Environmental Flows Conference

EFN 2024: CO-CREATING FUTURES

PROCEEDINGS & OUTCOMES

March 13-15, 2024 | Syilx Territory | Kelowna, B.C.

CONFERENCE HOSTS:

Okanagan Basin WATER BOARD

CWRA Canadian Water Resources Association
ACRH Association Canadienne des Ressources Hydriques

The Environmental Flows Conference 2024 yielded valuable insights into the complexities of water management and led to several key recommendations:

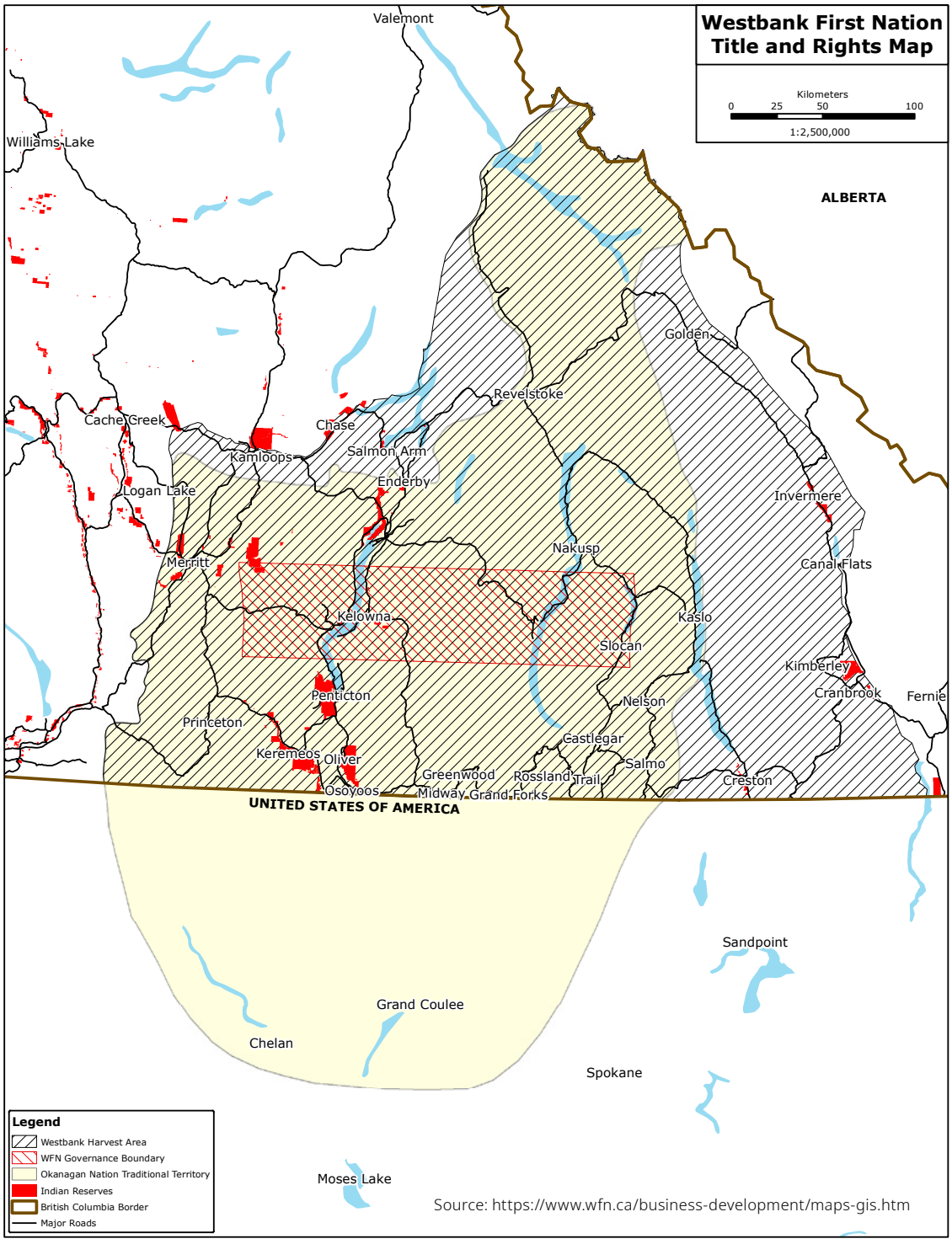
- **Embrace collaborative governance:** Cross-sector partnerships that integrate Traditional Knowledge with Western scientific approaches emerged as a cornerstone of sustainable water management.
- **Prioritize data sharing and management:** The need for real-time data collection, standardized data-sharing platforms, and a consensus on how to assess environmental flow needs were underscored.
- **Address policy and funding barriers:** Current funding models often hinder collaborative initiatives. Addressing political challenges and creating sustainable funding mechanisms emerged as crucial steps toward effective water management.

Conference Sponsors

Contents

Acknowledgement of Territory

The Environmental Flows Conference 2024 was held on the traditional, ancestral, and unceded tm̓xʷúlaʔxʷ (land) of the syilx (Okanagan) people who have resided here since time immemorial. The organizers and participants honor and respect this land and the siwl̓ɬk (water) which flows through the valley and connects us all.



Letter from the Conference Chair

It is with immense pleasure and a profound sense of responsibility that I share with you the proceedings and outcomes of the Environmental Flows Conference 2024, held from March 13 to 15 in Kelowna, British Columbia. This year's conference, named siwɬkʷ (Water) for All – Co-Creating Futures, marked a significant step forward in our collective journey toward sustainable water management in the Okanagan Basin and beyond.

As in 2018, this year's conference was hosted on the traditional and unceded territory of the Syilx People, whose deep connection to water and enduring legacy of stewardship continue to guide our work. Including the nsyilxcən word for water—siwɬkʷ—in our conference title serves as a constant reminder of the importance of Indigenous knowledge and the need for genuine collaboration in all our efforts.

Inspired by the Syilx governance framework, known as Enowkinwixw, the conference structure encouraged participants to consider water management challenges through the lenses of Tradition/Conventions, Innovation/Vision, Relationships/Connections, and Action/Goal Orientation. This approach, woven into every aspect of the conference, fostered a rich and multifaceted dialogue, ensuring that all voices were heard and respected.

Over 3 days, we welcomed more than 180 people representing a diverse cross-section of individuals and organizations invested in water stewardship. Our participants included representatives from First Nations communities, government agencies, academic institutions, environmental organizations, and interested parties from the industry. This diversity of perspectives was essential to the conference's goal of fostering collaboration and developing holistic solutions to our complex water challenges.

