BC OAH ACTION FORUM
Executive Summary

Tula
TULA FOUNDATION

OVERVIEW

The BC Ocean Acidification and Hypoxia (OAH) Action Forum, hosted by the Tula Foundation, was held at the Vancouver Island Conference Centre in Nanaimo on March 3rd, 2026. This gathering united scientists, government representatives, Indigenous groups, community members, and members of the seafood industry to reflect on progress made through BC's OAH initiatives. Participants aimed to chart the next phase toward protecting the province's marine ecosystems and coastal economies from ocean acidification and hypoxia, two major stressors associated with climate change.

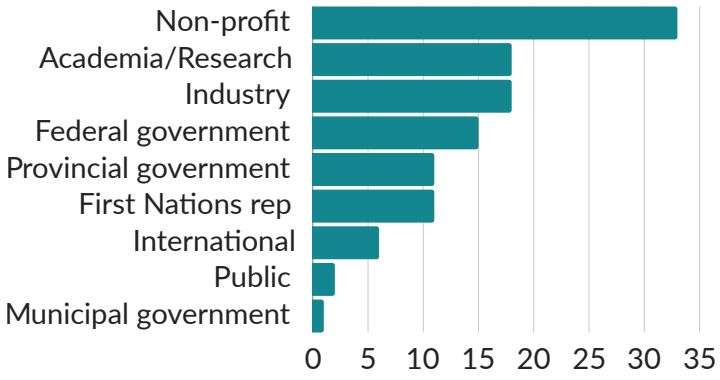
OCEAN ACIDIFICATION AND HYPOXIA IN BRITISH COLUMBIA

Ocean acidification and hypoxia pose major risks to BC's seafood industries, with projected losses in the hundreds of millions by 2050. In response, the Province of BC released the BC OAH Action Plan in 2023, developed with input from scientists, communities, Indigenous groups, and government representatives. Since its release, the Province has invested $1.7 million into 11 OAH research and mitigation projects through the Climate Ready BC Seafood Program.

Watch this animated video to better understand ocean acidification and hypoxia, and how these issues are unfolding within the context of British Columbia

WHO ATTENDED

There were 115 participants at the forum, with almost 70 in-person and the rest signing on remotely, with representation from a diversity of sectors.



Distribution of participants by sector at the BC OAH Action Forum.

GOALS OF THE FORUM

- **Assess the achievements and opportunities with the Climate Ready BC Seafood Program**
- **Summarize ongoing OAH mitigation and adaptation efforts across all sectors**
- **Bridge knowledge, networks, and efforts to foster long-term collaboration supporting sustainable OAH initiatives**
- **Document accomplishments and remaining needs under the BC OAH Action Plan**

THE OAH ACTION PLAN LOGO

Doug LaFortune, a First Nations carver, agreed to develop the BC OAH Action Plan logo, drawing on a word cloud created during the first Action Plan workshop. He returned with a concept closely reflecting this input, later enhanced with kelp and footprints and a CO_2 molecule.

OPENING ADDRESS

Dr. Myron Roth, Province of BC

Dr. Myron Roth (Director of Climate Risk Management and the Co-Chair of the BC OAH Action Plan) provided background context for the BC OAH Action Plan, tracing the path from the early-2000s Washington State oyster seed crisis, where ocean acidification was first identified as causing shellfish hatchery mortalities, through a series of key milestones:

2007-2008 DFO State of the Pacific Ocean (SOPO) report first flagged ocean acidification as an emerging issue, showing critically low aragonite and calcite saturation on the BC/US west coast.

2015 Aquaculture Association of Canada workshops produced a comprehensive reference report on aquaculture and climate change.

2017 BC government invests $200K in OASISS (Ocean Acidification Shellfish Industry Seed Supply) Project to support research and equipment needs for the BC Shellfish Growers Association, and a selective oyster breeding program at Vancouver Island University.

2022 BC eventually produces its own BC OAH Action Plan which features 5 goals and 62 actions to help address OAH in BC.

2023 The Climate Ready BC Seafood (CRBS) Program was launched, which funded 11 recipients to undertake applied OAH resilience work across the province.

INTERNATIONAL OA POLICY ACTION

Jessie Turner, OA Alliance

Jessie Turner (Executive Director of the International Alliance to Combat Ocean Acidification) discussed global efforts to advance coordinated government responses to ocean acidification and highlighted how British Columbia's work contributes to international action. She described how the OA Alliance was established in 2016 to bring west coast leadership to the global stage and encourage governments to recognize ocean acidification as a climate, seafood security, and blue economy issue.

- The OA Alliance was launched to encourage more governments to address ocean acidification and highlight the consequences of inaction.
- Climate change, blue economics and food security is a key message that is missing from current OA policy.
- The OA Alliance maintains a continuously updated toolkit to support jurisdictions developing and implementing OA action plans.
- The Alliance works across four major international frameworks and facilitates leadership circles that support domestic action planning and collaboration among governments.
- The BC OAH Action Plan aligns with global frameworks and contributes to reporting under the United Nations Sustainable Development Goals (SDGs), with BC research on seafood sensitivity, OAH hotspots, and fisheries distribution helping inform international discussions.

Participants were polled ... let's see what they had to say

In three words or less, what is your main concern regarding OAH in BC?

THE CLIMATE READY BC SEAFOOD (CRBS) PROGRAM

With support from British Columbia's Ministry of Agriculture and Food, the Tula Foundation delivered the Climate Ready B.C. Seafood Program. This program provided $1.7 million in funding to support actions identified in the B.C. (OAH) Action Plan.

The Climate Ready B.C. Seafood program addressed priorities identified in the Action Plan, funding projects that support coastal communities in understanding, mitigating, and adapting to the impacts of OAH on B.C.'s oceans and coasts. In particular, the program funded projects that supported four key program areas (1) advancing scientific understanding of ocean acidification and hypoxia (OAH) (2) Collaborations, knowledge transfer, awareness and understanding related to OAH (3) Mitigation, adaptation and resilience to OAH (4) Interactions between Marine Carbon Dioxide Removal approaches and OAH.

Learn more about the program and the recipients here!

VIDEO FEATURE

CRBS RECIPIENT LIGHTNING TALKS

Ten of the eleven CRBS recipient groups delivered brief lightning talks highlighting their projects, key findings, and lessons learned throughout the program.

1. Ocean Networks Canada - Dr. Kohen Bauer

This project upgraded the Baynes Sound observatory to a profiling mooring capable of measuring OAH indicators throughout the water column, improving long-term monitoring capacity in one of BC's most important shellfish growing regions.

2. T. Buck Suzuki Foundation - Alaina Pyde and Emily Orr

This citizen science initiative engaged commercial fishers in collecting ocean acidification and hypoxia data using simple water testing kits, generating over 80 samples and demonstrating the value of fisheries-based timeseries monitoring and cross-sector collaboration.

3. Wilderness Tourism Association - Dr. Russell Markel

A citizen science initiative involving small expedition tourism vessels deployed oceanographic sensors across coastal BC, expanding nearshore environmental monitoring and engaging both industry operators and guests.

4. University of British Columbia - Dr. Christopher Harley and Georgia Hall

Experimental work with mussels, oysters, and Dungeness crab identified species-specific thresholds of vulnerability to ocean acidification, highlighting potential impacts on shell growth, strength, and susceptibility to predation relevant to shellfish aquaculture.

5. Maaqutusiis Hahoulthee Stewardship Society - Hanna Meyer and Ryan Teremy

Nation-led monitoring program conducts year-round, full water column measurements at 16 inlet sites in Clayoquot Sound to track hypoxia and ocean conditions, contributing data to regional modeling efforts and supporting stewardship, fisheries management, and long-term food security planning.

6. Salish Sea Indigenous Guardian Association & Semiahmoo First Nation - Jacklyn Barrs

This project combined Indigenous knowledge and scientific monitoring to assess whether eelgrass meadows in Semiahmoo Bay improve water quality and support resilience of shellfish and coastal ecosystems to OAH.

7. Redd Fish Restoration Society - Emily Fulton

This project partnered with four local nuučaanuł Nations to monitor kelp habitats and oceanographic conditions across 28 kelp areas and 54 stations in Clayoquot and Northern Barkley Sounds, supporting collaborative monitoring, Guardian training, and future restoration and conservation planning.

8. Vancouver Island University - Dr. Timothy Green

Using genomic analysis of Pacific oysters exposed to ocean acidification, this project identified a genetic marker associated with improved growth under OA conditions, enabling selective breeding for more resilient oyster stocks.

9. Nova Harvest Ltd. - Angela Fortune

By operating a Burke-o-Lator monitoring system in Barkley Sound, this project generated two years of continuous seawater chemistry data to guide hatchery practices and improve resilience of BC's Pacific oyster seed production.

11. North Island College - Logan Zeinert

This project tested a real-time ocean acidification monitoring system combining conventional and low-cost sensors to evaluate their effectiveness for community and industry monitoring in eelgrass habitats in Semiahmoo Bay.

B.C. OAH ACTION FORUM MARCH 2026

"HOW WE GOT HERE"

OYSTER SEED CRISIS IN EARLY 2000's

CCSI 2008-DFO

2008 DFO REPORT- RECOGNITION OF OAH

WASHINGTON OA BLUE RIBBON PANEL

OA SHELLFISH INDUSTRY SEED SUPPLY PROJECT. 2017 → VIU → HAKAI → BCSGA

BC PRELIMINARY STRATEGIC CLIMATE RISK ASSESSMENT 2019

BC OAH ADVISORY COMMITTEE 2021

BC-OAH

OAH ACTION PLAN 2023

NEW PROGRAM!

