw on the expertise of UBC institutes, research centres, and faculties, and invite engagement with communities that span the globe.

## Executive Summary

The Putting Canada's Ocean Economy on the Path to Net Zero Emissions workshop was convened by the Tula Foundation's Ocean Decade Collaborative Center for the Northeast Pacific, UBC's Institute for the Oceans and Fisheries (IOF) and School of Public Policy and Global Affairs, in collaboration with the Quadra Center for Coastal Dialogue on June 22 and 23, 2022.

This workshop was developed with an understanding that a disconnect exists between climate policy and ocean policy within Canada's federal climate policy. Internationally, it is increasingly recognized that a whole of government approach is needed for ocean-climate action, including in governance approaches (e.g., UNFCCC SBSTA, 2022).

Putting Canada's Ocean Economy on the Path to Net Zero Emissions brought together a set of experts with representation from various Canadian ocean science and industry sectors to solicit opinions and perspectives to provide support for Canada, both domestically and internationally, to bridge this disconnect and harness the ocean and the ocean economy and help achieve net-zero emissions (see Appendix A). This two-day workshop identified paths to make meaningful contributions to bridge the disconnect between climate policy and ocean-sector policy in Canada including:

- The need for federal government ministries to ensure, enshrine and prioritize Indigenous peoples' rights to marine harvest, both now and into the future;
- The need to include marine sectors in decarbonization and fuel-switching plans, including both policy carrots (incentives to decarbonize) and sticks (removal of fossil fuel subsidies to marine industries, clear regulations and timeframes);
- The need for ocean data, regulations of marine economic sectors and policy to be clear, accessible and integrated across federal government siloes both within the Department of Fisheries and Oceans and across other departments mandated with developing Canada's Climate policies (i.e. Environment and Climate Change Canada and Natural Resources Canada, among others) and;
- For Canada's climate mitigation policies to be addressed in a common framework that clearly communicates how these actions contribute to a net-zero carbon future, their benefits and potential impacts.

Workshop participants wanted to communicate these collaboratively developed priorities immediately, and decided to draft a collaboratively edited letter to the Minister responsible for the Department of Fisheries and Oceans (DFO), the Hon. Joyce Murray, to share participants' recommendations. The contents of the letter were discussed with the Minister responsible for DFO in the week following the workshop and at the UN Ocean conference in Lisbon (held June 27-July 1, 2022), was finalized July 7, 2022 and was sent via email to the Minister July 22, 2022.

## **Day 1**

# **Assessing Greenhouse Gas Emissions from Canada's Ocean Economy Sectors**

The first day started with a context-setting presentation by Dr. William Cheung about the urgency of and current state of climate policy in Canada. Currently enacted climate policy in Canada is projected to result in 2.7° of warming by 2050, and is therefore insufficient to meet scientific targets for human safety and biodiversity. Thus, it is acknowledged that more research and policy guidance is needed to ensure the stability and sustainability of Canadian ecosystems. As part of its obligation under the Paris Agreement to mitigate carbon emissions, Canada has committed to net-zero emissions by 2050, including introducing and passing the Canadian Net-Zero Accountability Act (S.C. 2021, c.22) and publishing this year the 2030 Net Zero Emissions Plan: Clean Air, Stronger Economy, 2022 (see Appendix B - Documents and Resources).



Ocean scientists, experts and practitioners recognize that the ocean and climate systems are coupled and this coupled ocean-climate system affects movement of energy and heat around the globe. The ocean-climate nexus is important to acknowledge, as oceans play a critical role in regulating climate systems. For all these reasons, oceans must be centered in the development of climate solutions. While a range of ocean-based climate mitigation and protection actions have been identified and proposed, these actions have not been included in Canada's national mitigation strategies, or Nationally Determined Contributions (NDCs) under the Paris Agreement. Dr. Cheung also noted that, while there is momentum towards developing the blue economy in Canada, it is not yet evident that the climate crisis will be adequately addressed in the ocean-sector strategies currently being developed and implemented by the Canadian government.