The conference program featured keynote presentations, panel discussions, interactive workshops, and facilitated dialogue sessions. Our speakers, experts in their respective fields, shared their knowledge, insights, and experience on various topics, including:

- Integrated watershed management
- Indigenous knowledge integration
- Climate adaptation
- Ecohydrology and technological innovation
- Social science and community engagement
- Policy and Governance
- Strategic foresight and scenario planning

The success of a conference of this scope would not be possible without the contributions of numerous individuals and organizations working tirelessly behind the scenes. I extend my heartfelt gratitude to the dedicated members of the conference organizing committee, whose efforts brought this vision to life. Your commitment to creating a welcoming, engaging, and impactful experience for all participants was evident in every aspect of the conference. I would also like to acknowledge the generous support of our sponsors, whose financial contributions made this event possible. Your belief in our shared mission of water stewardship is deeply appreciated.

As we move forward, we must maintain the momentum generated by the conference and translate the insights gained into tangible actions. To that end, the conference proceedings include recommendations to guide future efforts in water management.

Thank you once again for your commitment to the sustainable stewardship of our precious water. Together, we can co-create a future in which siwɬkʷ sustains all life for generations to come.

Sincerely,

Dr. Nelson Jatel, P.Ag.
Chair, Environmental Flows Conference 2024
Water Stewardship Director, Okanagan Basin Water Board

Introduction

The Environmental Flows Conference (EFC) 2024, named siwɬkʷ (Water) for All – Co-Creating Futures, took place on Syilx territory in Kelowna, British Columbia, building on the success of the Environmental Flow Needs Conference 2018. This report presents the proceedings and outcomes of the 2024 gathering, highlighting the discussions, presentations, and collaborative initiatives that took place on March 13 to 15, 2024. The conference aimed to address the issue of water management, particularly as we face rapid environmental changes that affect freshwater ecosystems.

CONFERENCE THEMES

EFC 2024 focused on seven areas to promote an understanding of environmental flow needs and sustainable water management:

- **Integrated watershed management:** Exploring ways to manage water resources at the watershed level, considering the interconnectedness of ecosystems, human activities, and water cycles.
- **Indigenous knowledge integration:** Recognizing the role of Indigenous knowledge systems and perspectives in water stewardship and finding ways to integrate these with scientific approaches for more sustainable and fair outcomes.
- **Climate adaptation:** Addressing the increasing challenges from climate change, including changing precipitation patterns, drought that's more frequent and severe, and the effect these changes have on freshwater ecosystems and water availability.
- **Ecohydrology and technological innovation:** Looking at the relationships between hydrological processes and ecological systems and exploring how technology can improve water monitoring, data analysis, and decision-making.
- **Social science and community engagement:** Recognizing the importance of understanding the social dimensions of water management, including community values, the perspectives of interested parties, and the need for inclusive decision-making processes.
- **Policy and governance:** Evaluating the existing policies and governance structures, identifying barriers to effective water management, and exploring policy changes and collaborative approaches to address challenges now and in the future.
- **Strategic foresight and scenario planning:** Using foresight methods to anticipate future trends and uncertainties, think about potential scenarios, and create proactive strategies for managing water resources in a rapidly changing world.

Conference Objectives and Format

EFC 2024 was a collaborative effort between the Okanagan Basin Water Board and the Canadian Water Resources Association. Building on the foundation from the conference in 2018, the 2024 conference had the following objectives:

1. ENHANCE STRATEGIC FORESIGHT IN WATER MANAGEMENT

- Introduce and apply strategic foresight methods to explore current trends and future scenarios related to environmental flows.
- Empower participants with the tools and knowledge necessary to navigate uncertainties and plan for diverse and possible future scenarios in water management.

2. FOSTER COLLABORATIVE GOVERNANCE

- Strengthen relationships across sectors by promoting collaborative governance models that include all interested parties, particularly Indigenous communities.
- Create opportunities for participants to engage in meaningful dialogue and build partnerships, aimed at improving water management practices across regions and sectors.

3. INTEGRATE INDIGENOUS KNOWLEDGE AND PERSPECTIVES

- Ensure that Indigenous knowledge and perspectives are central to all discussions and decision-making processes.
- Highlight the role of Indigenous governance and stewardship in maintaining healthy aquatic ecosystems and explore how these practices can improve current water management strategies.

4. ADDRESS BARRIERS TO INNOVATION AND IMPLEMENTATION

- Identify and address barriers that make it difficult to use innovative water management practices. These barriers include funding, political will, and cross-sector communication.
- Develop recommendations to overcome these barriers and make it easier to use best practices in environmental flow needs assessment and water resource management.

5. PROMOTE DATA SHARING AND TECHNOLOGICAL INNOVATION

- Encourage the use of real-time data collection, sharing, and management as a tool for informed and adaptive water management.
- Explore innovative technologies and platforms that can enhance data collection, analysis, and dissemination, enabling more effective decision-making and collaboration among all interested parties.

The conference format was carefully designed to meet these objectives, incorporating:

- Expert presentations: Presentations by leading experts in their respective fields provided insight into the latest research, innovative approaches, and successful case studies related to environmental flows.
- Interactive discussions: Facilitated discussions provided space for open dialogue, encouraging participants to share perspectives, challenge assumptions, and collectively explore solutions to water management challenges.
- Collaborative exercises: Interactive exercises, including strategic foresight activities using trend cards, encouraged participants to think critically about future scenarios, develop solutions, and collaboratively think of strategies for sustainable water management.

Conference Highlights

DAY 1: LAYING THE FOUNDATION

Day one began with an opening ceremony that emphasized the importance of Indigenous perspectives in water management, featuring a traditional Syilx Nation welcome and remarks from Dr. Nelson Jatel, Conference Chair and Water Stewardship Director at the Okanagan Basin Water Board. Keynote presentations stressed the urgent need for sustainable water management practices, particularly in the face of a changing climate. Grand Chief Stewart Phillip delivered a compelling address on the growing climate crisis, urging for visionary leadership in tackling the challenges ahead. Jennifer Davis, representing the BC Ministry of Water, Land and Resource Stewardship, discussed the impact of drought on aquatic ecosystems, while Blair Ireland talked about the importance of integrating Traditional Knowledge with Western scientific research in water management practices. A highlight of day one was the introduction of the strategic foresight process by Kathy Porter and Rebecca Black. The day finished with a networking reception, offering attendees the opportunity to connect with peers and exchange insights.

OPENING CEREMONY

Dr. Jatel officially opened the conference by welcoming attendees and expressing gratitude for their presence. Recognizing the significance of the gathering's location, Dr. Jatel acknowledged the conference's presence on the ancestral and unceded territory of the Syilx People, emphasizing the respect and responsibility associated with meeting on their land. He introduced the conference theme, siwɬkʷ (Water) for All – Co-Creating Futures. He talked about the importance of integrating Traditional Knowledge and Western science to address water management challenges in the Okanagan Basin.