CLIMATE READY BRITISH COLUMBIA SEAFOOD PROGRAM

- MONITORING
- MITIGATION
- ADAPTATION

FUNDING FOR COMMUNITY INITIATIVES THAT HELP US BECOME MORE RESILIENT

"GOALS OF THE FORUM"

- ASSESS ACHIEVEMENTS + OPPORTUNITIES OF THE CLIMATE READY BC SEAFOOD PROGRAM
- SUMMARIZE OAH MITIGATION + ADAPTATION ACROSS SECTORS
- BRIDGE NETWORKS, KNOWLEDGE + EFFORTS TO FOSTER LONG-TERM COLLABORATION ON OAH INITIATIVES
- DOCUMENT ACCOMPLISHMENTS + NEEDS UNDER THE OAH ACTION PLAN

"THE OTHER CARBON PROBLEM IS MORE INSIDIOUS IS ALMOST INVISIBLE TO THE NAKED EYE IS MICROSCOPIC AT ITS ONSET POKING TINY HOLES IN THE BASE OF THE FOOD CHAIN IS PROPAGATING IS DISMANTALING IS THREATENING TO UNDERMINE SYSTEMS IN THEIR ENTIRETY.."
Samantha Jones

JAYE BIRD ILLUSTRATION

CLIMATE READY BC SEAFOOD PROGRAM

LIGHTNING TALKS

VANCOUVER ISLAND UNIVERSITY
OAH RESISTANT OYSTERS

BROOD-STOCK

"AKA SEEDS"

PACIFIC OYSTER

OA INTERFERES WITH OYSTERS SHELL GROWTH

PROJECT IS WORKING TO IDENTIFY + SELECT FOR GENETIC TOLERANCE TO OA IMPACTS

MITIGATING IMPACTS AND ADAPTING TO CHANGES

NOVA HARVEST
OAH MONITORING FOR OYSTER SEED SUPPLY

ENHACING OAH MONITORING FOR OYSTER SEED PRODUCTION IN BARKLEY SOUND

ARAGONITE

BURKE-O-LATOR → pCO_2

REAL-TIME DATA

USED DAILY BY INDUSTRY

OA IMPACTS GROWTH

pCO_2 LOW HIGH

UBC
IDENTIFYING THRESHOLDS

MORE OA

LESS OA

LOOKING AT THRESHOLDS OF VULNERABILITY TO OA IN BC SHELLFISH

WEAK SHELLS = MORE PREDATION

OCEAN NETWORKS CANADA
MONITORING MOORING

UPDATING ONC's OBSERVATION STATION IN BAYNES SOUND

TEMP

pH

pCO_2

DISSOLVED O_2

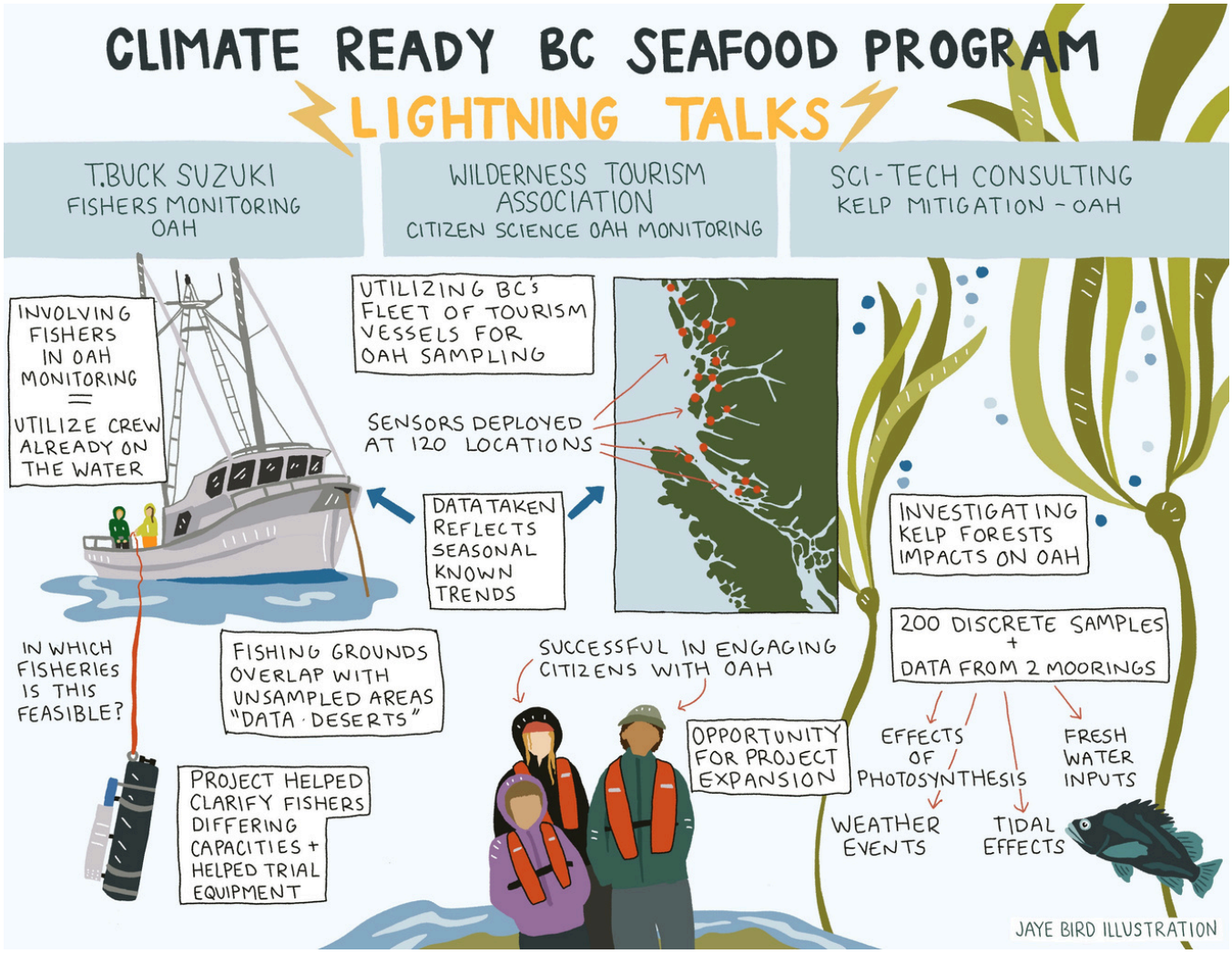
SALINITY

PROVIDES KEY OAH INDICATORS FOR KEY SHELLFISH FARMING REGION + HAS UPGRADED TO SAMPLE THROUGH WATER COLUMN

MUSSELS ARE MORE RESILIENT TO OA

DATA CAN HELP INFORM FARMERS

JAYE BIRD ILLUSTRATION


CLIMATE READY BC SEAFOOD PROGRAM
LIGHTNING TALKS
T.BUCK SUZUKI
FISHERS MONITORING OAH
WILDERNESS TOURISM ASSOCIATION
CITIZEN SCIENCE OAH MONITORING
SCI-TECH CONSULTING
KELP MITIGATION - OAH
INVOLVING FISHERS IN OAH MONITORING = UTILIZE CREW ALREADY ON THE WATER
UTILIZING BC'S FLEET OF TOURISM VESSELS FOR OAH SAMPLING
SENSORS DEPLOYED AT 120 LOCATIONS
DATA TAKEN REFLECTS SEASONAL KNOWN TRENDS
INVESTIGATING KELP FORESTS IMPACTS ON OAH
200 DISCRETE SAMPLES + DATA FROM 2 MOORINGS
EFFECTS OF PHOTOSYNTHESIS
FRESH WATER INPUTS
WEATHER EVENTS
TIDAL EFFECTS
IN WHICH FISHERIES IS THIS FEASIBLE?
FISHING GROUNDS OVERLAP WITH UNSAMPLED AREAS "DATA DESERTS"
SUCCESSFUL IN ENGAGING CITIZENS WITH OAH
OPPORTUNITY FOR PROJECT EXPANSION
PROJECT HELPED CLARIFY FISHERS DIFFERING CAPACITIES + HELPED TRIAL EQUIPMENT
JAYE BIRD ILLUSTRATION


CLIMATE READY BC SEAFOOD PROGRAM
LIGHTNING TALKS
MAAQUTUSIIS HAHOULTHEE STEWARDSHIP SOCIETY
HYPOXIA MONITORING
REDD FISH RESTORATION SOCIETY
COLLABORATIVE NEARSHORE MONITORING
SEMIAHMOO NATION + SSIGA NORTH ISLAND COLLEGE
EELGRASS + OAH
COMMUNITY OWNED DATA
16 INLET SITES
YEAR-ROUND
CTD SITES
TOFINO
N. BARKLEY + CLAYOQUOT SOUND
28 KELP BEDS MAPPED
CONTINUE + EXPAND NEARSHORE HEALTH + OCEANOGRAPHIC MONITORING
SUPPORTS LOCAL AND REGIONAL RESEARCH + CONSERVATION
PROJECT COLLABORATION
NORTH ISLAND COLLEGE
TESTING OAH SENSORS
OAH DATA COLLECTION
DRONES TO MAP SEAGRASS BEDS
TRADITIONAL FOODS
MONTHLY, FULL WATER COLUMN MONITORING
CONDUCTIVITY
DISSOLVED O2
TEMPERATURE
HELPS WITH MODELLING
KNOWLEDGE TRANSFER
COLLABORATION
WATER SAMPLING @ 54 SITES
SALISH SEA INDIGENOUS GUARDIANS ASSOCIATION
ASSESSING EXTENT + HEALTH OF SEAGRASS IN SEMIAHMOO BAY
nuučanuł NATIONS
5 FIRST NATIONS PARTNERS
RESULTS =
INCREASED HYPOXIA + SEA SURFACE TEMPS IN CLAYOQUOT SOUND STUDY SITES
JAYE BIRD ILLUSTRATION

OAH DATA INTEGRATION

Canadian Integrated Ocean Observing System (CIOOS) Pacific Workshop

Dr. Jordan Watson
Dr. Taimaz Bahadory
Dr. Yayla Sezginer

A workshop on integrating OAH data through CIOOS Pacific explored how modelled and in-situ datasets can be made interoperable to improve access and usability. CIOOS facilitates ocean data sharing by connecting providers and users through regional associations, supported by tools such as the Data Explorer, Catalogue Map, and Data Catalogue.

The session also introduced a new interactive visualization and decision-support tool that uses oceanographic models to display location-specific OAH variables over time. Current limitations include reliance on model outputs and restricted data downloads (image-only).

The tool has applications in hatchery operations, environmental monitoring, sensor-model comparisons, and biogeochemical modelling, with plans to integrate the LiveOcean model and additional observational data. Community feedback is being gathered to guide further development.

KEY TAKE-AWAYS

- CIOOS enables data discovery and collaboration, not storage;
- Real-time OAH monitoring faces technical, funding, and expertise barriers;
- A new OAH tool provides interactive, location-specific insights for decision-making;
- Community-submitted data is essential to strengthen models and coverage.

View beta version of the OAH app here!*

**still under development, not yet mobile friendly*

TRENDS IN DISSOLVED OXYGEN

Dr. Charles Hannah

Dr. Charles Hannah is a research scientist in physical oceanography with DFO at the Institute of Ocean Sciences in Sidney, British Columbia. In his talk, he discussed how subsurface oxygen in BC waters has been declining since the 1950s, with long-term trends indicating an average decrease of approximately 0.5 µmol/kg per year and a possible 20% loss since 1960.

