Watersheds 2016

Building Capacity for Collaboration and Watershed Governance in British Columbia

A forum for water practitioners, watershed groups,
First Nations, and other decision-makers

SEPTEMBER 30–OCTOBER 1, 2016

SFU HARBOUR CENTRE & SFU WOSK CENTRE FOR DIALOGUE

Held in Vancouver, B.C. on the unceded Coast Salish territories
of the Musqueam, Squamish, and Tsleil-Waututh Nations

Edited Proceedings

#WATERSHEDS2016

Watersheds 2016 Opening Speakers. *Top, left to right: Elder Margaret George, Dr. Vicki Kelly, Dr. Kelly Bannister. Centre: Audience. Bottom, left to right: Merrell-Ann Phare, Ta'Kaiya Blaney, Dr. Zafar Adeel.*

PHOTOS: ACTIVE INGREDIENT CREATIVE STUDIO

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Edited by Megan Spencer, Natasha Overduin, Kelly Bannister,
Rosie Simms, Oliver M. Brandes, and Laura Brandes

FRESHWATER ALLIANCE D'EAU DOUCE

Fraser Basin Council

POLIS Project on Ecological Governance
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Acknowledgements

These proceedings provide a written record of the one-and-a-half day forum *Watersheds 2016: Building Capacity for Collaboration and Watershed Governance in British Columbia*. The forum was held from September 30th to October 1st, 2016 on the unceded Coast Salish territories of the Musqueam, Squamish, and Tsleil-Waututh Nations at Simon Fraser University's Harbour Centre and Wosk Centre for Dialogue in Vancouver, B.C. The event was made possible with the support of a number of sponsors and partners; the forum strategic advisors; and the organizing efforts of the *Watersheds 2016* Planning team, which was comprised of members of the four co-hosting organizations.

Field trip and workshop organizers, staff, contractors, and volunteers were invaluable to the success of *Watersheds 2016*. The creation of this proceedings report was based on the efforts of the team of volunteer note takers who diligently captured the presentations and discussions at each of the sessions at the forum: Joseph Gothreau, Kate Hewitt, Natalya Melnychuk, Kevin Ngo, Maria Nguyen, Kelly Schnare, Megan Spencer, and Nicole Wilson.

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Introduction and Context

Working together for watersheds was the foundational theme for *Watersheds 2016.* Deceptively simple, it reflects both the great challenges and tremendous opportunities facing citizens, communities, and governments, as they grapple with increasing changes and challenges in their home watersheds. The conversations at *Watersheds 2016* took place within the context of accelerating climate change and increasing water pressures and demands, and the collective understanding that urgent change is needed in how we manage our relationships with water—and with each other.

The one-and-a-half day forum *Watersheds 2016: Building Capacity for Collaboration and Watershed Governance in British Columbia* was held on the unceded Coast Salish territories of the Musqueam, Squamish, and Tsleil-Waututh Nations at Simon Fraser University's Harbour Centre and Wosk Centre for Dialogue in Vancouver, B.C. The forum was co-hosted and organized by the POLIS Project on Ecological Governance, First Nations Fisheries Council, Fraser Basin Council, and Canadian Freshwater Alliance. *Watersheds 2016* dovetailed with the Canadian Freshwater Alliance's national *Living Waters Rally 2016*[1]. Over 150 practitioners and water champions from B.C. attended the event, bringing their knowledge and experience from local, provincial, and federal government; First Nations; academia; and the not-for-profit and philanthropic sectors.

Given how the freshwater movement in British Columbia is evolving, it was timely to bring together B.C.'s freshwater leaders, thinkers and doers for *Watersheds 2016*. Dozens of water stewardship groups, Indigenous-led initiatives, local and regional governments, and watershed boards are taking action to protect our fresh water. At a provincial scale, British Columbia's new *Water Sustainability Act* (*WSA*) offers new opportunities for formal shared or delegated decision-making and watershed-based planning. In parallel, Indigenous laws, title, and rights are being asserted in powerful new ways, further shaping how water is governed.