Dr. Jatel then recognized and introduced distinguished guests in attendance, including:

- Grand Chief Stewart Phillip, president of the Union of British Columbia Indian Chiefs
- Councillor Jordan Coble, representing the Westbank First Nation

He also acknowledged the members of the organizing committee and the invaluable contributions of the volunteers, recognizing their essential role in making the conference possible.

After Dr. Jatel's remarks, Dawn Russell, a respected member of the Penticton Indian Band, led a traditional welcome ceremony, grounding the event in the rich cultural heritage of the Syilx People. She presented each participant with two symbolic items:

- **A can of salmon:** This represented the return of salmon to the Okanagan, signifying the positive outcomes that are possible through dedicated conservation efforts and collaborative stewardship.
- **A vial of water:** This served as a powerful reminder of the sacredness of water and its vital role in all of life, emphasizing our responsibility to protect and manage this precious resource wisely.

Russell explained the significance of these gifts: The can of salmon is a symbol blessed by time and history, and the vial of water is a poignant reminder of water's critical role in sustaining life and the ecosystems. This ceremony effectively grounded the participants in the values of stewardship and sustainability, setting a reverent and purposeful tone for the conference.

KEYNOTE PRESENTATIONS

Grand Chief Stewart Phillip: The Escalating Climate Crisis

After the welcome ceremony, Grand Chief Stewart Phillip delivered a powerful keynote speech, focusing on the growing climate crisis and its implications on water resources. He passionately recounted the environmental transformations he observed in the Okanagan region over his lifetime, underscoring the pressing need for strong and visionary leadership and collective and decisive action. Grand Chief Phillip stressed the importance of recognizing and integrating Traditional Knowledge into water management practices, emphasizing that traditional ecological knowledge offers invaluable insights into sustainable stewardship. He called for a unified approach to effectively address the climate crisis, urging all interested parties to work together in creating strategies for resilient and sustainable water management.

Jennifer Davis: Drought and Aquatic Ecosystems

Jennifer Davis, representing the BC Ministry of Water, Land and Resource Stewardship, presented on the impacts of drought on aquatic ecosystems. She provided the following in-depth analysis:

- Current drought conditions: Davis outlined the severe drought conditions across the Okanagan Basin. She highlighted the resulting decrease in the natural recharge of aquatic ecosystems, with potentially detrimental effects on water quality and availability.
- Aquatic ecosystem health: Davis discussed the adverse impacts of prolonged drought on various parts of the aquatic ecosystem, including fish populations, overall water quality, and the health of the ecosystem as a whole.
- Proactive measures: Davis stressed the urgent need for implementing proactive water management policies to effectively mitigate the adverse effects of drought. She emphasized the importance of strategies such as:
  - » Improved data collection practices
  - » Real-time monitoring for timely and informed decision-making

Blair Ireland: Combining Science and Traditional Knowledge

Blair Ireland, Chair of the Okanagan Basin Water Board, delivered a keynote address on the importance of integrating Traditional Knowledge with Western scientific research to enhance water stewardship practices. He advocated for the following:

- Integrated approaches: Ireland emphasized the value of merging Western scientific methods with Traditional Knowledge systems to develop more holistic and effective water management practices.
- Monitoring and data collection: He stressed the importance of robust monitoring programs and comprehensive data collection to support evidence-based policy decisions and ensure the long-term sustainability of water resources.
- Community engagement: Ireland also highlighted the critical need to actively involve Indigenous communities in water management processes. He pointed out that inclusive approaches that value diverse perspectives lead to better and more equitable outcomes.

INTRODUCTION TO STRATEGIC FORESIGHT

Kathy Porter and Rebecca Black *(pictured top left)* introduced the strategic foresight process, outlining its stages and the value of using trend cards as a tool for stimulating insightful discussions. Their presentation highlighted:

Stages of strategic foresight: Porter and Black summarized the five key stages involved in the strategic foresight process:

1. Identify the domain: Define the specific area of focus for future thinking.
2. Scan for trends: Identify and analyze the emerging trends and drivers of change in the chosen domain.
3. Develop scenarios: Create possible and diverse future scenarios based on the identified trends and uncertainties.
4. Implement future-focused plans: Develop strategies and plans for getting to the desired future outcomes and reducing potential risks.
5. Backcast: Work backward from the desired future outcomes to identify the steps and actions needed to achieve those outcomes.

Collaborative planning and scenario development: The speakers emphasized the importance of fostering collaborative planning processes that engage various interested parties in exploring potential future scenarios. This approach is essential for preparing for the uncertainties and complexities of the future and for developing resilient and adaptable water management strategies *(pictured middle left)*.

WORKSHOPS AND NETWORKING

The afternoon of day one featured interactive workshops that provided participants with opportunities to explore specific aspects of water management. These workshops, facilitated by experts in their fields, provided practical tools and strategies that participants could apply to real-world challenges. The day concluded with a networking reception, allowing attendees to connect with peers, exchange ideas, and build relationships *(pictured bottom left)*.

DAY 2: DEEPENING THE DIALOGUE

Day two of the conference began with a screening of the documentary Bringing the Salmon Home, which powerfully illustrated the importance of collaboration in addressing complex environmental issues. The film showcased the positive changes that can be achieved when Indigenous communities, government agencies, and other interested parties work together toward a shared goal—in this case, restoring salmon populations in the Okanagan River system. After the film, participants attended presentations and workshops to further explore specific topics related to environmental flows and water management.

MORNING KEYNOTE PRESENTATIONS

Jon Jeffery, a data analyst at Environment and Climate Change Canada, delivered an engaging presentation on how important it is to use hydrometric data to manage water effectively. Using the memorable analogy of "counting beans," Jeffery expressed how complex but important it is that data is accurate and reliable. Specifically, he discussed:

- Data quality: Accurate and comprehensive data is essential for developing a thorough understanding of natural flow regimes. This understanding is necessary to make informed decisions regarding water allocation, infrastructure development, and ecosystem protection.
- Consistent standards: To ensure that data are comparable across different regions, time periods, and research initiatives, data collection standards must be consistent.
- Data integration: Integrating data from various sources can provide a more holistic view of complex water systems, which can in turn improve the accuracy of models, predictions, and management strategies.

Natasha Lukey, Auston Chhor, and James Telford delivered key presentations.

SCENARIO DEVELOPMENT AND ACTION PLANNING

In the afternoon, participants use the strategic foresight method introduced earlier in the conference to develop scenarios. Guided by the trend cards and the insights gathered during the event, they worked in groups to refine their scenarios and create detailed action plans for their respective areas of interest.