- Monitoring relies on ship surveys, moorings, and autonomous gliders, which help connect spatial and temporal patterns that point measurements alone cannot capture.
- The hypoxia layer starts to appear in 2021 with sustained events since 2022, a feature of the open ocean shelf. Potential explanations for low oxygen include circulation of plankton and microbial consumption but offshore oxygen depletion has largely been ignored.
- Trends vary regionally across BC, with consistent decreases in the Strait of Georgia, strong seasonal variability along Vancouver Island, and complex seasonal cycles in Hecate Strait.
- Ongoing and future work aims to link BC oxygen trends with North Pacific oceanography and Alaska glacier melt, emphasizing the importance of continuous, spatially extensive monitoring to understand ecosystem impacts.

OA IN CANADA

Dr. Kristina Barclay

Dr. Kristina Barclay (Co-Lead of the Canadian Ocean Acidification Community of Practice, OA CoP) outlined Canada's unique vulnerability to ocean acidification (OA) due to its longest coastline in the world, three distinct ocean basins, high-latitude waters, and naturally corrosive conditions in the Pacific, Arctic and Atlantic, amplified by seasonal processes such as sea-ice melt.

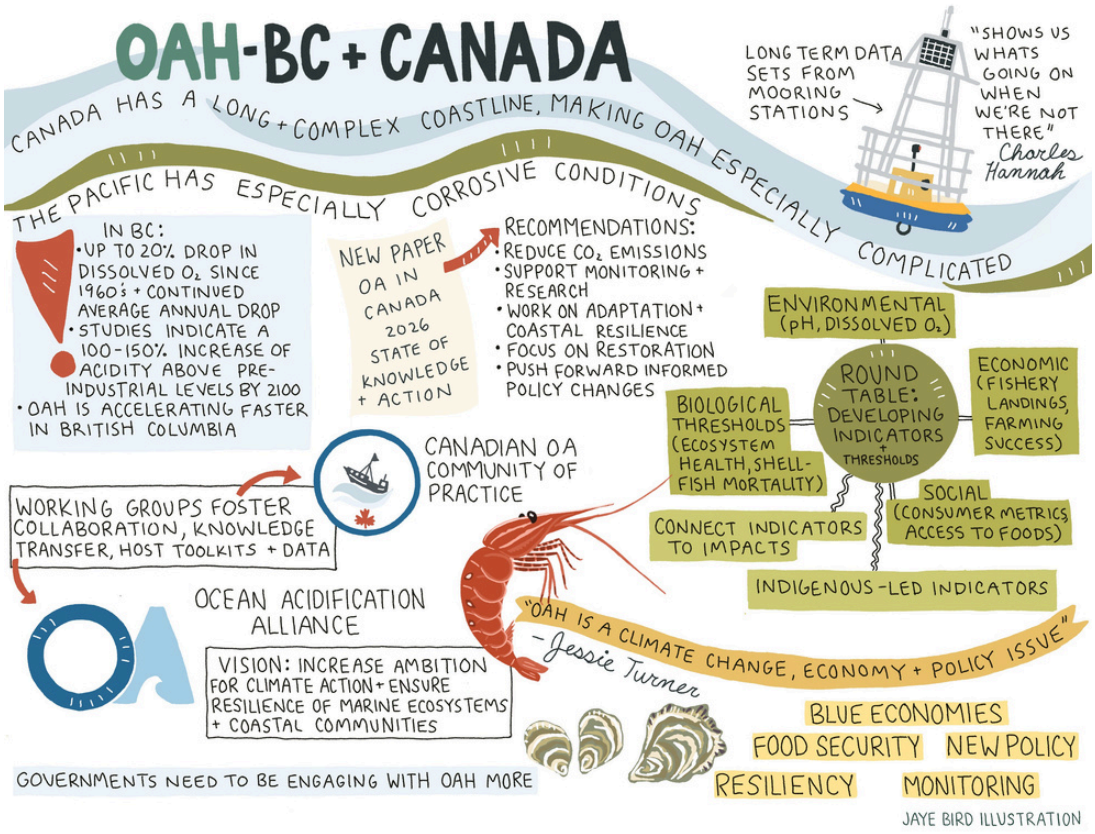
- Regional variation and diverse priorities make coordination challenging, prompting the formation of the Canadian OA Community of Practice
- The community supports initiatives like the BC OAH Action Plan, coordinates across sectors, represents Canada internationally, and develops resources covering current knowledge, modelling, socioeconomics, and cross-jurisdictional management.
- Key outputs include OA recommendations for decision-making, an app highlighting long-term biogeochemical time series, regional models, newsletters, webinars, and an expert database.
- OA research primarily focuses on economically important fisheries species, with many areas still understudied. Central recommendations emphasize coordinated data collection, policy alignment, and societal engagement to improve outcomes for both ecosystems and communities, led in part by BC and Indigenous groups.

DEVELOPING OAH INDICATORS IN BC

Explore OA datasets in CIOOS catalogues!

Community Roundtable

A roundtable on developing standardized OAH indicators for BC, produced a substantial discussion. Key themes:



Simplicity vs. nuance: There was broad agreement that useful indicators must be simple and communicable to policymakers, even if scientifically imprecise. Starting with 3 agreed-upon metrics (e.g., a BC OA index, dissolved oxygen trend, temperature) was proposed as a pragmatic first step.

Using a **keystone-sensitive species** (e.g., oysters) with commercial yield or biomass data tracked alongside environmental variables was suggested as a way to capture ecosystem-level responses over time.

Species-specific vs. ecosystem-level: Participants debated whether to track direct biological impacts (e.g., oyster larval mortality, butter clam recruitment) or environmental thresholds. One speaker pointed out that organisms may be food-limited before they're killed by acidification directly.

Multiple speakers noted that the ultimate solution to OA is **reducing atmospheric CO2**. Local interventions (eelgrass conservation, habitat protection) can buffer but not reverse the trend.

What biological and economic indicators should accompany environmental indicators to reflect real-world impacts on hatcheries, farms, and coastal food security?

OAH AND INDIGENOUS FOOD SOVERIGNTY

Chief Harley Chappell

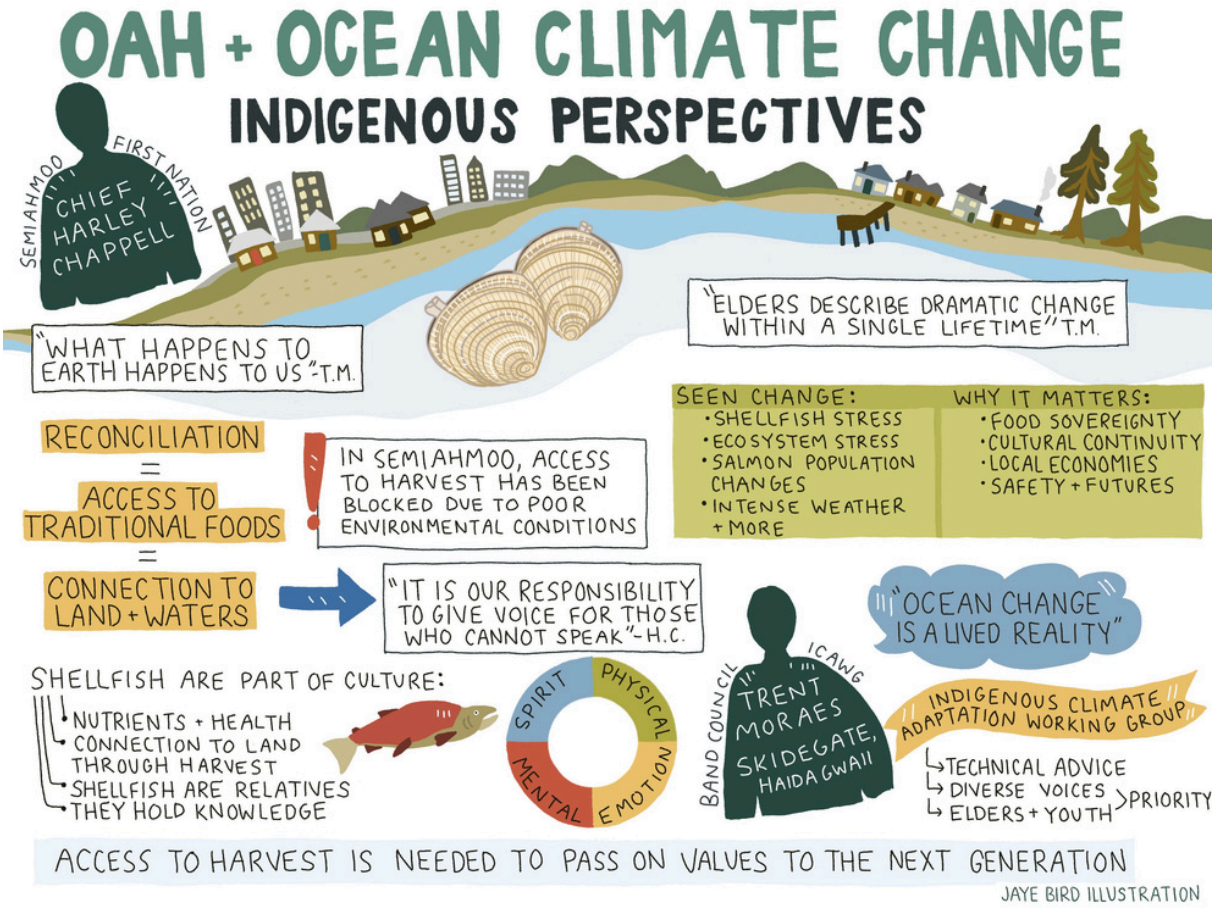
Chief Harley Chappell of Semiahmoo First Nation spoke to the deep connections between ocean health, Indigenous food sovereignty, and cultural continuity. As Chair of the Shared Waters Alliance, he highlighted efforts to revitalize traditional shellfish harvesting in Semiahmoo Bay, and the importance of restoring both ecosystems and relationships with the marine environment.

- OAH directly impact Indigenous food sovereignty, particularly through the decline of traditional shellfish harvesting, which is central to culture, identity, and sustenance.
- Reconciliation requires a renewed understanding of the interconnected relationship between people and the environment—one that recognizes shellfish and marine ecosystems as integral to cultural and ancestral identity.
- Barriers to harvesting, including water quality concerns, contamination, and regulatory complexity, and limited access to traditional harvesting areas.
- Restoring access to traditional foods is essential for rebuilding knowledge systems, strengthening community well-being, and reconnecting younger generations to cultural practices and environmental stewardship.
- Addressing these challenges is a shared responsibility, requiring collective action across governments, communities, and sectors to support healthy ecosystems and resilient coastal communities.