Despite these positive advances, challenges remain. Although the *WSA* is an important step towards better decision-making for B.C.'s water, the legislation continues to assert Crown ownership of water. As such, it fails to recognize Indigenous rights, and does not *yet* represent a truly robust and inclusive legal framework. Continued capacity and commitment is needed in communities, regions, and institutions to embrace new, collaborative ways of working together, and to build or re-build trust and relationships—including our ethical relationships with and through water itself.

Watersheds 2016 aimed to equip participants with awareness, skills, knowledge, and networks that will build their capacity and enable progress towards developing meaningful collaborative governance arrangements and realizing the full potential of the *WSA*. More broadly, the forum demonstrated to decision-makers that B.C.'s freshwater movement is real, sophisticated, and not going away: It must be taken seriously.

Throughout the forum, community watershed champions shared stories about changes being experienced first-hand and the solutions and partnerships being created in response:

- **Tim Kulchyski** shared the concerns for salmon whose upstream spawning passage has been obstructed by low flows in consecutive years, and the response of the Cowichan Tribes and the Cowichan Watershed Board to co-create governance solutions.
- **Lana Lowe** showed us how her nation's once-pristine traditional territory is being heavily impacted by resource extraction. But, Fort Nelson First Nation exemplifies courageous leadership by continually pushing for recognition, and spearheading solution implementation and meaningful collaborative partnerships.

- **Anna Warwick-Sears** described the transformational power of extreme drought and flood events for vulnerable ecosystems and communities, and illustrated steps communities can take to build resiliency.
- **Michael Miltenberger** and **Merrell-Ann Phare** offered the Mackenzie River Basin agreements as a model for "divorcing" from the adversarial decision-making model of the past 150 years and moving towards a nested, collaborative consent approach with Indigenous governments.

Organizational Note About the Proceedings

These proceedings contain a synthesis of themes, perspectives, and accounts of first-hand experiences heard at *Watersheds 2016*. They are based on the presentations given, questions raised, and discussions held during the keynotes and concurrent breakout sessions. We hope that this written record is not simply a summary for those who attended, but a resource and reference document for anyone researching or working on implementing innovative new decision-making practices and processes within their watershed in the pursuit of healthy, functioning aquatic systems and communities. Along with resource materials, videos, and PowerPoint presentations, these proceedings will also be made available online through the POLIS Water Sustainability Project's website.

This report is organized by session type, with the name and affiliation of each speaker and moderator listed at the beginning of each section. In some sections, the narrative weaves together the presentations with the discussion that followed; in other cases, the distinction between the presentation and discussion is more pronounced. This was done purposefully to recreate the different approaches used by presenters at the various panels, workshops, and keynote presentations at the event. Biographies of all the presenters can be found in Appendix 1, and a list of participants who attended the forum can be found in Appendix 2.

Elder Florence James opens Day 2 of the Forum. PHOTO: JENNIFER SWIFT

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Traditional Welcome and Event Opening

By Elder Margaret George (Simon Fraser University's Elders Program), Kelly Bannister (Conference Chair; University of Victoria's POLIS Project on Ecological Governance); Zafar Adeel (Simon Fraser University's Pacific Water Research Centre) & Vicki Kelly (Simon Fraser University's Faculty of Education)

This session was recorded and the video can be viewed online at https://www.youtube.com/watch?v=1tFs7UtqkYg.

Elder Margaret George welcomed participants to Coast Salish territory with an acknowledgement of the Musqueam, Squamish, and Tsleil-Waututh Nations. She shared a prayer to recognize the importance of leadership and the need to bring friendship and respect to this work.

Dr. Kelly Bannister (Conference Chair) gratefully acknowledged the four co-hosting partners, sponsors, organizing team, and the many individuals who brought *Watersheds 2016* to fruition.

Kelly underscored the importance of including ethics and reconciliation as underlying themes of the event, noting the Opening was held on "Orange Shirt Day," a day intended to raise awareness about reconciliation and recognize those who went to residential school. She asked us to consider what reconciliation means: What do the action items and recommendations from the Truth and Reconciliation Commission report mean for each of us in our different professional capacities? And what do they mean for us as individuals? She shared her evolving understanding of reconciliation as not simply an act or a moment in time, but a committed relationship and an ongoing practice that happens across many levels and scales—a practice that begins with each of us.