Dr. Cheung described the objectives for this workshop, namely to harness participants' expertise to develop recommendations for the Government of Canada to better address oceans within climate policy, and climate within ocean-related policy and to create a working group or community of practice to assist in assessing the GHG emissions of Canada's ocean economy as well as the potential for solutions to mitigate those GHG emissions, and identifying policy pathways that can be implemented to help protect ocean ecosystems from the impacts of climate change.

Dr. Cheung introduced Dr. Nicola Smith, a post-doctoral researcher at UBC's IOF. Dr Smith presented a proposal for her early-stage research project, which will provide a framework for estimating and accounting for GHG emissions coming from Canada's ocean economic sectors. Dr. Smith presented a brief snapshot of her ongoing work to participants to elicit feedback and to spark discussion about the challenges and opportunities that this approach might present for decarbonizing ocean economic sectors in Canada.

Dr. Smith proposed using a modified Stabilization Wedges approach (Pacala and Socolow, 2004). This method would exclusively focus on emissions generated as a result of marine industries, including some that are not currently included in government accounting methods. Rather than using this approach to stabilize carbon emissions at a targeted level, the goal of Dr. Smith's use of a modified wedge approach is to identify options to completely offset all current GHG emissions from Canada's ocean economic sectors. These would act more like more 'offset wedges' rather than 'stabilization wedges'. Dr. Smith proposed utilizing a portfolio approach for combining mitigation methods to maximize different priorities using both quantitative and qualitative methods.

Initial reactions from workshop participants to Smith’s early-stage work were positive, although some participants had questions and concerns about the project’s framing and provided feedback intended to strengthen the methodology and approach outlined in Dr. Smith’s presentation including:

- How the project intends to grapple with the Environment and Climate Change Canada inventory of Canadian GHG emissions and the fact that some ocean sector industries are not included or only partially included in Canada’s ‘balance sheet’ for recording and tracing GHG emissions;
- That carbon accounting methodologies for the ocean and ocean economy might be challenging to assess and analyze due to the uncertainty in methods. Governments need certainty to take action—for example, Blue Carbon is an interest of the federal government as a potential climate solution, but it is not yet well enough developed to be included alongside better-understood climate solution policies in the federal government’s policy plan;
- That the stabilization wedge approach is an incremental one, and may no longer be a sufficient framing or one that progressive governments are still using or adopting;
- There are reports grappling with the sub-sectors facing increased carbon costs in the future, as well as changes in demand (both increases and decreases) as the economy transitions to a low-carbon future, which might be helpful in untangling GHG emissions portfolios in ocean-economic sectors.

Participants also recognized that the proposed methodology does not yet adequately incorporate topics such as marine protected areas, ocean-based carbon dioxide removal strategies, blue carbon, and the risks associated not only with the proposed mitigation solutions, but also with the risks and costs of inaction. A risk-based approach was identified as one that may resonate with federal government decision-makers.

## **Feedback on Proposed Approach**

Participants then broke into small groups and discussed suggestions to make the proposed modified stabilization wedge approach of highest utility. Recommendations from the group included:

- To reframe the project to a technical assessment of how ocean economic sectors contribute to Canada’s Net Zero future;
- To identify the categories or sectors of Canada’s ocean economy and systems that contribute to GHG emissions, regardless of whether those are currently included in ECCC’s GHG accounting frameworks for Canada;

- To identify the ways that marine sectors or categories can contribute to GHG emissions reductions, sinks and offsets (examples raised in the discussion included blue carbon and marine renewable energy);
- For each of the sectors, to identify existing solutions (safe bets) and wildcards (riskier, or earlier-stage technologies, for example), and describe possible pathways and obstacles to their implementation;
- To identify both GHG sources and sinks in the oceans and ocean economy and create integrated pathways via which the marine sector contributes to net zero—this might be in the form of a figure or chart that communicates the idealized change in GHG sources and sinks for each sector over time. Ideally, this would lead to an attempt to measure the vulnerability of ocean-climate mitigation actions to climate-change induced ocean warming—which would help center the need for solutions adequate to the scale of the problems.