Deputy Chief Trent Moraes

Trent Moraes (Haida, Skidegate; Deputy Chief Councillor and Co-Chair of the Indigenous Climate Adaptation Working Group, ICAWG) emphasized that ocean-related climate change is not solely a scientific issue, but also a governance and cultural challenge for First Nations. ICAWG, an Indigenous-led advisory group with broad geographic, age, and gender representation—including a reserved seat for elders—provides guidance on climate adaptation, Indigenous participation, and resilience planning across BC communities.

- Ocean change directly affects food sovereignty, cultural continuity, marine-based economies, community safety, heritage protection, and youth futures.
- Observed impacts include shellfish vulnerability, changing salmon migrations, harmful algal blooms, kelp ecosystem stress, species shifts, and increased storm surge and erosion, with elders' knowledge highlighting long-term trends.
- Coastal resilience equates to cultural survival; meaningful action must integrate Indigenous governance systems, protect both ecosystems and heritage, and go beyond infrastructure-focused approaches.
- First Nations leadership and engagement are essential to ensure strategies are effective, culturally grounded, and sustainable.



BC COASTAL MARINE STRATEGY
Charlie Short

Charlie Short (Executive Director of the Coastal Marine Stewardship Branch, Ministry of Water Land and Resource Stewardship, Province of BC) provided an overview of British Columbia's Coastal Marine Strategy, outlining the province's first comprehensive framework for managing coastal communities and ecosystems, from current practices into the long-term future.

- 2021–2024: Strategy development began in 2021 with engagement to confirm intentions, followed by a "What We Heard" report, a draft strategy, and the final report in 2024.
- The report was developed to provide a shared framework that aligns decision-making across governments, First Nations, and stakeholders on coastal marine managementConsidered multiple perspectives on coastal priorities, focusing on tidal waters across the coast, balancing offshore and inland interests
- Long-term, generational planning spanning 20–30 years, structured around three themes: healthy coasts, climate resilience, and thriving, informed governance, with nine overarching goals.

Near-term Implementation (2025–2028): Identified eight priority opportunities in partnership with First Nations, including:

- Scaling up coastal habitat monitoring to maintain biodiversity.
- Improving salmon survival through habitat support and fisheries management strategies.
- Preventing marine pollution, including reforming marine tenure licenses and outreach on marine debris.
- Increasing understanding of climate change impacts.
- Supporting First Nations-led climate action and restoration of traditional seafood systems.
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- Supporting commercial harvesters.
- Modernizing policies and procedures, evaluating opportunities for phased reforms.

THE PATH FORWARD

Community Roundtable

The closing session of the forum focused on reviewing accomplishments, identifying gaps, and discussing funding strategies for continued ocean acidification and hypoxia (OAH) work in the province. Participants reflected on successes, challenges, and lessons learned:

Join the OA Community of Practice here!

- There was broad recognition that working with a wider range of groups—including citizen scientists, harvesters, and non-traditional partners—could strengthen outcomes, though funding restrictions limited some opportunities.
- The OA Community of Practice was highlighted as a key starting point and mechanism for continued conversations and potential matchmaking of those with similar interests.
- Competitive project bids with high cost-sharing were seen as a barrier for smaller industry groups. Approximately 35% of participants favored collaborative, co-designed projects built from the outset with multiple partners. Improved "matchmaking" between data users and monitoring platforms was identified as a gap, suggesting a potential role for CIOOS and similar organizations to provide guidance on sensor selection and data standards.
- Participants emphasized the need to communicate findings to diverse audiences, from policymakers and educators to youth. Integrating OAH resources into grade 12 curricula and leveraging accessible multimedia (e.g., explanatory videos) were suggested as ways to broaden impact.
- Discussions included revisiting the 62 actions of the BC OAH Action Plan, considering strengths, weaknesses, and potential additions, and exploring alignment with the Coastal Marine Strategy. A 5-year addendum (2028/29) was proposed to capture lessons learned, ongoing priorities, and successes. Dr. Wiley Evans suggested the story of the plan could also be published in peer-reviewed outlets.

After what you've heard today, what should be our top priority in terms of next steps?

BC OAH ACTION FORUM
Appendix

BC OAH ACTION PLAN

SCIENTIFIC ASSESSMENT

FORUM RECORDING

FORUM WEBPAGE

OA COMMUNITY OF PRACTICE

OARS CASE STUDY

BC OAH ACTION FORUM
Appendix

OAH IN BC ANIMATED VIDEO

CRBS DOCUMENTARY

CRBS PROGRAM WEBSITE

CIOOS DATA CATALOGUE

CIOOS OAH APP BETA VERSION

*

**Note this app is still under development and is not yet mobile friendly*

BC OAH Action Forum

Event Agenda MORNING SESSION

8:00 - 8:10 am	**Welcome** Kristina Barclay, Tula Foundation; Canadian Ocean Acidification Community of Practice
8:10 - 8:25 am	**The BC OAH Action Plan & Climate Ready BC Seafood Program, Goals of the Forum** Myron Roth, Director, Climate Risk Management, Province of BC; Co-Chair, BC OAH Action Plan
8:25 - 8:40 am	**The BC OAH Action Plan and National and International OA Policy Action** Jessie Turner, International Alliance to Combat Ocean Acidification
8:40 - 8:55 am	**Video Feature: The Climate Ready BC Seafood Program (CRBS) - Strengthening BC's Coastal Future**
8:55 - 9:50 am	**The CRBS Recipient Lightning Talks and Q+A Panel** Kohen Bauer - Ocean Networks Canada Alaina Pyde - T.Buck Suzuki Environmental Foundation Russell Markel - Wilderness Tourism Association of British Columbia Georgia Hall & Christopher Harley - University of British Columbia Hanna Meyer & Ryan Teremy- Maaqutusiis Hahoulthee Stewardship Society (MHSS) Logan Zeinert - North Island College
9:50 - 10:15 am	Coffee Break
10:15 - 10:35 am	**OAH and Indigenous Food Sovereignty** Chief Harley Chappell, Semiahmoo First Nation
10:35 - 11:25 am	**The CRBS Recipient Lightning Talks and Q+A Panel** Jacklyn Barrs - Salish Sea Indigenous Guardians Association (SSIGA) and Semiahmoo First Nation Emily Fulton - Redd Fish Restoration Society Tim Green - Vancouver Island University Angela Fortune & Shannon Mendt - Nova Harvest Ltd Edward Gregr & Chris Neufeld- SciTech Environmental Consulting
11:45 - 12:45 pm	Lunch

BC OAH Action Forum

Event Agenda AFTERNOON SESSION

12:45 - 1:35 pm	**Workshop: Integrating OAH data in the Canadian Integrated Ocean Observing System (CIOOS)** Jordan Watson, Director, CIOOS Yayla Sezginer, Data Management Specialist, CIOOS Taimaz Bahadory, Application Developer, CIOOS
1:30 - 1:50 pm	Break
1:50 - 2:05 pm	**Trends in dissolved oxygen across the BC shelf** Charles Hannah, Research Scientist at the Institute of Ocean Sciences, Fisheries and Oceans Canada
2:05 - 2:20 pm	**Ocean acidification in Canada: the current state of knowledge and pathways for action** Kristina Barclay, Tula Foundation, Canadian Ocean Acidification Community of Practice
2:20 - 3:10 pm	**Round Table: Development of OAH Indicators for BC**
3:10 - 3:25 pm	Break
3:25 - 3:40 pm	**British Columbia's Coastal Marine Strategy** Charlie Short, Executive Director, Coastal Marine Stewardship Branch, Ministry of Water, Land and Resource Stewardship, Province of BC
3:40 - 4:00 pm	**First Nation's perspective on ocean-related climate change and impacts to coastal resilience** Trent Moraes, Deputy Chief, Skidegate Band Council, Indigenous Coastal Climate Coalition, and the BC Disaster and Climate Risk and Resilience Assessment First Nations Committee
4:00 - 4:50 pm	**Round Table: The Way Forward - Priorities, Actions, and Next Steps for the BC OAH Action Plan**
4:50 - 5:00 pm	**Closing**

BC OAH Action Forum

ABSTRACTS

British Columbia Ocean Acidification and Hypoxia Action Forum

Vancouver Island Conference Center, Nanaimo, British Columbia
March 3rd, 2026

Guest Speakers

Myron Roth

Director, Climate Risk Management, Province of British Columbia
Co-Chair, BC OAH Action Plan

Myron Roth is the Director of Climate Risk Management with the BC Ministry of Energy and Climate Solutions, where he leads a team of climate adaptation and resilience specialists. A marine biologist and professional agrologist, he is a strong advocate for sustainable seafood with over 30 years of seafood development experience across both Canadian coasts and international settings. In 2017, he launched OASISS (Ocean Acidification Shellfish Industry Seed Supply) a pioneering ocean change monitoring and adaptation initiative, and in 2021, the BC Ocean Acidification & Hypoxia Action Plan, which he co-chaired. He holds a BSc in Zoology from UBC and a PhD from the Institute of Aquaculture, University of Stirling, Scotland.

Abstract: The 2023 BC Ocean Acidification and Hypoxia (OAH) Action Plan was developed in response to BC's Preliminary Strategic Climate Risk Assessment (2019), which identified ocean acidification as a significant climate-related threat to the province. Guided by an Advisory Committee, the planning process convened four workshops with 172 participants representing 88 organizations. The Action Plan outlines 5 goals, 15 objectives, and 62 actions aimed at improving understanding, raising awareness, and building resilience to OAH in BC's coastal waters.

Released concurrently, the Climate Ready BC Seafood Program provided $2 million to support priority activities aligned with the Action Plan across four program areas. Eleven proposals from industry associations, research institutions, Indigenous communities and organizations, and non-profits were selected for funding, collectively advancing all five Action Plan goals.

The goal of the Forum is to bring together BC's OAH community to reflect on the outcomes of the Climate Ready BC Seafood Program and consider related initiatives, including OA observing and data management, the state of OA knowledge in Canada, the Coastal Marine Strategy, and First Nations perspectives on ocean-related climate change, and – in plenary – identify actions, priorities, and next steps to advance the BC OAH Action Plan.

Guest Speakers

Jessie Turner

Executive Director, International Alliance to Combat Ocean Acidification

Jessie Turner is the Executive Director of the International Alliance to Combat Ocean Acidification (OA Alliance). A voluntary initiative of national and subnational governments, the OA Alliance works to raise ambition for climate action and transform the global response to climate-ocean change.As Executive Director, Jessie sets the strategic direction of the OA Alliance and develops and carries out annual programming, including contributions to international convenings. She also establishes partnerships across a variety of disciplines and coalitions, deploys communications strategies across multiple scales, and supports members in the development of practicable ocean acidification adaptation and resilience strategies.Jessie served as lead facilitator to the Pacific Coast Collaborative (PCC)'s Ocean Acidification and Hypoxia Working Group between 2014 and 2023. The PCC is a collaboration between the U.S. states of California, Oregon, Washington, and the Canadian Province of British Columbia working together on climate issues that impact the North American West Coast region.