Dr. Zafar Adeel introduced participants to Simon Fraser University's Pacific Water Research Centre, and discussed challenges around freshwater access and policy in a global context. An estimated two billion people do not have access to safe water, and three billion people do not have good quality potable water. Indeed, the high-quality freshwater that many Canadian citizens take for granted is not available to everyone. Yet, Canada is not immune from water stresses, especially in urban centres.

The year 2015 was remarkable for international climate agreements. The global community put forward the *Paris Agreement*, which aims to constrain global warming to under two degrees Celsius after the year 2020. But Adeel noted that climate change is really about water. The ensuing changes to the hydrological cycle and politics around freshwater access are central societal issues.

Responding to the need to move towards a globally sustainable future, the international community, through the United Nations, also put forward the *2030 Agenda for Sustainable Development* in 2015. The agenda sets 17 ambitious goals for working towards human and environmental prosperity, including the goal to "ensure availability and sustainable management of water and sanitation for all.[2]" The 2016-2019 *Federal Sustainable Development Strategy* lays out how Canada responds to the *2030 Agenda* targets.[3]

Musical facilitation through flute was contributed by Indigenous artist and scholar Dr. Vicki Kelly.

Field Trips and Water Ethics Workshop

Three watershed field trips, which were co-organized with staff from Evergreen and Metro Vancouver, kick-started the forum. Field trip participants met with experts and community champions who answered questions and shared stories about watershed health and protection. As an alternative to the field trips, other forum participants chose to attend a workshop on water ethics and cross-cultural values.

Still Creek Watershed Field Trip

This field trip offered a headwaters-to-mouth exploration of one of the only surface streams in the City of Vancouver. Stops included Renfrew Ravine to view community art installations; green infrastructure projects in Lower Hume Park; and a soon-to-be restored river delta.

Carmen Rosen (Still Moon Arts Society) shares a tapestry map of Vancouver's lost streams. PHOTO: MEGAN SPENCER

Restoration Round-Up Field Trip

On this field trip, participants toured restoration sites throughout Metro Vancouver, including passive stormwater treatment at Vancouver's Olympic Village; stream reconnection and salt marsh construction at Creekway and New Brighton Parks; and a large-scale estuary restoration at Lynn Creek Estuary in North Vancouver.

Dave Harper (Rivers Institute) explains restoration initiatives in the Lynn Creek estuary. PHOTO: ROSIE SIMMS

Capilano Watershed Field Trip

Metro Vancouver manages three protected watersheds to provide 2.4 million residents with a clean, reliable and affordable supply of drinking water. This field trip visited the Capilano drinking-water watershed, with stops at Cleveland Dam, historical settling ponds, and an alpine lake.

Erica Forssman (Metro Vancouver) recounts the history of Cleveland Dam. PHOTO: NGAIO HOTTE

Water Ethics and Cross-Cultural Values Workshop

Facilitated by Vicki Kelly (Simon Fraser University) and Kelly Bannister (University of Victoria's POLIS Project), with contributions from Elder Florence James (Penelakut Tribe, Coast Salish Nation).

Water ethics workshop participants.
PHOTO: KELLY BANNISTER

NOTE: SPEAKER CONTRIBUTIONS HAVE BEEN PARAPHRASED AND ABBREVIATED SO SHOULD NOT BE CONSIDERED DIRECT QUOTES.

Opening and Welcome

Coast Salish Elder Florence James welcomed participants and opened the workshop with a drum song and water blessing. Florence underscored the sacredness of water and how everything relies on water—from the health of rivers to growing gardens to baptisms.

> *Thank you for the sacredness upon the stones, the sacredness of the heart in the drum.*
>
> *You are sacred.*
>
> *You are sacred.*
>
> *You are sacred.*

Introductions

Dr. Kelly Bannister is based at the University of Victoria and her work focuses on biocultural diversity and ethics. She recently migrated these interests into the realm of water, where the idea emerged for this session on "water ethics and cross-cultural values."