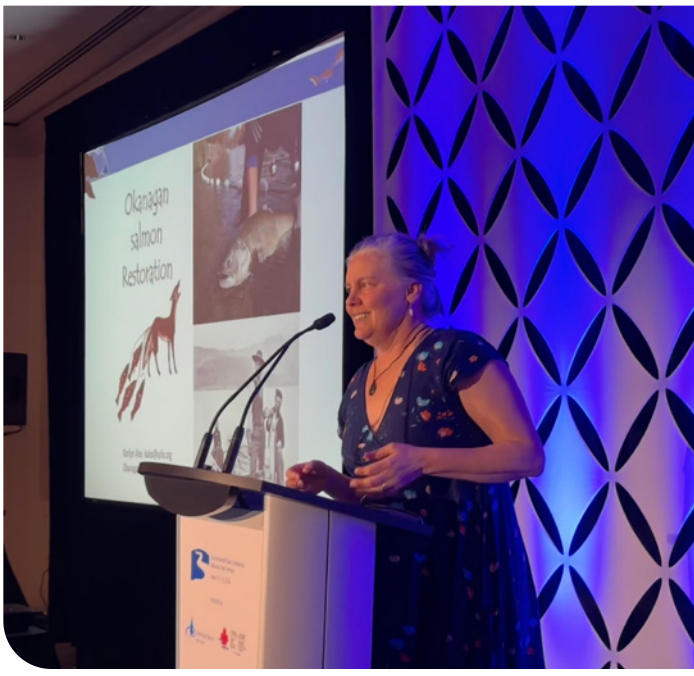
These action plans outlined:

- Specific steps to be taken
- Roles and responsibilities of those involved
- Timelines for implementation

This structured approach to action planning was intended to equip participants with practical knowledge on how to implement sustainable water management practices in their communities, organizations, and areas of influence.

GALA DINNER AND KEYNOTE PRESENTATION

The day concluded with a gala dinner featuring a keynote address by Karilyn Alex from the Okanagan Nation Alliance. Alex expressed the significance of using Indigenous stewardship principles and practices in water management, highlighting their relevance for contemporary challenges. She stressed the importance of collaborating across cultures and the need to recognize and incorporate traditional ecological knowledge into water policy and decision-making processes.



DAY 3: MOVING TOWARD ACTION

Day three centred on translating the insights gathered over the previous days into concrete action plans. The day began with Dr. Jatel welcoming attendees back, followed by impactful keynote presentations. Natasha Lukey, Okanagan Nation Alliance, explained how environmental flow monitoring can be used to restore floodplains and enhance aquatic biodiversity. Next, Auston Chhor, with the Raincoast Conservation Foundation, discussed his research on the intricate relationships between streamflow, water temperature, and water extraction in the Nicola Basin. James Telford, BC Ministry of Water, Land and Resource Stewardship, then outlined the challenges and opportunities in improving watershed environmental flow needs in the Thompson-Okanagan region. The day progressed with participants engaging in strategic foresight exercises, using the trend cards to refine their visions for water management's future and co-create practical strategies. Collaborative workshop participants will create detailed action plans that outline specific steps, timelines, and responsibilities for implementing sustainable water management practices across different sectors.

The conference's final day was about transforming the knowledge and insights gathered over the first two days into concrete action plans for managing water sustainably. Participants engaged in keynote presentations, collaborative workshops, and closing discussions about practical applications and commitments to future actions.

CLOSING REMARKS AND REFLECTIONS

The conference concluded with a closing ceremony, during which Dr. Jatel summarized the key takeaways and reminded participants about the importance of sustained collaboration in realizing the vision of siwɬkʷ for all. He extended his gratitude to all participants, speakers, and organizers, acknowledging their invaluable contributions and emphasizing the shared commitment to a sustainable future for water resources in the Okanagan Basin and beyond. He encouraged attendees to carry forward the collaborative spirit they fostered during the conference and urged them to use the action plans they developed. He concluded by reinforcing the conference's overarching message, stating that we must continue working together to ensure that the vision of siwɬkʷ for all becomes a reality and to secure a sustainable water future for the Okanagan Basin and beyond.

Key Insights and Recommendations

EFC 2024 provided a platform for sharing knowledge, revealing valuable insights on how complex water management is. These insights led to several key recommendations:

Cross-sector relationships: Building and nurturing strong cross-sector relationships is essential for effective water management. Removing barriers between government agencies, Indigenous communities, industries, and other parties with a vested interest is crucial for promoting trust, encouraging communication, and fostering a shared vision for water stewardship.

Collaborative governance: It is critical that we shift toward collaborative governance models that prioritize inclusivity and shared decision-making. This can happen only by recognizing and respecting the rights, interests, and knowledge systems of Indigenous communities.

Traditional Knowledge sharing: We must create platforms and mechanisms for the respectful and meaningful sharing of traditional ecological knowledge. Integrating Traditional Knowledge with Western scientific data can lead to more holistic and sustainable water management practices.

Policy innovation: Fostering policy innovation is necessary for adapting to the evolving challenges of water management. This includes revisiting existing policies, identifying areas for improvement, and developing new policies that address emerging issues such as climate change, population growth, and evolving water demands.

Data collection, sharing, and management: Data collection, sharing, and management practices must be improved for informed decision-making. This includes:

- Investing in real-time monitoring systems
- Developing standardized data-sharing platforms to allow accessibility and transparency
- Agreeing on robust and adaptable methods for assessing environmental flow needs

Conclusion

EFC 2024 was a resounding success, effectively building upon the legacy of its predecessor. The event reinforced the importance of:

- Collaboration: Bringing together Indigenous communities, government agencies, private organizations, and individuals to ensure a holistic and inclusive approach to water management.
- Indigenous knowledge: Recognizing and incorporating traditional ecological knowledge with Western scientific data in shaping water management strategies.
- Adaptive policies: Developing policies that are not only robust but also flexible enough to adapt to the evolving challenges presented by climate change.

The outcomes of this conference, documented in this report, will serve as a road map for future endeavours in water management, guiding all interested parties toward a future in which water resources are managed sustainably for the benefit of all.

Participant Feedback and Evaluation

"We are all connected, water shows this way to us."