Abstract: BC's OAH Action Plan is the first Provincial OA Action Plan in the world, setting an example for subnational and national governments around the word. As envisioned by the OA Alliance, OA Action Plans help governments: take inventory; prioritize needs and make recommendations; and align policies and investments in the face of climate-ocean change. This is especially important for achieving climate resilient fisheries and aquaculture, climate smart conservation, coastal resilience and habitat restoration, effective upgrades of infrastructure, and evaluation of marine carbon dioxide removal strategies. Hear more about the leadership shown by British Colombia and the impact the OAH Action Plan has had in Canada and across the world.

Harley Chappell

Chief of the Semiahmoo First Nation

Harley Chappell is the chief of the Semiahmoo people, located in south Surrey B.C. He serves as chair of the shared waters alliance, who's sole objective is to revitalize traditional shellfish harvest in Semiahmoo bay.

Guest Speakers

Jordan Watson

Director, Canadian Integrated Ocean Observing System (CIOOS)

Dr. Jordan Watson leads the Pacific Region of CIOOS, bringing a background that spans oceanography, fisheries modeling, and scientific leadership across the Pacific Ocean.

Taimaz Bahadory

Application Developer, Canadian Integrated Ocean Observing System (CIOOS)

Dr. Taimaz Bahadory is an oceanographer and application developer with specialties in ocean gliders, data visualisation, and data management.

Yayla Sezginer

Data Management Specialist, Canadian Integrated Ocean Observing System (CIOOS)

Dr. Yayla Sezginer is a biological oceanographer with a research background the biological carbon pump and high resolution in-situ data acquisition.

Abstract: The CIOOS Pacific team will give an overview of the Canadian Integrated Ocean Observing System and how its efforts to make ocean data more accessible have made it a valuable component of the BC OAH Action Plan. In addition to serving as a hub for Canada's ocean data, CIOOS Pacific is working with regional partners to develop an interactive data application / visualisation tool that provides users with access to the latest information about the regions changing oceanographic data, including characteristics relevant to ocean acidification and hypoxia.

Guest Speakers

Charles Hannah

Research Scientist at the Institute of Ocean Sciences, Fisheries and Ocean Canada

Dr. Charles Hannah is a research scientist in physical oceanography with DFO at the Institute of Ocean Sciences in Sidney British Columbia. His research usually revolves around the questions, 'Where is the water going, where does it come from, and what happened on the way?' Dr. Hannah maintains an array of subsurface moorings that extends from the west coast of Vancouver Island to Dixon Entrance. These measure temperature, salinity, and oxygen at different depths and ocean currents through the water column. He has been drawn into the field of oxygen and hypoxia because of the need to explain the recent extreme oxygen events (hypoxia) on the B.C. continental shelf.

Abstract: This talk is about declining oxygen concentrations in the subsurface waters of British Columbia. The first part of the talk will report on the observed trends in subsurface oxygen at 13 locations in British Columbia waters. The second part will tell a story about oxygen concentrations in the north Pacific and where the subsurface oxygen on the BC self comes from.

Guest Speakers

Kristina Barclay

Tula Foundation; Canadian Ocean Acidification Community of Practice

Dr. Kristina Barclay is a Co-Lead of the Canadian Ocean Acidification Community of Practice (OA CoP), facilitating OA initiatives and knowledge mobilization across Canada since 2020. She represents Canada on the Steering Committee for the Global Ocean Acidification Observing Network's North American Hub, as well as the UN Decade Ocean Acidification Research for Sustainability Programme's Framework for Action Working Group. Kristina has conducted research in the Pacific northwest for over 15 years, with a background in ocean acidification impacts to mollusc shells and human impacts on crab abundances using fossil, archaeological, historical, and modern data. She has both an M.Sc. and Ph.D. in Palaeontology from the University of Alberta.

Abstract: With an extensive coastline and three distinct, but connected ocean basins situated at high latitudes, Canada is highly vulnerable to ocean acidification. The Canadian Ocean Acidification Community of Practice recently led a synthesis paper on the current state of ocean acidification knowledge across Canada, including scientific knowledge and assets (monitoring, modelling, and biological studies), as well as socioeconomic and policy considerations and examples of ocean acidification actions in Canada. We then provide nine major recommendations for ocean acidification actions needed in Canada, as well as pathways for enhancing capacity and inclusion of ocean acidification knowledge for decision-making and climate mitigation and adaptation planning.

Guest Speakers

Charlie Short

Executive Director, Coastal Marine Stewardship Branch, Ministry of Water Land and Resource Stewardship, Province of BC

Charlie Short is currently an Executive Director for the Coastal Marine Stewardship and Fisheries Branch in the Ministry of Water, Land and Resource Stewardship. The Branch focuses on marine policy, governance, marine ecosystem-based management and monitoring, marine fisheries, aquaculture and wild salmon and marine spatial planning and marine protected area network design and implementation. In addition to his role with the provincial government, Charlie is a sessional instructor in the Department of Geography at the University of Victoria and a visiting instructor for the Master's Program in Coastal and Marine Management at the University Centre of the Westfjords in Iceland. Charlie has a MSc in Marine Ecology and BSc in Geography from the University of Victoria.

Abstract: This presentation highlights BC's Coastal Marine Strategy, co-developed with many First Nations to guide long-term stewardship of coastal ecosystems and ocean-based economies. It summarizes the Strategy's collaborative development, broad engagement, and key early implementation priorities for 2025–2028. The presentation will also highlight some projects taking shape across the coast that are strengthening climate resilience in coastal ecosystems and communities.

Trent Moraes

Deputy Chief, Skidegate Band Council, Indigenous Coastal Climate Coalition, and the BC Disaster and Climate Risk and Resilience Assessment First Nations Committee

Trent is a Haida from Skidegate, Haida Gwaii. He is an elected member of the Skidegate Band Councilor and is the current Deputy Chief Councilor. Trent is the Co-Chair of the Indigenous Climate Adaptation Working group. He is also a member of the Indigenous Coastal Climate Coalition, and the BC Disaster and Climate Risk and Resilience Assessment First Nations Committee, in additional to several other groups, mostly dealing with energy and electricity.

Climate Ready B.C. Seafood Program (CRBS) Recipients

Baynes Sound Mooring Enhancement

Ocean Networks Canada, CRBS Project

Presenter: Kohen Bauer

Ocean Networks Canada (ONC) operates a long-term ocean observing station in Baynes Sound—one of British Columbia's most productive shellfish regions. Supported by the ClimateReady BC Seafood Program, the project upgraded this observatory from a set of fixed-depth sensors to a profiling mooring that measures key ocean acidification and hypoxia (OAH) indicators (pH, pCO2, dissolved oxygen, temperature, salinity) throughout the full water column. This enhancement overcomes severe biofouling and maintenance challenges, improves data reliability, and expands spatial resolution, enabling a more complete understanding of local biogeochemical variability and its drivers. Continuous, high-quality, fine-scale OAH observations are important for the detection of corrosive and/or low-oxygen events and will benefit shellfish growers, researchers, and policymakers by improving data reliability and continuity. We share key lessons learned, including those related to sensor performance, technological readiness, and maintenance logistics, to help guide future observatory designs and strengthen B.C.'s overall capacity for sustained, high-resolution OAH observing. By being more intentional in how this observatory is designed, operated, and integrated into regional monitoring efforts, we aim to realize its full potential as a sentinel for coastal change in Baynes Sound, one that provides high-quality data to inform adaptation, resilience, and stewardship across the region.

Harvesting pCO2: Bridging the gap between fish harvesters and ocean science for a sustainable BC coast

T Buck Suzuki Environmental Foundation, CRBS Project

Presenter: Alaina Pyde

Our team at the T. Buck Suzuki Environmental Foundation is leading a citizen science ocean acidification and hypoxia (OAH) data collection project in partnership with the United Fishermen & Allied Workers Union (UFAWU), Hakai Institute, and Burke Analytics. By leveraging the on-the-water knowledge and operational expertise of commercial fishers, this project expands coastal monitoring capacity while strengthening engagement between science, industry, and conservation organizations. Using FOAM (Field Ocean Acidification Monitoring) kits deployed in December 2024, we have spent the past year collecting high-quality surface data and refining deeper-water sampling protocols. To date, the project has generated over 80 discrete samples alongside continuous environmental measurements, providing an increasingly robust picture of local oceanographic conditions and their seasonal fluctuations.Findings demonstrate that time-series sampling yields the strongest datasets. Fisheries that naturally align with repeat sampling—such as trap-based crab fisheries—are therefore critical partners. We recommend continued sampling to strengthen long-term datasets and increased capacity for data management and interpretation. This project demonstrates the value of cross-sector collaboration, and we seek to continue to build on these partnerships in future phases of the work.

Oceanographic monitoring across British Columbia by the Small Ship Tour Operators Association (SSTOA)

Wilderness Tourism Association of BC, CRBS Project

Presenter: Russel Markel, Outer Shores Expeditions

Climate change impacts are a major concern to coastal communities that depend on coasts and oceans for their livelihoods, food security, and cultural identities. Observations of environmental conditions in nearshore areas, including temperature, oxygen, pH, and salinity, are needed to improve understanding and predictions of how changing ocean chemistry impacts coastal ecosystems and people. The Wilderness Tourism Association's Small-Ship Tour Operators (SSTOA), in collaboration with oceanographers at Oregon State University and the Sexton Corporation, have embarked on a large-scale, industry-led, citizen science project that harnesses the capacity and broad geographic range of the marine tourism industry. The SSTOA's fleet of 11 expedition tourism vessels deployed oceanographic sensors that measure depth, temperature, salinity, and dissolved oxygen profiles in nearshore coastal areas. Working through some technical challenges, six vessels deployed sensors over 100 times between June-October 2025. SSTOA has developed data protocol agreements with several First Nations and have reached more than 500 guests. Project partners are now updating the sensors for improved application and streamlining data management, analysis, and reporting. Building on this pilot, the SSTOA will continue to contribute data on spatial and temporal variability in environmental conditions to inform stewardship and conservation of coastal areas.