Elder Florence James is an educator, a traditional person, and a respected elder from Penelakut Island who is fluent in her Indigenous language and culture. Florence agreed to be the elder for this workshop and also opened the second day of the *Watersheds 2016* forum.

Dr. Vicki Kelly introduced herself as a visitor in this territory and of Anishinaabe descent. She is an Indigenous artist, educator, and scholar at Simon Fraser University who shares her gift of sound through what she calls the "discipline of the wind." Vicki doesn't perform songs when she plays the flute. Rather, it is an emergent process, in which she plays the ecology of the place and people in place. Vicki agreed to share Indigenous arts-based processes, including sound, in facilitating this workshop.

Background

Collaboration, co-governance, and reconciliation are all important concepts and aspirations in watershed governance that imply a relational element. Ethics brings this inter-relational aspect to the forefront. In general terms, Kelly defines ethics in terms of *how we treat one another* or *how we relate to one another and to the natural world*. When Kelly began to consider water in this way—and the kind of work we are doing on behalf of our watersheds, our families, our relations, creatures sharing the earth—she wondered if the inter-relational aspect needs to be more explicit in our efforts to create good guidance and governance structures for our watersheds.

When we come together from different backgrounds, cultures, and places—for example to negotiate a watershed stewardship plan or resolve a water sustainability problem—do we need to consider more explicitly what we are each bringing to the table that is unspoken, in terms of our beliefs, worldviews, teachings, values, convictions, biases, or assumptions?

Before we come together to collaborate, we don't always have the opportunity to build relationships with one another—to understand how to *be* together. If we don't enter a process with an understanding of our self or "the other," we may not be aware of how what we bring aids or impedes us in our receptivity to finding a collaborative way forward.

This workshop was a collective inquiry and interactive exploration of our ethical relationships with and through water. Indigenous arts-based processes were used to create a transformational space and facilitate sharing of that which is often unspoken

at watershed table discussions. The core idea behind the workshop was that rather than coming together to decide *what to DO together*, we must first come together to understand *how to BE together.* The *doing* follows the *being*.

A bowl of water was in the center of the circle at this workshop. The bowl was half full to leave space for water from each of the participants' watersheds. Through workshopping together, participants imagined adding a little water from each of the places they came from, filling the bowl with their collective waters and bringing to life the question:

> *What can we create together from the convergence of people from many watersheds when we truly place water at the center?*

Workshop Process

To begin the journey of working together, Vicki invited everyone to join her in a practice of honouring the seven directions (East, South, West, North, Father Sky Above, Mother Earth Below, Our Centre Within), accompanied by four drums and her flute.

> *As a flute player, my job is to listen, not to make music. Turn, listen, make myself available. The drums always drum; the heartbeat always happens.*

After the group moved together in each direction, participants were seated in a circle next to someone they did not already know well, with one extra chair for the Ancestors. Vicki explained:

> *We are going to explore the understanding that we are all human beings in the circle of life on Mother Earth. That we all grew up and came from places. And that those places have intimately shaped who we are, in the sense that they have shaped our senses, finely tuned us.*
>
> *The more we listen, the more we hear. The more we look, the more we see and the more we move with the profound experience of being with the ecologies in which we live or visit.*
>
> *In the Indigenous world, visiting is really important. It's also hard work. Because when we are visiting, we are totally present to the ecology. We're leaning in, we're listening, we're feeling, we're seeing. The more radically open we are, the more pedagogical the ecology is to us.*
>
> *This dialogue has created in each of us a particular relationship: One can only speak from one's place, and what they know. This is the teaching from our elders. This is the Anishinaabe way. Not because it's any better than any other way. But because it's what I know. In this place, in the Coast Salish area, they have their teachings and culture and language and ways of being that have been shaped and arisen out of relationship to this place.*
>
> *How have you been shaped by your place? How has your relationship with the ecology that you come from been shaped? What are your stories in relationship to water? How did they happen? What has water been teaching you at this time? What has water been teaching you over your lifetime?*

Vicki also spoke of "epistemology," a worldview. In our modern worldview, we have particular ways of thinking. We have a subjective/objective perspective, a linear reality. Our worldview offers a particular way of understanding how to be in the world.