– Mason Squakin

Aaron Coelho, Urban Systems
Alexander LaForce, Lower Nicola Indian Band
Allen Hanson, Highridge Environmental Consulting
Allison Matfin, Kerr Wood Leidal Associates Ltd.
Alyssa Bourgeois, Ecofish Research Ltd.
Amanda Burnett, Okanagan Basin Water Board
Amanda Rust, R.F. Binnie & Associates Ltd.
Amelia Russell, Volunteer
Andre-Marcel Baril, Geo Process Research
André St-Hilaire, INRS
Anna Warwick Sears, Okanagan Basin Water Board
Anthony Bastiaanssen, Guest
Anwen Ree, Simon Fraser University
Ashlee Jollymore, Machydro
Auston Chhor, Raincoast Conservation Foundation
Ayla DeGrandpre, Volunteer
Billie Jean Gabriel, Bringing the Salmon Home Initiative
Blair Ireland, Mayor of Lake Country
Bob Hrasko, Black Mountain Irrigation District
Breanna Scott, UBCO
Brenden Russell, BMID
Brian Guy, Associated Environmental Consultants Inc.
Brian Holmes, Upper Nicola Band
Carol McCauley, Scw'exmx Tribal Council
Carolina Restrepo, Okanagan Basin Water Board
Carolyn DuBois, DataStream Initiative
Casey Cawston, Upper Similkameen Indian Band
Cassia Armstrong, Kerr Wood Leidal
Chad Davey, Kerr Wood Liedal
Chad Lishman, Urban Systems
Chani Welch, Okanagan Nation Alliance
Charlie Hodges, City of Kelowna
Chloe Alex, Guest
Chris Jaeggle, Hatfield Consultants
Chris Williams, BC Ministry of Water Land and Resource S.
Christopher Fisher, Colville Confederated Tribes
Clement Agboma, Teck Resources Ltd.
Colette Louie, Osoyoos Indian Band
Collin Middleton, BC Ministry of Water, Land and Resource S.
Corinne Jackson, Okanagan Basin Water Board
Craig Nichol, UBCO
Crystal McMaster, Nicola Watershed Governance Partnership
Curtis Abney, Cabin Operations
Daniel McGuire, Knight Piesold
David Hayward, Associated Environmental
David Hunter, BC Hydro
David Serrano, University of Victoria
Dawn Machin, Okanagan Nation Alliance
Dawn Russell, Community Member
Dean Foster, Associated Environmental Consultants
Deana Machin, Ind. Contractor, Okanagan Indian Band
Denise Neilsen, AAFC
Donovan Klassen, Carollo Engineers
Dorian Turner, Teck Resources

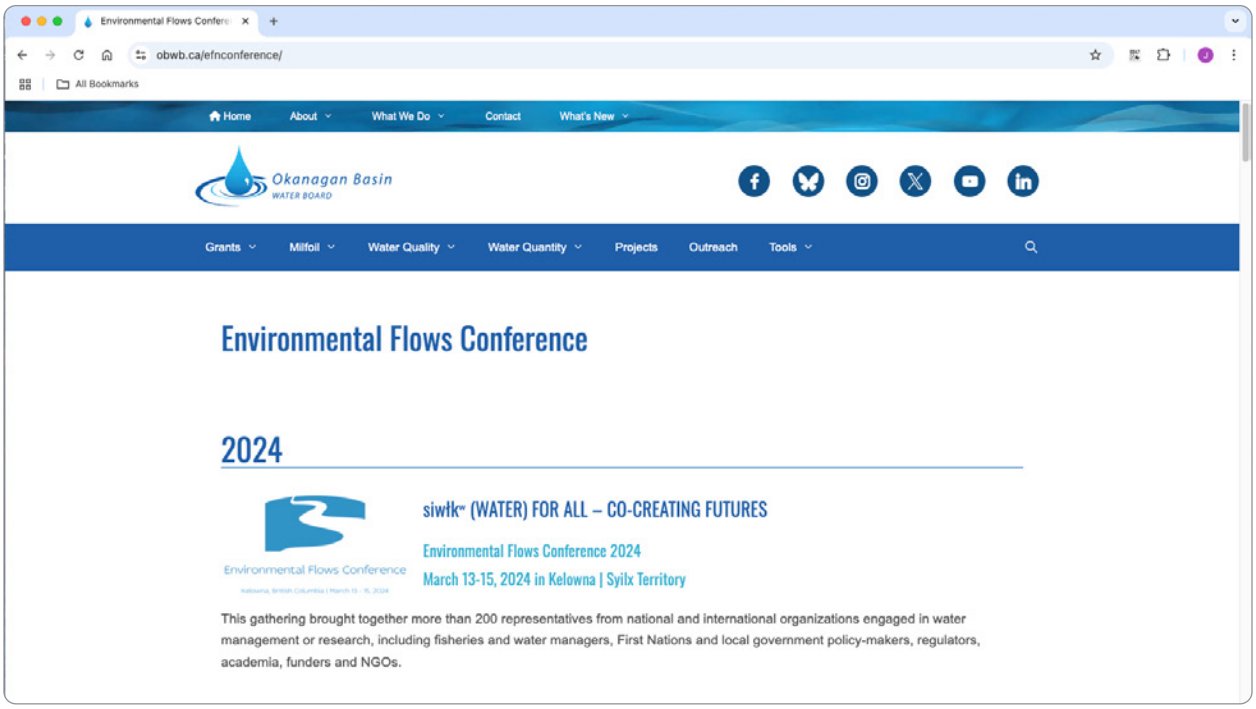
Doug Allin, Township of Spallumcheen
Doug Holmes, Mayor of Summerland
Drennen MacPherson, Aski Reclamation LP
Dudley Reiser, Kleinschmidt Associates
Dwayne Meredith, Kerr Wood Leidal
Eileen Senyk, Regional District of Central Kootenay
Elinor McGrath, Okanagan Nation Alliance
Erica Kabotoff, Citxw Nlaka'pamux Assembly
Erin Deffs, Volunteer
Eva Antonijevic, Okanagan Nation Alliance
Eva Tom, Nicola Watershed Governance Partnership
Faline Drummond, Security Agency
Farid Otoufat Shamsi, Volunteer
Fawn Pierro-Zabotel, Bonaparte Sales Limited Partnership
Finn Elliot, Upper Similkameen Indian Band
Forrest Bjornson, BCIT
Gailey Regan, Community member
James Telford, BC Ministry of Water, Land and Resource S.
Julie Austin, UBCO
Julie Robinson, Hoskin Scientific
Julie Terry, Ecofish Research Ltd.
Kai Mountfort, BC Ministry Water, Land and Resource S.
Kamila Baranowska, Ktunaxa Nation Council
Karilyn Alex, Okanagan Nation Alliance
Kasey Clipperton, WSP Engineering
Kate Sharpe, Volunteer
Katherine Fegan, Okanagan Nation Alliance
Kathy Porter, Sequoia Mediation
Katie Healey, Ecofish Research Ltd.
Kellie Garcia, Cross-Commodity Leadership Support Project
Ken Christison, Northwest Hydraulic Consultants Ltd.
Kenneth Martin, Nak'azdli Whut'en
Kiel Wilkie, District of Lake Country
Krista Derrickson, Westbank First Nation
Kristen King, BC Ministry Water, Land and Resource S.
Kristen Walters, Raincoast Conservation Foundation
Kristina Anderson, Regional District Kootenay Boundary
Kyle Hawes, Ecoscape Environmental Consultants Ltd.
Lara Harder, Volunteer
Leif Burge, Ecofish
Leona Antoine, Nlakapmux Indigenous-led initiative
Lisa Henault, Hatfield
Lori Logan, DataStream Initiative
Luke Ehler, Volunteer
M.A. Monem El Zeftawy, Civil Env. Eng.
Madison Terbasket, Penticton Indian Band
Makuei Mehrnaz, Volunteer
Mark Gifford, REFBC
Marni Turek, UBC Okanagan
Marta Green, Associated Environmental Consultants Inc.
Mary Kruk, DataStream Initiative
Mason Squakin, Upper Similkameen Indian Band
Matt Davidson, Sage Environmental Consulting Ltd.
Maureen Grainger, Fortis BC
Megan Durno, City of Dawson Creek
Meghan Grossman, Volunteer
Melissa Tesche, BC Fruit Growers' Association
Memphis Tokar, Volunteer
Michele Hill, Hill Environmental Ltd.
Mike Leggat, Hydrologic Inc.
Mike Schutten, Ecoscape Environmental Consultants Ltd.
Nahid Olumi, Volunteer
Natasha Lukey, Okanagan Nation Alliance
Natasha Neumann, BC Ministry of Forests
Nell Libera, DataStream Initiative
Nelson Jatel, Okanagan Basin Water Board & Conference Chair
Niko Wicharuk, Teck Resources
Paige Thurston, Living Lakes Canada
Patience Muldoe, NVIT
Patti Meger, District of Lake Country
Paul Mozin, Ecofish Research Ltd.
Pengcheng Li, Ecofish Research Ltd.
Rebecca Black, Black Current Marketing
Richmond Tawiah, Institute of Distance Learning, KNUST
Rick Firbairn, RDNO Director
Robert Morgan Rashke, Bringing the Salmon Home Initiative
Robert Sandford, UN Univ. Institute for Water, Environment and Health
Robin Pike, Ministry of Water, Land and Resource S.
Robinson Puche, City of Kelowna
Rod MacLean, City of Kelowna
Roy Seriosa, Bonaparte Sales Limited Partnership
Ruth Hoyte, District of Coldstream
Ryan MacDonald, MacDonald Hydrology Consultants Ltd.
Ryan Rolick, BC Energy Regulator
Ryder Hoy, Northwest Hydraulic Consultants
Sacha Ruzzante, University of Victoria
Sadeed Hassan, Hudbay Minerals Inc.
Saeed Mohammadiun, UBC & NHC
Samantha Davis, Northwest Hydraulic Consultants
Samuel Grenier, Associated Engineering
Sandra Schira, Okanagan Basin Water Board
Saskia Kowallik, BC Ministry of Environment & Climate Change
Scott Boswell, Okanagan Collaborative Conservation Program
Scott Smith, Retired
Shayne Kuchma, Secwépemc Fisheries Commission
Shelley Fiorito, RDOS
Simone Runyan, District of Coldstream
Skyeler Folks, Okanagan Nation Alliance
Stacey Orr, Splatsin
Stefan Gronsdahl, Palmer
Stefanie Schoenberger, Western Water Associates Ltd.
Stephanie Cavaghan, Hatfield Consultants
Tabitha Eneas Attendee, Penticton Indian Band
Tahina Choudhury, PGL Environmental
Tara Montgomery, Okanagan Nation Alliance
Taylor McRae, Stantec
Tessa Terbasket, Okanagan Nation Alliance
Theresa Marshall, Bringing the Salmon Home Initiative
Therésa Buchanan, Volunteer
Tobyn Volz, Aski Reclamation LP
Toni Boot, REFBC
Tricia Brett, Regional District of North Okanagan
Zee Marcolin, Regional District of North Okanagan
Zhaozhi (George) Wang, Okanagan Nation Alliance
Zoe Eyjolfson, Okanagan Nation Alliance