Identifying thresholds in B.C. shellfish vulnerability to ocean acidification

University of British Columbia, CRBS Project

Presenter: Christopher Harley & Georgia Hall

The Harley and Moore Labs at the University of British Columbia, in partnership with the Hakai Institute, are establishing thresholds of vulnerability to ocean acidification (OA) in BC shellfish (blue mussels, Pacific oysters, and Dungeness crabs). While crab data are still under review, experiments with bivalves found that the effects of OA are species specific, and depend on the variable of interest. Pacific oyster growth declined linearly with increasing OA, but blue mussel growth received minor benefits from mild OA exposure before declining. Shell strength showed a threshold of vulnerability for both oysters and mussels, although the mussel threshold occurred at a lower pH, indicating more resilience to OA for this species. Both species showed similar thresholds for shell erosion, affecting overall aesthetics and marketability. Neither oysters nor mussels showed an increase in vulnerability to heatwaves after exposure to OA. Additionally, mussels became more susceptible to predation by mottled sea stars under higher OA conditions, although this relationship was complex. These results indicate that shellfish growers may need to adjust management techniques as the climate changes to accommodate shellfish that grow slower and have weaker, less attractive shells, while protecting against a potential increase in susceptibility to predation.

Hypoxia Monitoring in Ahousaht Territory

Maaqutusiis Hahoulthee Stewardship Society (MHSS), CRBS Project

Presenter: Hanna Meyer and Ryan Teremy

This presentation summarizes a Nation-led hypoxia monitoring program conducted by the Maaqutusiis Hahoulthee Stewardship Society (MHSS) of the Ahousaht Nation in Clayoquot Sound. The project involves year-round, full water column monitoring at 16 fjord-type inlet sites within Ahousaht territory to assess how large-scale atmospheric and oceanographic forcing influences dissolved oxygen availability. Monthly measurements of conductivity, temperature, depth, and dissolved oxygen are collected using a multiparameter water probe, providing a high-resolution dataset that supports both local stewardship and regional scientific research. The data collected by MHSS contributes to a hydrodynamic–biogeochemical model managed by Fisheries and Oceans Canada and augmented by other Nations and community organizations. Results indicate increasing marine hypoxia and elevated sea surface temperatures, leading to compressed habitat for pelagic fish and increased physiological stress for shellfish and crustaceans. These changes pose growing risks to marine ecosystems and community access to culturally important seafood. Long-term, the monthly, year round data provided through Nation-led monitoring is essential for detecting spatial and temporal trends, strengthening Ha'wiih decision-making, and informing adaptive fisheries management. The integration of community-owned data and predictive modeling supports proactive planning and long-term food security under future ocean conditions.

Advancing Ocean Monitoring Tools

North Island College, CRBS Project

Presenter: Logan Zeinert

North Island College's Climate Ready BC Seafood project aimed to deploy a real-time ocean acidification (OA) sensor package that combined established sensors with new lower-cost sensors. We aimed to assess under what conditions low-cost sensors can provide adequate monitoring of OA to help industries and communities adapt to OA. The project team partnered with Semiahmoo First Nation, the Salish Sea Indigenous Guardians Association (SSIGA), World Wildlife Fund (WWF) and Arocha to collect water quality data inside and outside an eelgrass bed in Semiahmoo Bay (SE Boundary Bay). These locations are important sites for juvenile fish and invertebrates, especially as the adults of these species are often important for First Nations and fisheries. This site has several different characteristics and has limited shore-power. This challenged the requirements of the sensor package and we adapted our deployment to enable the data collection in these environments. Our deployment was challenged by several setbacks in sensor calibration and part availability, thus the deployment was delayed. However, several NIC students were able to be involved in the project, including the deployment, and all sensors from both deployment locations were retrieved after six months. Data was retrieved from all sensors, allowing comparison of water quality between the sites.

Assessing the role of eelgrass in Semiahmoo Bay in building resilience to ocean acidification and hypoxia

Salish Sea Indigenous Guardian Association (SSIGA) and Semiahmoo First Nation, CRBS Project

Presenter: Jacklyn Barrs

Traditional shellfish harvest has been prohibited in Semiahmoo Bay since the 1960s owing to concerns over water quality. Ocean acidification and hypoxia (OAH) present additional threats to shellfish populations in the bay, however, there is evidence to suggest that seagrass can improve water quality and may play a role in buffering OAH. In this project led by the Salish Sea Indigenous Guardians Association and Semiahmoo First Nation, Indigenous knowledge and western science approaches have been used to investigate the role that eelgrass might play in building resilience to OAH. Over two years, we have gathered baseline information on the health and extent of the eelgrass meadow in the bay, and assessed water quality and eelgrass meadow use as habitat for bivalves and fish. We also collaborated with North Island College and University of Calgary to install and test pH and pCO2 sensors in the bay and assess if the eelgrass has any role in localized mitigation of OAH. Project results will be used to guide management activities that address the main threats to shellfish populations, with the ultimate goal of revitalization of shellfish harvest in Semiahmoo Bay.

Increasing knowledge transfer, collaboration, and scientific understanding of nearshore marine health in Clayoquot and Northern Barkley Sounds

Redd Fish Restoration Society, CRBS Project

Presenter: Emily Fulton

This project was established to increase knowledge transfer, build new collaborative relationships, and invest in the continuation and expansion of nearshore habitat health and oceanographic monitoring in Northern Barkley and Clayoquot Sounds. We focused on using standardized methods for surveying, and prioritizing training and engagement opportunities for local First Nation Guardians and stakeholders. Partnering with 4 local nuučaanuł Nations, we monitored and mapped 28 important kelp areas, as well as 54 stations selected for oceanographic data collection. Data from both monitoring initiatives are currently being analyzed. Results will be presented in accessible formats to each Nation and community, and used to inform priorities for nearshore marine habitat restoration, conservation, and future co-benefitting research programs. This project has highlighted the need for further investment in long term monitoring programs that offer direct benefit to the Nation whose territory the work is being conducted, as well as more effort placed on creating accessible opportunities for science dissemination.

Genomic selection for oysters resilient to ocean acidification

Vancouver Island University, CRBS Project

Presenter: Timothy J. Green

Ocean acidification (OA), driven by upwelling and climate change, is negatively impacting marine calcifiers in British Columbia, Canada. OA interferes with calcification, causing increase mortality and reduced growth rate in shellfish such as the Pacific oyster. Variation for OA tolerance exists within the broodstock enhancement program at Vancouver Island University (VIU). By identifying the genetic mechanism that underpins OA tolerance, the B.C. shellfish grower's association (BCSGA) hopes to be able to implement genomic selection for OA tolerance in Pacific oysters to future-proof the shellfish farming industry against climate change. This project assessed the average growth rate of 475 oysters from 19 pair-mated families under experimental OA conditions using the Fisheries and Oceans Climate Change and Ocean Acidification Laboratory (FOCCOAL) at the Pacific Biological Station in Nanaimo. A genome-wide association study examining these 475 oysters led to the detection of a quantitative trait locus (QTL, or genetic mutation) on chromosome 6 of the Pacific oyster genome that was associated with a doubling in growth rate under experimental OA conditions. This knowledge has been used by the VIU broodstock enhancement program to undertake marker-assisted selection to identify Pacific oyster broodstock with increased growth rate under OA conditions during the 2025 hatchery season.

Ocean acidification monitoring to protect the local British Columbia shellfish growers' Pacific oyster seed supply

Nova Harvest, CRBS Project

Presenter: Angela Fortune and Shannon Mendt

Nova Harvest Ltd. is a BC-based shellfish hatchery focused on sustainable oyster seed production and building climate resilience in aquaculture. In partnership with the Bamfield Marine Sciences Centre (BMSC), the Hakai Institute, and the BC Shellfish Growers Association (BCSGA), we supported an ocean acidification (OA) monitoring project using a Burke-o-Lator (BoL) system. The goal was to advance science-based hatchery practices, enhance food security, and improve the adaptability of BC's shellfish industry to changing ocean conditions. The project aimed to increase OA monitoring capacity in Barkley Sound. By operating the BoL system at BMSC, the project delivered real-time seawater chemistry data to guide hatchery decision-making, support collaborative research, and safeguard the long-term sustainability of oyster seed production. To date, the project has achieved several key outcomes. Two years of continuous OA data have been collected in Barkley Sound, filling a critical monitoring gap. Nova Harvest uses this data daily to adjust hatchery practices in response to fluctuating ocean conditions. Shellfish larval experiments are capable of using both real-time and discrete water chemistry data. Collaboration between BMSC and Hakai researchers continues, and the BoL has been integrated into hands-on student training at BMSC.