> *But there are other worldviews. In Indigenous cultures, these are often circular. Light is often the key metaphor for knowing. In the workshop, participants explored sound through acoustimology, which is based on a circle of relationships that are equidistant from the source of the sound.*

Using acoustimology, we explore how we have come to a relationship with the natural world and how we are with our relations. How have our relations taught us about our worldview here? I'm going to be asking you to talk about your place; talk about the earth and the water and the animals and plants. I invite you to just talk about your places.

Working in pairs, participants introduced themselves to one another, shook hands, and responded to Vicki's questions. Each participant chose a small piece of coloured beeswax.

> *In the old way we were always making while we were telling stories and talking. Be busy with the beeswax; it will get soft. See what happens with it. Relax! Chill! Your busyness will create something, but you won't notice.*

Vicki shared the Anishinaabe Creation story of how *Git-chi'e Man-i-to'* brought the world into being.

In our story, out of nothing, he created the rock, the water, the sun, the warmth, the wind. And he breathed into each of these and gave them all living essence. And out of these he began to fashion the sun, stars, moon, earth; and he moulded the valleys and mountains. And in each of these elements was a gift:

Earth—growth, healing
Water—purity, cleansing, renewal
Fire—warmth
Wind—the breath of life

He began to fashion rivers, valleys, lakes, bushes, grasses, vegetables, trees. To each of these he gave a gift and blew into them the essence of life. Then the two-legged, four-legged, winged, swimmers, he gave a gift.

In the last, he created the human, we call the Anishinaabe. And he gifted the capacity of dreaming. Then he created all the laws of creation and order and beauty and harmony. Everything knew its place.

While Vicki fluted, participants were invited to shut their eyes and go to the place in the natural world where they would feel at home.

It could be your home or a place that always feels like home. Go there. Be there. Tell your partner about what the water, the earth, the warmth there. Each of these places has a qualitative signature. Talk about this place in general terms with your neighbour. Introduce your place. We're going to be dwelling on place.

Participants worked in pairs and then were fluted back as a group. Vicki shared her own landscape in Northwestern Ontario, and how she thought white pine trees were large until she met the "intimidating" cedars of the West Coast. When we go away from our places, on our return we may find ourselves breathing it all back in, lying in the moss and melting back into the earth from where we come. We carry that legacy with us.

As the paired work deepened, it became harder to pause the discussions. Vicki observed:

As you talk about the places you are from, you become animated, you tell stories. You can see in the way of your gestures, your voice. Following your imagination in trying to understand this place, the pedagogy of place is working with you, helping you understand your human journey in unique ways.

In each of us we have the rock. In the animals we have the rock. In the trees we have the water element, the air element. They all live within us. Our way of knowing them is so intimate. It's us and them sharing water, sharing liquid. We've been wandering in our places, but we have these stories that teach us how to value these things. How do we value this?

Vicki shared the Anishnaabe story of the Flood that took place after Creation. At the request of Sky Woman, who was with child, all the animals made attempts to dive deep into the water to find some soil. One by one they failed. Beaver, Loon, Kingfisher, no one comes up with soil. Squeaky little Muskrat asks to try and all the animals laugh! But he is so intent on reaching the bottom that he does it! Sky Woman creates an island out of the bit of earth and the animals celebrate. They have a place. Sky Woman has a place for her little ones. Everyone is fine. Bear goes around supervising; the animals entertain each other.

But Bear is feeling like they aren't being productive. Are they eating enough? Maybe the little ones aren't doing well because they aren't doing anything? They send a message with the birds to Nanabush and he comes to them to ask what is it? They tell him that the little ones aren't doing very well. They just sit there.

Nanabush journeys to the west. He sits on the mountain for days, pondering. What should we be doing for the little ones? He's been praying with no answer from the Creator. Then he hears a voice on the wind on the way down, to pick up all the coloured stones. He collects a huge number, builds a huge pile and glares at the rock. He is frustrated, he is drinking tea and throwing the rocks in the air in frustration—and they don't come down from the air. He takes another coloured rock and another, and they don't come down. In the firelight he sees a whole rainbow of fluttering coloured rocks.