## Day 1 Conclusions

Broadly speaking, the conversation, while ranging over many different aspects of the proposed research approach, identified that there has not been a public, comprehensive assessment of the ocean-climate nexus in research and policy in Canada. Participants also emphasized the need for the next update of Canada's NDC to include ocean industries and economic sectors. Revising Canada's NDC to include ocean sectors would ideally include an assessment of the GHG emissions by ocean sector as well as identifying and assessing ocean-based and nature-based climate solutions and realistically considering the feasibility of implementing these solutions at scale.



## Day 2

### Ensuring improved coordinations between Canada's Climate and Ocean Policy

Participants identified and supported a call for policy development that helps ocean economic sectors decarbonize—or as one participant put it, “We need to ensure that the blue economy strategy is a zero-carbon strategy.” Several participants pointed to the importance of aligning approaches, recommendations, and solutions with the way that the Canadian government operates to ensure maximal uptake by policy makers at the federal level to support the development and implementation of these policies.

The second day of this workshop began with a review and summary of the discussion from the previous day.

Next, participants developed a list of principles or values to be foregrounded in policy development. Participants repeatedly highlighted the key importance of social and environmental justice considerations when developing recommendations and implementing solutions, including for the Canadian government to fully follow through on Reconciliation with First Nations, Inuit and Metis people, including protecting the rights of these people to access and make use of their traditional territories, and protecting cultural heritage from changing climate. Participants highlighted the need to center the health and resilience of ocean ecosystems in discussions of climate change, as well as a need to move beyond environmental justice and towards an articulation of ecological justice that recognizes that people and natural ecosystems are, in fact, inseparable. The need to protect the most vulnerable communities and systems was also raised and strongly supported by participants.

Some of the conversation pointed to differences in targeting federal policy as opposed to provincial, local and community needs—including coastal Indigenous communities. Pacific Coastal First Nations communities and associations are beginning to develop policies to address climate change impacts” in their traditional territories. Participants noted that, in reality, a complex interplay of decision-makers will need to be engaged. While the federal government’s emissions reduction plan is a strong target, participants also recognized that much of what was being discussed in this workshop is not currently included in the federal emissions reductions plan and some critical aspects of this work is not yet at a level that it can be easily included in existing plans. Further, the group noted that

pathways are not yet clearly identified to make change at the federal level, and bureaucratic silos that exist between, among and within federal ministries and agencies will need to be broken down to facilitate improved coordination.

Conversation shifted towards strategic and upcoming opportunities to inform the government through active consultation processes, such as Canada's Blue Economy strategy (DFO), climate change policy (ECCC and NRCan), as well as other international climate engagement opportunities (DFO, NRCan, ECCC). Participants identified an opportunity in the workshop to send a letter, highlighting key issues and suggesting solutions, to the Minister responsible for DFO. There was broad agreement to this strategy, but recognition that ocean-climate policy development will not be successful in moving the dial on protecting ocean ecosystems if it is the responsibility of only one ministry or siloed into one or a few departments. Participants agreed that the ministers responsible for ECCC and NRCan should also be engaged as a way to increase collaboration and strengthen the impact of policy development.

## **Policy Prioritization Exercise**

Participants were divided into three breakout groups to discuss proposed priorities to federal government policymakers as a starting place for a strong ocean-climate policy. In these smaller groups, participants were asked to generate and post their expert opinion on ocean-climate policies they think are priorities either broadly or more specifically for the Canadian government to implement. These ideas were posted on a digital whiteboard, then participants in each breakout grouped similar policy ideas together and assigned them high, medium or low priorities. After this exercise, participants returned to the plenary session to share their work and discuss the results.