Models, mesocosms, and field work to assess kelp mitigation to OAH impacts

SciTech Environmental Consulting, CRBS Project

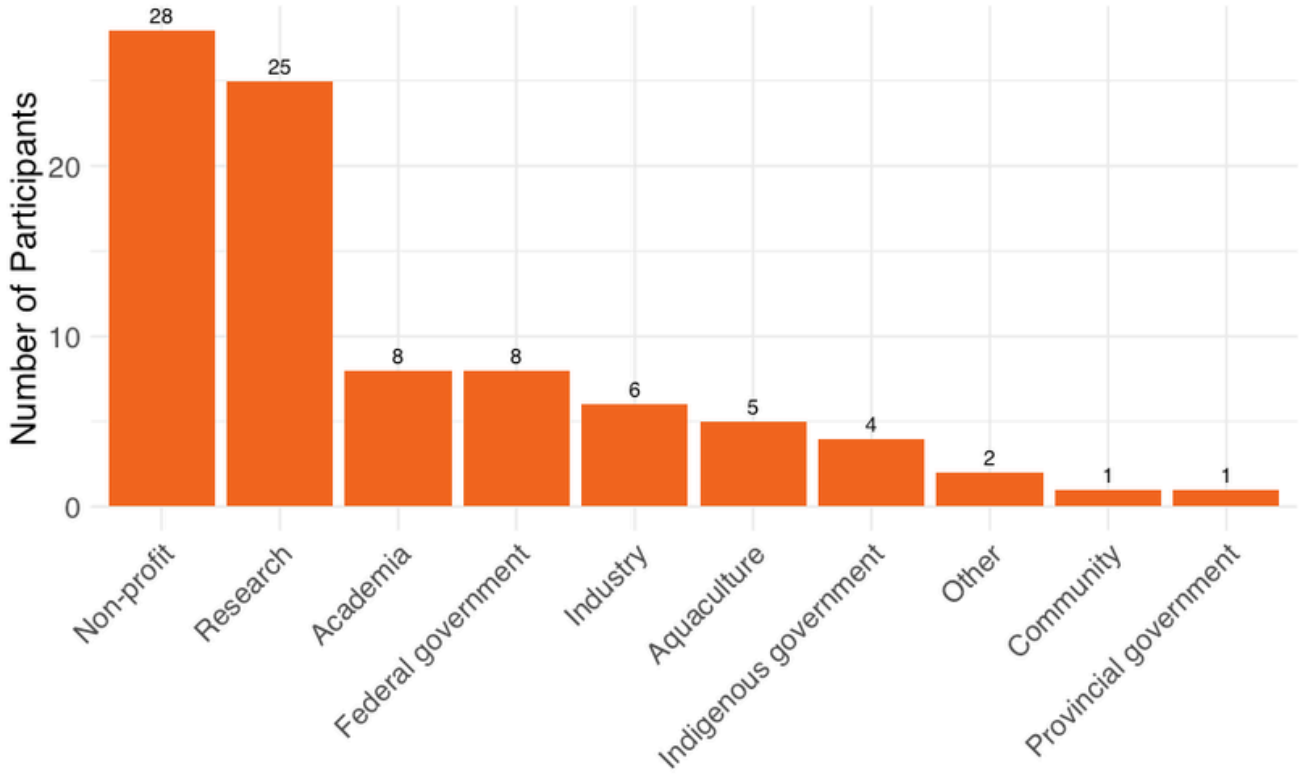
Presenter: Edward Gregr & Chris Neufeld

In partnership with a multidisciplinary team of marine experts and the Mamalilikulla First Nation Guardians, we characterised the ocean chemistry in the Broughton Archipelago and examined whether wild bull kelp forests (*Nereocystis luetkeana*) could create a 'halo effect' by locally increasing pH and dissolved oxygen. Our fieldwork produced over 200 discrete water samples and 145 days of near continuous ocean chemistry data from 2 moorings. Mooring data showed effects of semi-diurnal tidal effects, as well as daily effects of photosynthesis, along with evidence of freshwater input from Knight Inlet and episodic mixing attributable to local weather events. Results of the water sampling program will be presented, including a Salinity/Alkalinity curve for the region, the seasonal pattern of pH, and the differences in pH inside and outside kelp beds. To estimate the ecosystem-level effects of carbon drawdown by autotrophs, we developed a mechanistic model of *Nereocystis* growth and embedded it in a simple oceanographic box model. We compared our model outputs to water chemistry patterns observed at the moorings to evaluate model performance. We will show how our approach, using both observed and literature-based parameters, can predict the contribution of *Nereocystis* beds to local changes in water chemistry over the course of a growing season.

BC OAH Action Forum

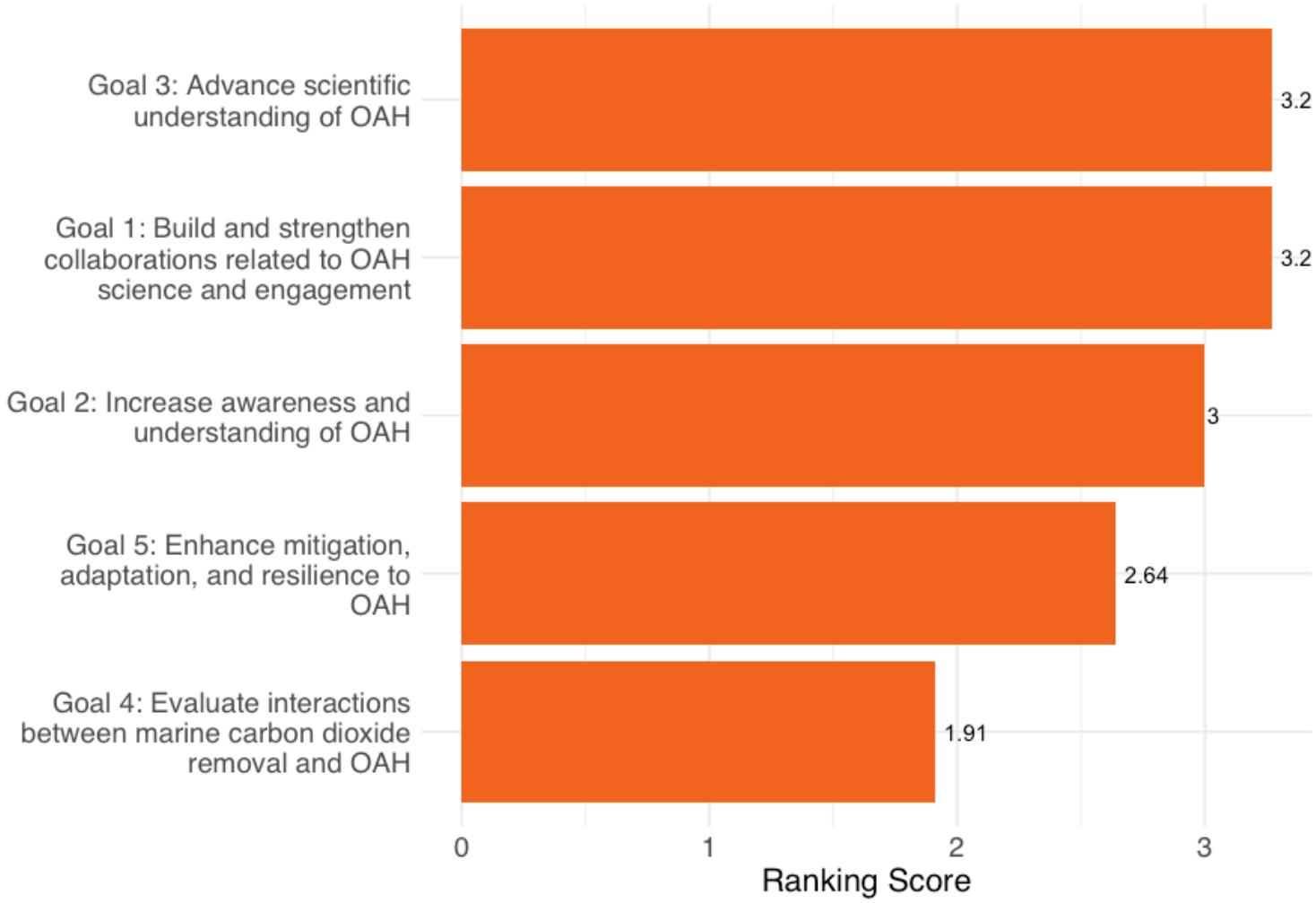
Slido Poll Results

What primary sector do you fit within?

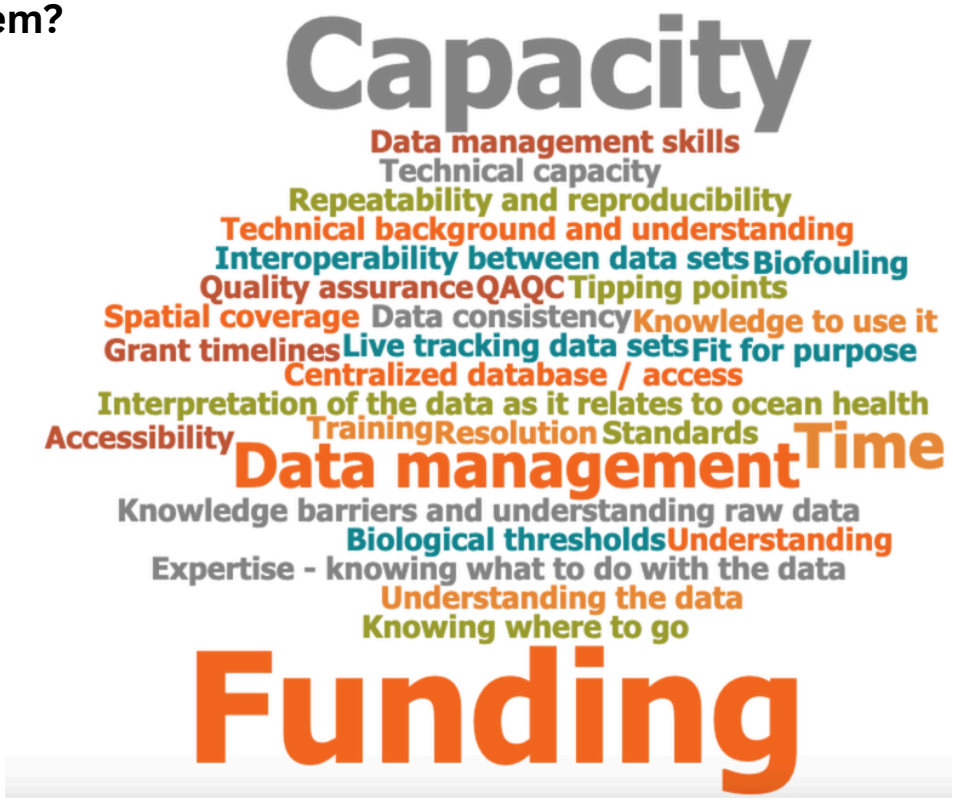


In three words or less, what is your main concern regarding OAH in BC?

Since the release of the BC OAH Action Plan, how much progress has been made? Please rank the Action Plan Goals where you believe the greatest advancements have been made - from most (#1) to least (#5).