He packs up his things and heads east. Everyone

is gathered and waiting. Nanabush comes with his magnificent cloud of butterflies. All the animals are so excited. They don't know what happened but the little ones are trying to catch the butterflies. They are rising themselves up, they are reaching, they are jumping. Then Bear laughs deep from his chest because the little ones are reaching.

As Cherokee writer Thomas King says, we need to have stories we can live by. The story of the Flood that took place after Creation is the moral code of being Anishnaabe, with the message that every bit of creation has a gift, even the littlest.

Mi'kmaw scholar and educator Marie Battiste says that each of us has a learning spirit that is reaching for something. Vicki explained:

> *You're sitting here, following with your imagination, a way of knowing and viewing. Each of you has this imagination. You've been growing it all your life. You are filled with stories and values. You have a panorama of imaginations, and you live by them. They have shaped you and your values.*
>
> *But here's the thing: I'm in education and I feel we are not reaching. We are not reaching with our learning spirits. Because if we are looking as we have been, speaking from our ecologies, what would our learning spirits say? Given our learning values and our places, what would we be reaching for? That's my question: What would we be reaching for? I don't think we've been reaching far enough for sister water.*
>
> *We carry this. We know. You are of this land. You are of this water. You are nourished by these beings. They are your community of life. As we sit here, we have a longing to vision something. Talk about that. Or tell a story. Talk about a story where you saw a glimpse of what you think we could be doing. Tell some of those stories.*

Participants worked in pairs then were fluted back to the group. Vicki shared her personal story of being introduced to the flute and being in the discipline of the wind—how she sought out a flute of her own and learned to play through learning to listen. She realized she was listening differently. She was available, not just to the visual ecology but to the sonic ecology. She shared her profound experience in Utah of realizing she wasn't just a thing; she was in a dialogic relationship to the acoustic place.

She became fascinated by the ways stories shape pedagogy, and how the ethnosphere is deeply integrated with the biosphere. She wondered, what are the legacies of those cultures and ways of knowing? Later, she was lost while seeking out the Parowan Gap, considered by some as the "Stonehenge" of Utah.

> *Walking up the cliff, I almost bumped into a whole wall of petroglyphs. Like a whole cosmology carved into the face of the rock. So I turned around and played in the gap. No more amazing acoustics: It was alive. I was listening and all kinds of things were making sounds.*
>
> *Those piles of rocks on the landscape—if you stand here at a particular time, Venus will rise in the gap. If you stand at another cairn, the sun will rise. This was written into the landscape. I realized I was both deaf and blind.*

Vicki read a portion of Cherokee author Linda Holgan's book *Dwellings: a Spiritual History of the Living World* (1996) drawing attention to "life writing" and "waking up the rake." Our work is our place of offering. Vicki ended with the questions:

> *What am I in the discipline of? What am I dearly, dearly trying to learn? What are the practices that enable me to practice the work that adds to the alchemy of change?*
>
> *We have the gift of the dream. We can dream, we can vision. But my sense is from my own journey. We need to engage in daily humble practices that get us to develop capacities that allow us to "wake up the rake."*
>
> *They are little practices, little things, that teach us that this is a teacher, that make us available to be prepared to be in discipline of, so that we engage in those practices pedagogical to our humanity that allow us to step into creation in different ways.*
>
> *What are you in the discipline of? What are your practices? We have things we do. What are they? What are you learning?*

Nuts'umaat: Working Together in a Group as One Mind

Elder Florence James shared a traditional teaching on coming together across differences to work as one.

> *I think my ancestors were very clever in the ways of they brought us together. They left us with a teaching that I'll share with you. Nuts'umaat means*

coming together for a purpose, working together in a group as one mind. When they did business with the villages, even if they disagreed, they still came together. You might not like what another person has to say, but we are taught that a person needs to say what they need to say. Agreeing to disagree and disagreeing to agree. At the end, the leader has to manipulate the words so that the group can work together.

We were told that we had to mind our manners and use words that are not hurtful, but meaningful; and we don't say words that won't bring people together.