## The high-priority policies identified included:

That Crown governments have a responsibility to respect Indigenous People's constitutionally-protected rights to marine harvest and;

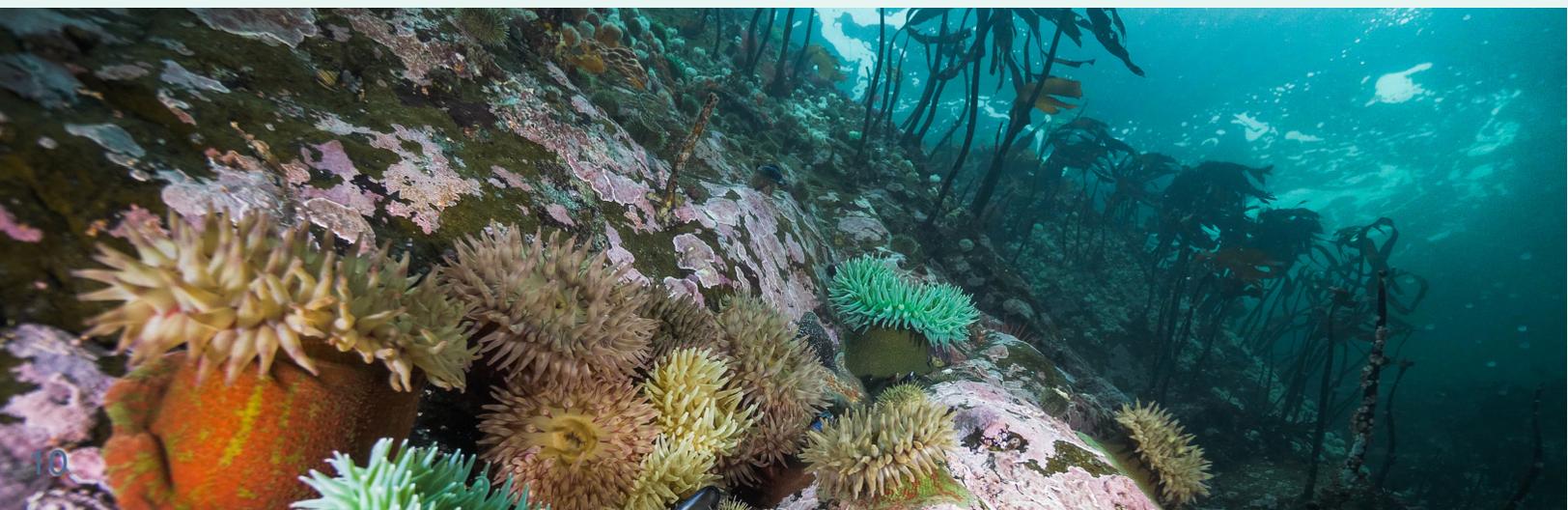
- Removal of fuel subsidies in fisheries and aquaculture sectors;
- Enable rapid shift to marine renewables;
- Add carbon labeling on ocean products (i.e. seafood);
- Rebuild and maintain fish stocks as carbon storage;
- Make ocean data, regulations and policy more accessible and integrate across government siloes.
- Implement integrated land, freshwater and ocean-based conservation approaches;
- Ensure integrated planning that explores co-benefits and trade-offs across impact categories (GHG emissions reductions, biodiversity conservation, economic, air and water quality);
- Invest in early-stage carbon storage projects;
- Incorporate consideration of climate impacts in management of MPAs and fisheries;
- Include ocean professionals in federal climate policy advisory bodies;
- Implement a moratorium on off-shore oil and gas exploration and extraction;
- Increase (by at least double the current commitment) the creation of offshore MPAs (to protect and avoid industrial impacts on seabed);
- Protect and restore estuary habitat and monitor carbon sequestration and co-benefits;
- Provide guidelines and support of carbon capture and sequestration projects and nature-based climate solutions
- Address climate mitigation actions in a common framework (such as a risk framework) that communicates how these actions contribute to a net-zero carbon future, their benefits and potential impacts;
- Provide federal incentives to electrify ferries, small vessels, recreational/tourist vessels.