"We must speak up for water!"

– Marta Green

Visuals – Legacy Information Portal

An online legacy portal is available at **https://obwb.ca/efnconference/**, featuring key conference documents.



GLOBAL OKANAGAN, MARCH 13, 2025:

More than 200 attendees from across Canada and the U.S. gathered at the Environmental Flows Conference to share the latest in environmental flow (instream flow) research, and to discuss how to support the water needs of fish and the greater ecosystem – including water for farming, for residents, and more.

YouTube

Watch the video here:
www.youtube.com/watch?v=lcvGKiJo_jM

Appendices

APPENDIX A: CONFERENCE AGENDA

Tuesday, March 12, 10 AM TO 4 PM - Salt Dilution - NASH Workshop

DAY 1	**Wednesday** **March 13, 6:30 AM TO 7:00 PM**
6:30	Breakfast - Registration
8:00	Opening Ceremony I Setting the Stage
9:40	**Topic 1: Policy** Dawn Machin, Okanagan Nation Alliance Dudley Reiser, Kleinschmidt Group Jaroslaw Szczot, BC Ministry of Water, Land and Resource Stewardship
10:30	Bio Break & Networking
11:00	Facilitated Session
11:30	**Topic 2: Ecosystems** Natasha Lukey, Okanagan Nation Alliance Georgia Peck, Living Lakes Canada & Brian Holmes, Upper Nicola Band Kyle Hawes, Ecoscape Environmental Consultants
12:20	Lunch & Networking sponsored by nhc
1:25	Facilitated Session
1:55	**Topic 3: Hydrology & Licencing** Natasha Neumann, BC Ministry of Forests Chani Welch, Okanagan Nation Alliance Auston Chhor, Raincoast Conservation Foundation James Telford, BC Ministry of Water, Land and Resource Stewardship
2:55	Facilitated Session
3:20	Bio Break & Networking
3:50	**Topic 4: Environmental Flow Needs Setting Methods** Stephanie Cavaghan, Hatfield Greg Courtice, Independent Consultant David Semeniuk, Fisheries and Oceans Canada
4:40	Facilitated Session
5:10	Closing Day 1 Activities
5:15	Launch and Reception by Pacific DataStream
7:00	Guess Who's Coming for Dinner