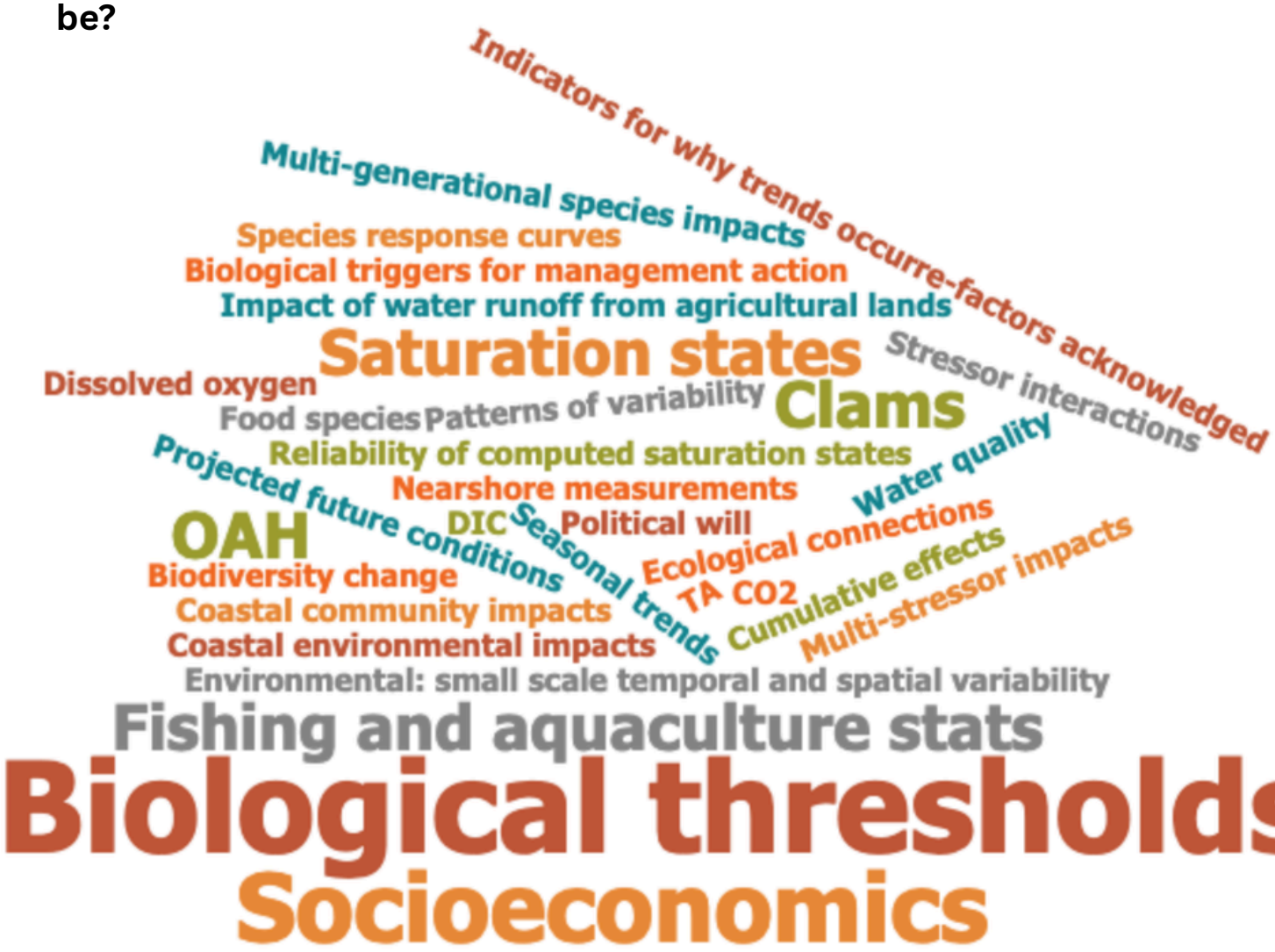


What are some obstacles to real-time monitoring in the present system?



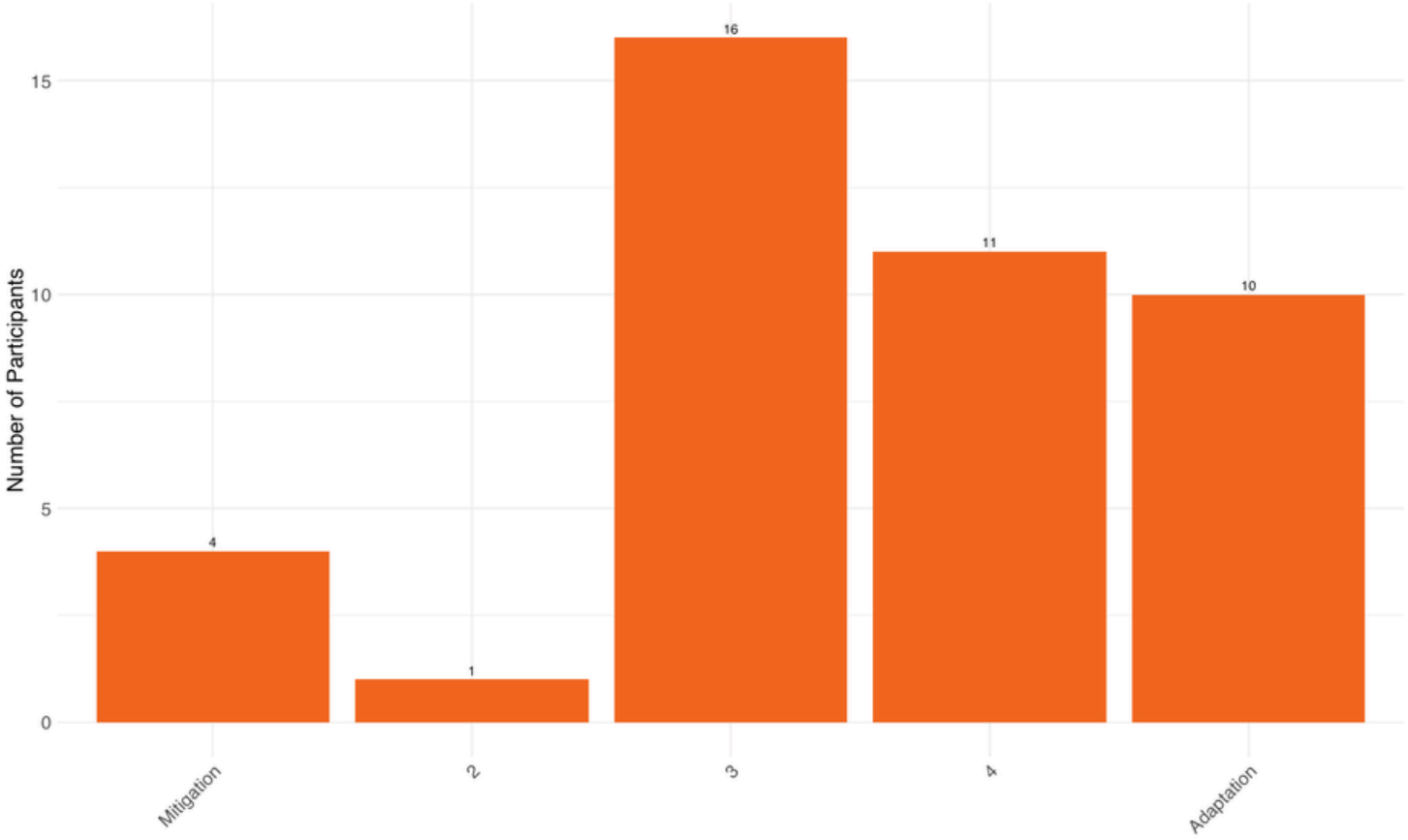
What are some use-case examples of how you may use the CIOOS application?

If you could have more data on any variable (environmental, biological, socioeconomic) to better address OAH, what would it be?

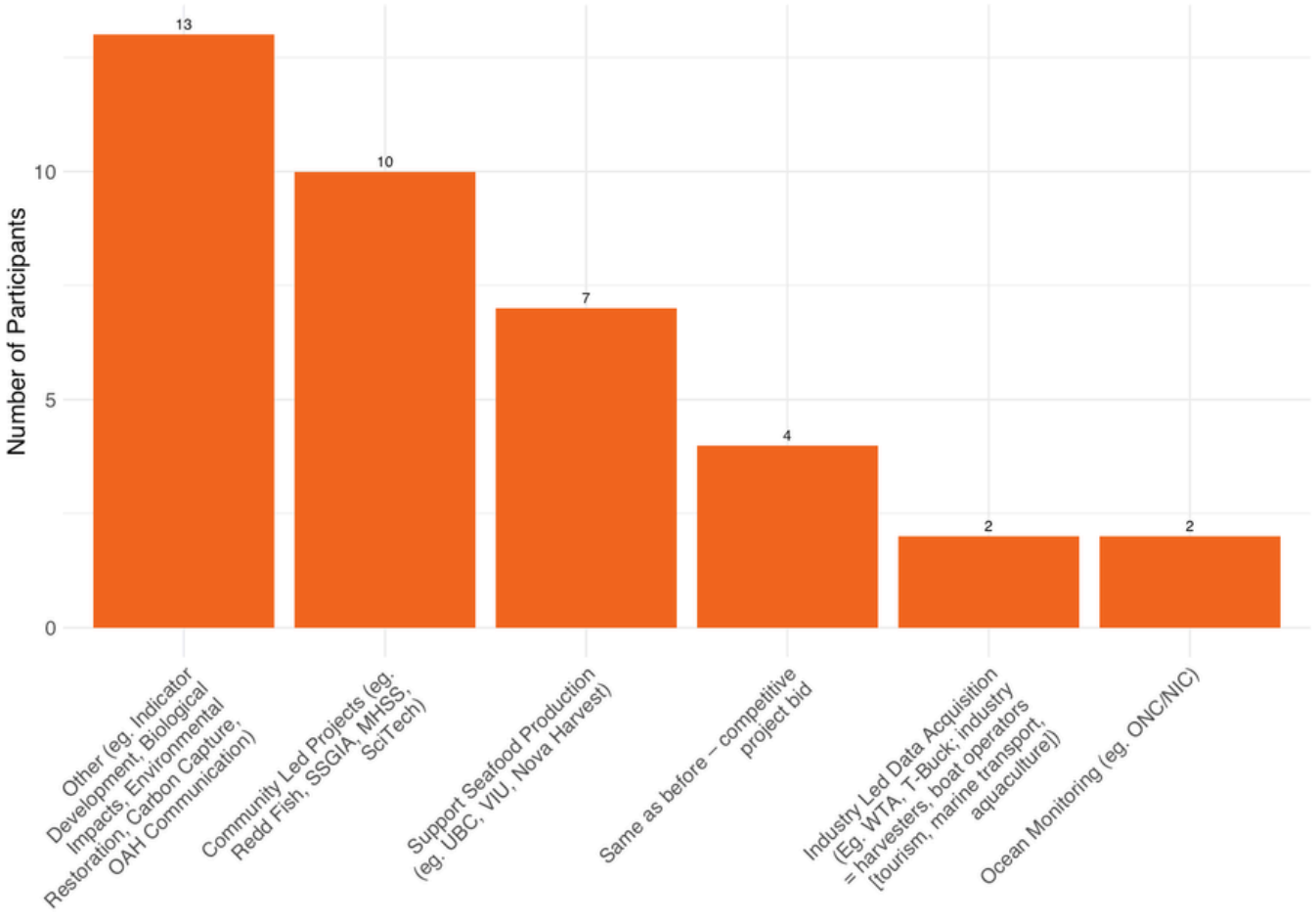


What biological and economic indicators should accompany environmental indicators to reflect real-world impacts on hatcheries, farms, and coastal food security?

If there was money to allocate towards the BC OAH Action Plan, would you allocate it more towards mitigation or adaptation? (1 = completely towards mitigation, 5 = completely towards adaptation)



If you had a renewed funding enveloppe, how would you allocate the CRBS 2.0 money?



After what you've heard today, what should be our top priority in terms of next steps?

What actions should we focus on to achieve this priority?

BC OAH Action Forum

Slido Poll Results

What is one action you are empowered to do moving forward?

What are the main two supports that you would need to achieve this action?