There was a relatively high degree of similarity in priorities between the different groups, although the relative positioning of different policy priorities and exact articulation of policies may have differed. All groups expressed concern that federal government silos and the structure of ministries may prevent the kinds of interdisciplinary and collaborative policy action needed to move the dial on protecting and conserving oceans and harnessing their potential in the face of climate change. All groups also highlighted the need for federal government ministries to ensure Indigenous peoples' rights to marine harvest, both now and into the future. All groups prioritized policies incentivizing and supporting fuel switching and decarbonization of marine vessels, and rapidly increasing marine renewables.

## Day 2 Conclusions

The workshop closed with a recognition that this workshop offered a starting point for necessary, complex and interdisciplinary conversations about oceans and climate change in Canada.

Following the discussion of priorities, participants were invited to think about how to continue to work together. A small group expressed a desire to continue to collaborate and to be engaged in any continued scientific or technical analyses, such as the proposal by Dr. Smith to create a framework to assess the emissions from Canada's ocean economic sectors and strategies for offsetting these emissions. There was quick approval of a plan to draft a letter reflecting the policy priorities identified by the group to send to the Minister responsible for the Department of Fisheries and Oceans (see Appendix C). Many participants expressed support to send a similar document to the Ministers responsible for Natural Resources Canada and Environment and Climate Change Canada. The Tula Foundation's Ocean Decade Collaborative Center for the Northeast Pacific volunteered to take on the initial drafting of both the letter for the DFO Minister and a workshop summary document, to be shared with the Ministers responsible for ECCC and NRCan.





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<https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/emissions-reduction-2030.html>

**Environment and Climate Change Canada, 2022b. Adapting to the Impacts of Climate Change in Canada, An Update on the National Adaptation Strategy. Accessed online at:**

<https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/national-adaptation-strategy/report-1.html>

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Accessed online at: <https://www.science.org/doi/10.1126/science.1100103>

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# **Appendix A**

## **Workshop Preparatory Materials**

# Putting Canada's Oceans on the Path to Net-Zero Emissions



## Discussion Guide

June 22–23, 2022



## Acknowledgements

This workshop is being co-hosted by the Tula Foundation's Ocean Decade Collaborative Center for the Northeast Pacific, The University of British Columbia Institute of Oceans and Fisheries and School of Public Policy and Global Affairs, and the Quadra Center for Dialogue. This discussion guide was assembled by Kathryn Sheps, Project Coordinator of the Ocean Decade Collaborative Center for the Northeast Pacific. *A proposed path to net zero for the ocean economy in Canada* was written by Dr Nicola Smith.

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Institute for the Oceans and Fisheries  
Faculty of Science

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## Purpose of this Workshop

- ❖ To solicit expert opinion and perspectives on a stabilization wedge approach to determining a pathway to net zero emissions from Canada's ocean sector;
- ❖ To develop recommendations to Canada on how to assess and address ocean sectors contributions to emissions as well as show an entry point for highlighting ocean contributions to emission reductions;
- ❖ To discuss the opportunity to create a collaborative working group (or community of practice) to co-design and co-produce knowledge that informs Canada's approach to net zero.

It is intended that this workshop will provide an entry point for scientists, policymakers and ocean professionals working on ocean-climate issues in various ways to help inform how Canada considers, or reconsiders, the role of country's oceans and ocean economy sectors both in the domestic sphere, as in the setting of policy to achieve net zero emissions, as well as in the international sphere, as in international negotiations such as at COP 27.

This workshop will be conducted under Chatham House Rule: *participants are free to use the information received, but we ask that neither the identity nor the affiliation of the speaker(s), nor that of any other participant be revealed.*

## What is in this document

- List of workshop participants
- Some guiding questions to frame our conversation and ignite your thinking;
- A draft agenda (this may be subject to change);

Included alongside this package is a draft document entitled "A proposed path to net zero for the ocean economy in Canada" written by Dr Nicola Smith, which is intended to provoke discussion and provide a high-level framework for the first day of the workshop.

We hope that these tools will help you to prepare for a productive and meaningful conversation!