DAY 2

Thursday
March 14, 6:15 AM TO 7:00 PM

6:15	Yoga - Stretching Session
7:00	Breakfast
7:15	Screening of "Bringing the Salmon Home Documentary"
8:00	Opening
8:25	**Topic 5: Data Collection & Compliance** Jon Jeffery, BC Ministry of Environment and Climate Change Strategy Katie Healey, Ecofish Consulting Genevieve Brown, Northwest Hydraulic Consultants Ryan Rolick, BC Energy Regulator
9:30	Facilitated Session
10:00	Bio Break & Networking sponsored by HABIT
10:30	**Topic 6: Land Use & Storage** Melissa Tesche, BC Fruit Growers Association Stefan Gronsdahl, Palmer Environmental Consulting Group Rod MacLean, City of Kelowna
11:30	Facilitated Session
12:30	Lunch & Networking sponsored by Associated Environmental
1:35	**Case Studies Part 1** Dudley Reiser, Kleinschmidt Group Elinor McGrath, Okanagan Nation Alliance Dave Hunter, Peace River Habitat Enhancement
3:05	Bio Break & Networking
3:35	**Case Studies Part 2** Andre St. Hilaire, INRS Canadian River Institute Andre Baril, GeoProcess Research Associates
4:35	Facilitated Session
5:00	Closing Day 2 Activities
5:05	Free time
6:00	Pre-Gala Reception
7:00	Gala Dinner and Keynote Presentation by Karilyn Alex, Okanagan Nation Alliance

DAY 3

Friday
March 15, 6:15 AM TO 12:30 PM

6:15	Yoga - Stretching Session
7:00	Breakfast
8:00	Opening
8:05	Rapporteur: Robert Sandford, UN EPCOR Chair, Water Security
8:45	Mapping Trends and Scenario Planning
10:00	Bio Break & Networking
10:30	Mapping Trends and Scenario Planning
12:00	Concluding Remarks
12:30	Adjourn

APPENDIX B: LIST OF SPEAKERS, PRESENTERS, AND AFFILIATIONS

DAY 1: WEDNESDAY MARCH 13, 6:30 AM TO 7:00 PM

TIME	ACTIVITY	SPEAKER	AFFILIATION
6:30 AM	Breakfast and registration		
8:00 AM	Opening ceremony: Setting the stage	Nelson Jatel	Okanagan Basin Water Board – Water Stewardship Director
		Grand Chief Steward Phillip	Union of BC Indian Chiefs - President
		Councillor Jordan Coble	Westbank First Nation - Councillor
		Councillor Loyal Wooldridge	City of Kelowna and Regional District of Central Okanagan (Chair)
		Mayor Blair Ireland	Okanagan Basin Water Board – Chair, District of Lake Country
	Honoured Guests	Anna Warwick Sears	Okanagan Basin Water Board – Executive Director
		Brian Guy	Canadian Water Resource Association
9:40 AM	Topic 1: Policy	Dawn Machin	Okanagan Nation Alliance
		Dudley Reiser	Kleinschmidt Group
		Jennifer Davis	BC Ministry of Water, Land and Resource Stewardship
10:30 AM	Bio-break and networking		
11:00 AM	Facilitated session	Kathy Porter / Rebekka Black	
11:30 AM	Topic 2: Ecosystems	Natasha Lukey	Okanagan Nation Alliance
		Georgia Peck and Brian Holmes	Living Lakes Canada and Upper Nicola Band
		Kyle Hawes	Ecoscape Environmental Consultants
12:20 PM	Lunch and networking		
1:25 PM	Facilitated session		
1:55 PM	Topic 3: Hydrology and licensing	Natasha Neumann	BC Ministry of Forests
		Chani Welch	Okanagan Nation Alliance
		Auston Chhor	Raincoast Conservation Foundation
		James Telford	BC Ministry of Water, Land and Resource Stewardship
2:55 PM	Facilitated session		
3:20 PM	Bio-break and networking		
3:50 PM	Topic 4: Methods for setting environmental flow needs	Stephanie Cavaghan	Hatfield
		Greg Courtice	Independent consultant
		David Semeniuk	Fisheries and Oceans Canada

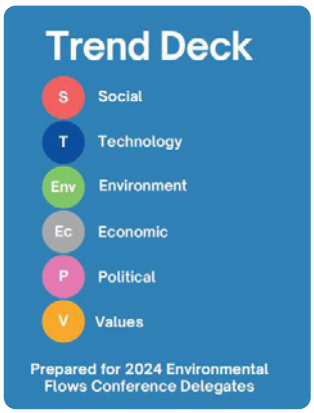
DAY 2: THURSDAY, MARCH 14, 7:00 AM TO 9:00 PM

TIME	ACTIVITY	SPEAKER	AFFILIATION
7:00 AM	Breakfast and registration		
8:00 AM	Welcome	Nelson Jatel	Okanagan Basin Water Board
8:30 AM	Topic 5: Data collection	Jon Jeffery	Environment and Climate Change Canada
		Genevieve Brown	Northwest Hydraulic Consultants
9:30 AM	Facilitated session		
10:00 AM	Bio-break and networking		
10:30 AM	Topic 6: Land use and storage	Melissa Tesche	BC Fruit Growers Association
		Stefan Gronsdahl	Palmer Environmental Consulting Group
		Rod MacLean	City of Kelowna
11:30 AM	Facilitated session	Facilitated session	
12:30 PM	Lunch and networking	Lunch and networking	
1:35 PM	Case studies: Part 1	Dudley Reiser	Kleinschmidt Group
		Elinor McGrath	Okanagan Nation Alliance
		Dave Hunter	Peace River Habitat Enhancement
3:05 PM	Bio-break and networking		
3:35 PM	Case studies: Part 2	André St-Hilaire	INRS Canadian River Institute
4:35 PM	Reflections and next steps		
6:00 PM	Gala dinner	Keynote: Karilyn Alex	Okanagan Nation Alliance

DAY 3: FRIDAY, MARCH 15, 2024, 7:00 AM TO 12:00 PM

TIME	ACTIVITY	SPEAKER	AFFILIATION
7:00 AM	Breakfast and registration		
8:00 AM	Welcome	Nelson Jatel	Okanagan Basin Water Board
8:30 AM	Topic 7: Future of environmental flows		
9:30 AM	Facilitated session		
10:00 AM	Bio-break and networking		
10:30 AM	Topic 8: Constructed habitats	Stephanie Cavaghan	Hatfield
11:30 AM	Facilitated session		
12:30 PM	Lunch and networking		
1:30 PM	Closing ceremony: Reflections and next steps	Nelson Jatel, Dawn Russell,	Okanagan Basin Water Board, Penticton
		Grand Chief Stewart Phillip, and Blair Ireland	Indian Band, Union of BC Indian Chiefs, and Okanagan Basin Water Board

APPENDIX C: STRATEGIC FORESIGHT TREND CARDS



Strategic foresight is a systemic approach to gathering intelligence and building shared visions by challenging underlying assumptions and considering alternative futures. Here are four scenarios generated from participant feedback.