Whether we were 10, 100, or 1000, the word was Nuts'umaat. This means "all together in the container, we become one." How do you do that? You have to think alike. We all ask that when we come in the door. The power is to be together as one, to be contained in one container. It could help you feel benefit from being together.

I say a lot to my allies where I come from. In the little town of Chemainus, we have had a lot of conflict because land becomes a commodity—real estate—so it means more to other people than it does to us. But it is our Life. That is where we get our life. And the land is fed by the water, kept alive by the streams, ponds, rivers, everything you can think of that has moisture. The earth benefits from how we treat the water.

What came up big was a memory: As little children, they gave us beautiful memories on the land. From that memory came a respect and a value that we put to the land, ocean, rivers, all living things, including humans. And so those teachings are what my great-grandpa used to run his big house. It's not one family that lives there. There could be 35 families that live there. How did 35 to 40 families live together? You can't even put two families together today, let alone 30 to 40! And 300 to 400 came at the time for potlatch.

So, when you come in the door, leave what's no use. Leave the negativity. Come in with the goodness of your thoughts and what you want to share. I was asked to share this to help us as a group.

Sampling of Reflections Shared by Workshop Participants

Participants were invited as pairs to create an ecology of the group's work together by placing their beeswax object in the centre of the circle and sharing reflections about their workshop experience and/or the beeswax creation that emerged during their conversations.

- *In my culture, the most important thing is to witness. I was reminded to witness today, because there's nothing more valuable.*
- *Sometimes you don't know what your discipline is. Sometimes there's a feeling of aimlessness in not having a discipline. Not rushing to find it but being conscious of not having one is a good place to start.*
- *When we came to talking about our discipline, I was very moved when he said his discipline (or practice) is "building community." I am a water baby and immediately thought water was my discipline, but I later realized that was wrong. I realized my discipline was light. It was a very profound realization for me. It is a special question to be asked, "what are you in the discipline of?"*
- *I made several things out of beeswax and ended up with nothing. It was more process than product. My partner and I started talking about different places but ended up at the same place. We had an instant connection with each other.*
- *My partner and I come from completely different backgrounds, but in the course of telling our stories discovered a lot of commonality. We're both at our happiest, calmest, most at peace, near water. And I think I discovered there's someone else in the room who is deeply angry about what's going on, and frustrated that it's so hard to change. That was an important discovery. That anger doesn't come to the surface very often. Only occasionally does it rise to the surface. But it was easy for us to call it out. We both recognized that we're fed up with what's going on. That's why we're all here. What are we going to do about it?*
- *We were initially struck by how different we are, so it is quite interesting to find out how similar we are.*
- *My partner came up with a sculpture and I came up with a lump! We found some common ground we didn't know was there. We're both wanting to find a way to help facilitate bringing First Nations knowledge about water back to other colonial aspects.*

- *We learned we are very connected through water despite living 1000 kilometres apart. We both had close encounters with cougars—peaceful and non-violent—which were transformational. People demonize the cougar, but they're just big kittens. How can we take the demons out of those we see as our opponents or people who disagree with us? We realized we are just tiny and that's okay.*
- *I feel the value of different perspectives, the value of every person's voice. Everybody matters. I'm beginning to value what I have to say and what I think. It is great to be able to share that. I haven't always valued my own voice.*
- *The sharing was in the emotion. Working in circles. As academics, we're all up here in our brains. But I felt the emotion of the walks in the woods, and her dog, and the elk—and the freedom and permission to speak about the things that make me really excited. It was palpable, you could hear it in the room. You could lean into the passion and love and joy. Being able to do that is so important in this work. We need to do more of that in this work—to give me energy to do the hard stuff. I really value being able to share that piece of it. One of the most powerful parts was sharing our vision for the future and feeling uplifted for the future and really grateful.*
- *There are so many negative things that are happening, so it was so exciting to talk about what's possible.*

Reflections and Closing

Kelly thanked the participants for trusting in a process in which they had no idea what would be involved. She indicated that her own vision and goals for the session were met. Participants came as a diverse group into a room and felt like their voices were welcomed and heard. People felt safe to share; everyone spoke and contributed. To get out of our heads, and connect with our hearts and with one another—those were her personal goals.