## **Putting Canada's Ocean Economy on the Path to Net Zero**

**June 22–23, 2022**

### **Convening Team**

Rashid	Sumaila	University of British Columbia
William	Cheung	University of British Columbia
Nicola	Smith	University of British Columbia
Rebecca	Martone	Ocean Decade Collaborative Center for the NE Pacific
Kathryn	Sheps	Ocean Decade Collaborative Center for the NE Pacific
Kate	Henderson	Ocean Decade Collaborative Center for the NE Pacific
Mahy	Saleh	University of British Columbia

### **Invited Participants**

Simon	Donner	University of British Columbia
Diane	Newell	University of British Columbia
Julia	Baum	University of Victoria
Karen	Hunter	Department of Fisheries of Oceans
Andres	Cisneros	Simon Fraser University
Natalie	Ban	University of Victoria
Maycira	Costa	University of Victoria
Jenn	Burt	Nature United
Sybil	Seitzinger	Pacific Institute for Climate Solutions
Carlos	Drews	Ocean Wise
Isabelle	Jubenville	Oceana
Andrew	Weaver	University of Victoria
Amanda	Bates	University of Victoria
Curran	Crawford	University of Victoria
Christina	Burridge	BC Seafood Alliance
Alejandro	Frid	Central Coast Indigenous Resource Alliance
Susanna	Fuller	Oceans North

Trent	Moraes	Coastal Climate Coalition
Carie	Hoover	Dalhousie University
Katie	Schleit	Oceans North
Andrew	Stewart	Department of Fisheries and Oceans
Paul	Blomerus	Clear Seas Centre for Responsible Marine Shipping
Zuomin	Dong	University of Victoria
David	Hardisty	University of British Columbia
Scott	Dallimore	Natural Resources Canada
Megan	Mathieson	Clear Seas Centre for Responsible Marine Shipping

# Agenda

This is a draft agenda - if changes are made, a revised agenda will be provided on the day of the workshop. All times are PDT.

## Day 1 — Assessing Emissions in Canada's Ocean Economy

- 9:30            Welcome
- Introductions, ground rules and the shape of the day
- 9:50            Setting the Context
- The opportunity to contribute to Canada's Climate Policy:
  - A proposed path to net-zero for the ocean economy in Canada presentation by Dr. Nicola Smith;
  - Clarifying questions and answers
- 10:30           Digging in:
- Closer look at the draft paper + framework;
  - What do we know, what do we still need to know?
- 11:10           BREAK
- 11:20           Discussion:
- What is needed to move towards knowledge/solutions?
  - What kinds of data or analysis are required and are any of these in progress?
  - Whose expertise is needed?
- 12:00           Next Steps: how to move this draft forward?
- 12:30           Close of Day 1

## Day 2 — Policy Pathways and Frameworks

- 9:30            Welcome back!
- 9:40            Context and Background
- How is today's conversation different from yesterdays?
  - What is the policy context and frame?
  - Clarifying questions and answers
- 10:10           Discussion: Principles and Values for Policy recommendations

- 10:35 Breakout group discussions to identify policy recommendations:
- Reduce;
  - Remove;
  - Repair;
- 11:10 Break
- 11:25 Plenary discussion:
- What are the information and knowledge gaps?
  - How to connect this work to the policy process? What leverage can we use?
  - Who else needs to be at the table?
- 11:55 What comes next- how to take this work forward? How can we make the policy recommendations/paper as effective as possible?
- 12:20 Closing
- What we've heard over the last 2 days;
  - next steps.

## Guiding Questions

These questions are included to help guide the conversation we aim to have at the workshop, help kickstart your thinking, and organize your thoughts and ideas:

- ❖ What are the Canadian economic sectors in Canada today and in the future?
- ❖ How do ocean economic sectors contribute to Canada's carbon emissions budget?
- ❖ Ocean economic sectors have been treated as minimally important when it comes to climate mitigation, but is this true?
- ❖ What sectors of the blue economy are targets for quick action on decarbonization?
- ❖ How can we protect and maintain ocean ecosystems in the face of climate change?
- ❖ What role should Carbon Dioxide Removal play in Canada's response to climate change?
- ❖ How do we keep people and communities at the center of climate action, while enabling rapid policy shifts?
- ❖ How should Canada account for the oceans and ocean-climate nexus in domestic policy? In international climate policy negotiations?
- ❖ How can we enable a faster move to action on ocean-climate policy - and not just call for further consultations and study?