SCENARIO 1 - SLOW EVOLUTION 2035

In the year 2035, urban landscapes and natural ecosystems are slowly becoming integrated due to an increased recognition of the importance of natural capital. Renewable energy sources are harnessed efficiently, diminishing carbon footprints. The commodification of water and natural resources has slowed, leading to new connections that blur geographical boundaries, cultivating a meld of cultures and ideas. Progressive taxes are slowly improving the lives of the many. Increased collaboration between Indigenous and Settler communities offers a promising yet cautious horizon for Environmental Flow Needs (EFN).

SCENARIO 2 - TRANSFORMED 2035

Regenerative human communities acknowledge the world shared with living rivers and forest communities whose vast mycelial network mirrors the global human-communication network. Vibrant communities powered by renewable energy provide a universal income for all, with egalitarian access to education. Technology has dissolved socio-economic barriers, crafting a mosaic where every citizen has

the opportunity to thrive. Indigenous governance structures guide environmental stewardship, blending ancestral wisdom with futuristic technologies. Collaborative decision-making draws a broad cross-section of society into EFN decision processes. Regenerative human communities acknowledge the world shared with living rivers and forest communities whose vast mycelial network mirrors the global human-communication network. Vibrant communities powered by renewable energy provide a universal income for all, with egalitarian access to education. Technology has dissolved socio-economic barriers, crafting a mosaic where every citizen has the opportunity to thrive. Indigenous governance structures guide environmental stewardship, blending ancestral wisdom with futuristic technologies. Collaborative decision-making draws a broad cross-section of society into EFN decision processes.

SCENARIO 3 - CONSTRAINED 2035

In 2035, Canada enforces stringent sustainability and ethical codes, ensuring every sector prioritizes ecological and social integrity. Rigorous educational curricula focusing on civic responsibility and technological literacy shape informed citizens. A robust economy depends on a meticulous approach to resource management. Water Systems are clearly identified, accurately measured, monitored, and collaboratively managed. Natural water systems are protected with severe consequences for individuals or organizations who cause harm to water sources.

SCENARIO 4 - COLLAPSE 2035

In 2035, reeling from the impacts of ecological devastation and economic collapse, Canada finds its once-thriving cities and healthy wilderness languishing. A strained social fabric, torn by resource scarcity and societal mistrust, exacerbates mass migrations and internal conflicts. The stark contrast between past prosperity and the present struggle propels a desperate search for salvageable remnants, aiming to reconstruct a society from the ashes of collapsed ecological and social frameworks.

APPENDIX D: SYNTHESIS AND FEEDBACK SUMMARY

CONFERENCE PARTICIPANT FEEDBACK SUMMARY

As part of the conference feedback process, participants were asked to identify the key barriers and opportunities for achieving better outcomes on critical water issues and to rank them by importance. Below is a summary of their insights:

Key Barriers to Achieving Better Outcomes:

1. **Political Will** – The need for stronger leadership and commitment at all levels.
2. **Funding and Resources** – Insufficient financial and human resources to support initiatives.
3. **Relationship Building** – Challenges in fostering trust and collaboration among stakeholders.
4. **Data Sharing, Measurement, and Evaluation** – Limited access to and integration of critical data.
5. **Expertise and Enabling Tools** – Gaps in technical knowledge and the availability of necessary tools.

Key Opportunities to Achieve Better Outcomes:

1. **Cross-Sector Relationships** – Strengthening partnerships between diverse stakeholders.
2. **Collaborative Governance** – Implementing inclusive and coordinated decision-making processes.
3. **Traditional Knowledge Sharing** – Integrating Indigenous knowledge and local expertise.
4. **Policy Innovation** – Developing adaptive and forward-thinking water policies.
5. **Data Collection, Sharing, and Management** – Enhancing data-driven decision-making practices.

Key Achievements:

- **Effective Facilitation:** Participants appreciated the facilitation, noting there was ample time for meaningful discussions and exchange of perspectives.
- **Seating Arrangement:** The restructured seating allowed for diverse viewpoints to be shared and better networking opportunities.
- **Trend Cards:** The use of trend cards was highly valued for their accuracy and relevance.
- **Improved Engagement:** While bio breaks were provided, additional movement and stretching opportunities between sessions were suggested to enhance alertness and participation.

- **Agenda Considerations:** Some participants felt the agenda was too packed, and incorporating more downtime could improve the experience.
- **Presentation Enhancements:** There were suggestions for incorporating more video content from experts to diversify the presentation formats.

Challenges Identified:

A significant challenge highlighted was the lack of communication and coordination across sectors, environmental organizations, and government bodies regarding best practices for addressing shared water challenges and opportunities.

Future Opportunities:

- **Addressing Data Gaps:** The presentations underscored the need for comprehensive training and education to bridge existing knowledge gaps.
- **Engaging Economic Stakeholders:** There is an opportunity to foster greater dialogue with economic stakeholders to better understand and incorporate their perspectives on water use.

This feedback provides valuable insights into the priorities and improvements needed to advance collaboration and effectiveness in addressing critical water issues.

WORD CLOUD SUMMARY

The image below is a word cloud generated from feedback from participants at the Environmental Flow Conference. The word cloud visually represents the most frequently mentioned themes, concerns, and priorities discussed during the event.

Key Observations:

- **Prominent Themes:** The most frequently cited words, appearing in larger and bolder fonts, include *water, holistic, decision, food, storage, data, research, watershed,* and *management*. These suggest that participants primarily focus on comprehensive and integrated approaches to water resource management, food security, and data-driven decision-making.
- **Critical Topics:** Other notable terms such as *infrastructure, governance, knowledge, indigenous, economy,* and *government* indicate critical areas of concern related to policy, resource allocation, and collaboration among different sectors and communities.
- **Challenges Highlighted:** Words like *risk, conflict, fragmentation, fake news, overload,* and *assumptions* point to key challenges participants perceive in achieving effective environmental flow management. These may reflect concerns over misinformation, data reliability, and regulatory fragmentation.
- **Opportunities Identified:** Terms like *collaborative, adaptive, trust, frameworks, integration,* and *education* suggest that attendees see opportunities for improving outcomes through cooperation, knowledge-sharing, and innovative policy approaches.
- **Emotional and Social Dimensions:** Words such as *emotional, heart, youth, voices,* and *perspectives* imply that the human and cultural dimensions of environmental water management are recognized beyond technical and policy aspects.

Overall, the word cloud provides a high-level overview of the major themes and insights from the conference, highlighting the technical and socio-political dimensions of environmental flow management.

Okanagan Basin
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