We hope that the information and questions provided in this discussion guide will help to frame our upcoming time together. We look forward to an open, honest, informed, and constructive dialogue.

# **Appendix B**

## **Additional Resources and Reports**

# Putting Canada's Ocean Economy on the Path to Net Zero Emissions

## Additional Reports and Resources

*These reports, publications and other resources were cited by dialogue participants during the workshop. This is not an exhaustive bibliography, these reports are included to provide further context and additional information.*

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[https://blueindicators.ec.europa.eu/sites/default/files/2021\\_06\\_BlueEconomy\\_Report-2021.pdf](https://blueindicators.ec.europa.eu/sites/default/files/2021_06_BlueEconomy_Report-2021.pdf)

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Forrest et al, 2022. Riding the wave: Challenges and opportunities for marine renewable energies in Canada's energy transition. Working Paper #2022-02, Institute for the Ocean and Fisheries, University of British Columbia. Accessed online at:  
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# Appendix C

**Letter to Minister responsible for  
Department of Fisheries and Oceans**

The Honourable Joyce Murray, PC, MP  
Minister of Fisheries and Oceans and the Canadian Coast Guard  
200 Kent Street  
Station 15N100  
Ottawa, ON K1A 0A6

Dear Minister Murray,

Canada can and must better integrate the oceans into climate policy as well as center climate change in the creation and implementation of the Blue Economy Strategy, in order to ensure the success of each. While the oceans, marine ecosystems and dependent human communities are impacted by climate change, the oceans also offer many climate solutions.

Achieving the 2050 net-zero emissions target, as outlined in the 2021 Government of Canada's Net-Zero Emissions Accountability Act, and Canada's engagement in the Ocean and Climate Change Dialogue under the UNFCCC will require coordinated efforts within and among government ministries. Currently, the critical roles of ocean economic sectors, and their importance to protecting and maintaining healthy ocean ecosystems, are incompletely addressed in emissions reductions plans.

This past week, the Tula Foundation's Ocean Decade Collaborative Center for the Northeast Pacific, UBC Institute for the Oceans and Fisheries and UBC School of Public Policy and Global Affairs co-convened a workshop to explore the opportunity to identify and address gaps in Federal climate and emissions reductions plans. The workshop brought together 32 ocean climate experts in Canada with combined 400+ years of expertise in ocean and climate science, and engineering and representing academic, NGO and government sectors to discuss how we might advance more comprehensive ocean-climate planning, adaptation and mitigation in Canada, while ensuring the oceans are healthy, productive and resilient for generations to come. The following represent the key outcomes from this workshop, and participants expressed their desire to share this work with you without delay.

The participants identified some shared principles in exploring and implementing ocean-based climate solutions: The participants urge your ministry and Canada to pursue an approach based on:

- ocean and climate optimism;
- science;
- conservation of ecosystems and its multiple co-benefits as a key part of the solution.
- the protection of Indigenous communities' rights of harvest and cultural practice;

That:

- places people and communities at the center (equity, inclusion, justice);
- supports economic opportunities while reducing emissions, removing carbon from the atmosphere, and repairing ecosystems;
- increases ambition and urgently delivers strong and sustained mitigation and adaptation outcomes;
- and generates co-benefits for people while enhancing biodiversity outcomes;

The participants also highlighted four priority areas to enable the inclusion of the ocean in climate mitigation and adaptation:

### **1. Improved Coordination across Government of Canada and Internationally**

- Approach needs to be connected across Ministries: improved coordination across federal departments to integrate ocean-climate across all policies;
- Federal government should provide leadership and incentivize provincial and local, including Indigenous, governments to integrate blue economy investments and climate change policies;
- Emissions Reductions Plans need to comprehensively account for marine industries. We support an integrated pathway through which the marine sector contributes to achieving net-zero emissions;
- The contribution and future potential of ocean ecosystems to blue carbon needs to be included in the national carbon accounting;
- Incentives for marine industries need to be clearly articulated and the sectoral emissions reductions targets for marine economic sectors must be clearly identified;
- When it is next revised, Canada's Nationally-Determined Contributions should comprehensively include coastal, ocean and marine industries.

### **2. Positioning Canada's Blue Economy for growth and success in the face of climate change and reduce emissions to meet Net-Zero goals**

- Canada's Blue Economy Strategy must be a net-zero strategy.
- Oil and Gas moratorium: We commend the government on current moratoria. Now, despite Baie du Nord approval, we recommend the phase-out of fossil fuel exploration, and a commitment to no new projects after 2030;
- Remove any existing fuel subsidies from marine sectors and instead incentivize industry-wide fuel-switching/electrification;
- Rapid scale-up of marine renewables, in particular for diesel-dependent remote and Indigenous communities;
- Take steps to reduce dependence on international shipping by shoring up and strengthening domestic supply chains;
- Take leadership in marine shipping and other industries (switch fuels, calculate and make transparent the emissions arising from marine industries).

### **3. Protect and restore marine ecosystems to sustain and enhance adaptive capacity and sustainable economic activities**

- Moratorium on deep-sea mining in Canada's EEZ to demonstrate precautionary principle: provide support for research to better/further understand the complexity of deep sea ecosystems;
- Minimize the impacts of fishing, particularly bottom trawling, on ecosystems' carbon storage and sequestration potential;
- Reduce fishery catches to levels that safeguard food webs and carbon sequestration processes;
- Increase investment in Marine Protected Areas, beyond the level currently budgeted to achieve 30% by 2030, to safeguard marine ecosystems and provide resilience, adaptive capacity and

insurance in the face of climate change, as well as avoid release of carbon due to industrial, fishing and other anthropogenic impacts on the seabed.

- Ensure that Marine Protected Areas include offshore areas and adequate adjustments in order to maintain ecosystem integrity in changing climate.
- The Canadian government, guided by UNDRIPA (2019) and the TRC Calls to Action, has a responsibility to respect and protect First Nations' and Indigenous communities' rights of harvest and cultural practice;
- Protect and restore coastal, estuarine and wetlands habitats on all coasts, including kelp forests, seagrass meadows and salt marshes among others, and make stronger connections between land-use and coastal management priorities.

#### 4. **Invest in R&D for nascent climate reduction technologies and nature-based solutions**

- Provide guidelines and support for safe experimentation of ocean-based carbon capture and sequestration that are in early development but could have impact at scale;
- Investigate and quantify the carbon-capture potential and other climate and non-climate co-benefits of nature-based solutions to climate change.

We suggest that the federal government set up an across multi-ministerial task force (between Fisheries and Oceans Canada and Environment and Climate Change Canada) to facilitate the development of strategies that integrate the oceans into climate policy as well as center climate change in the creation and implementation of the Blue Economy Strategy.

We will be delighted to share with you a full workshop report that further explains the above principles and priorities. The report is currently in preparation, and will be provided to you upon its publication.

Sincerely,

William Cheung and Rashid Sumaila (UBC),  
Rebecca Martone and Kathryn Sheps (Ocean Decade Collaborative Centre for the Northeast Pacific),  
on behalf of:

Stephanie Arnold, Climatatlantic  
Natalie Ban, University of Victoria  
Amanda Bates, University of Victoria  
Julia Baum, University of Victoria  
Paul Blomerus, Clear Seas Centre for Responsible Marine Shipping  
Christina Burridge, BC Seafood Alliance  
Jenn Burt, Nature United  
Andrés Cisneros-Montemayor, Simon Fraser University  
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