Kelly reflected on the idea of "de-demonizing" the "other," which was shared in the circle. This has to do with coming from different backgrounds, being angry or upset, and finding commonalities—to find that maybe even we are working toward the same cause, to realize that synergies between us are possible together.

What we did was trust a process unknown to all of us. Maybe the process was unknown even to Vicki because she's so iterative in what she does! What we're engaging in may or may not be explicitly about water and ethics, but we are doing the practice of being together. This practice is missing from most efforts to address water-related problems. Today we've started our practice of being together, as a prerequisite to working better together.

Kelly expressed her hope that participants would take something of value away from this workshop and bring it into the rest of the forum—perhaps being open or listening in a different way.

Perhaps the person beside you who kind of annoys you at first with his or her difference will inspire you to find that commonality or even strike a partnership. Who knows what will emerge when we are open.

Vicki spoke of our "ethical grain":

I think we're like old growth forest. Like tree in a wood, our ethical grain is woven into ourselves. By sharing our stories, we start to trace it and track it.

Our ethical grain is really important in this conversation. Giving voice to it.

Ethical relationality. Witness people speaking from their truth and grain.

She expressed how moving it was to witness how alive participants became in their gaze at each other, and the way gazes changed throughout the conversations.

You enacted yourself in ways that are really important. It is humble to go to a place where you are centered and speaking from your centre. We don't have a lot of time to do that and to witness each other in these ways that are really important. To be seen in these places that are quite precious, and have someone witness you speaking from that place is a tremendous gift.

This whole room was alive and animated—not an empty space. You filled it and gave voice to things that are enormously precious. I'm interested in how we create ecology in the hard work that we do. We created ecology together here in this place.

Elder Florence James shared closing words of thanks and prayer for all the participants.

Keynote Presentations

Working Together for Better Watershed Governance: Six Words

Keynote (Day One): by Merrell-Ann Phare (Centre for Indigenous Environmental Resources)

This session was recorded and the video can be viewed online at https://www.youtube.com/watch?v=1tFs7UtqkYg; presentation starts at 18:08.

During this opening keynote, Merrell-Ann Phare reflected on the concept of watershed governance through six words—change, build, ethics, Indigenous, consent, and hope—weaving a narrative about how we can work better together to create a more sustainable and just society. Merrell-Ann discussed how the path to watershed governance is complex and iterative; it requires us to rebuild trust, un-build common ways of thinking, work collaboratively between Indigenous and non-Indigenous governments, and devise a new water ethic to build public trust. The theme of finding a rhetoric of hope in water governance conversations stemmed from this keynote and emerged in later forum presentations.

1. **Change**. Merrell-Ann opened the session by reflecting on the current climate crisis and its implications for fresh water. Approximately 97 per cent of water on earth is salt water. While the remaining three per cent is fresh, only about one per cent is available for use. We don't have a lot of water, and we aren't succeeding in its proper management. In order to adapt to and mitigate the impacts of climate change as a society, we need to approach the problem collaboratively. Do we want climate change to be a monument to our stupidity or our creativity?

   We have the knowledge about what is necessary to work towards water governance. For example, the University of Victoria's POLIS Water Sustainability Project has established nine winning conditions for watershed governance, including co-governance with First Nations, a functional legal framework, and continuous peer-to-peer learning.[4]

2. **Build.** What is fundamentally required of us as we work towards water governance in the context of our new climate reality? The building or rebuilding of trust and relationships, and likely un-building some common ways of thinking. We need builders of many types; we all play different but necessary roles: bridge builders, silver bullets, decolonizers, energizers, synergizers, and reconcilators. Water governance presents an opportunity to re-build Canada through a re-envisioning as we find solutions to our new water and climate reality.

3. **Ethics.** To work better together, we need a new water ethic to build public trust. Merrell-Ann served as the Chief Negotiator for the Government of the Northwest Territories in their negotiation of bilateral water agreements in the Mackenzie River Basin. She reflected on a component of one agreement which concerned removing chemicals from the waterways. This surfaces the ethical question of putting scientific knowledge over personal comforts or health. Merrell-Ann shared a story to illustrate how this ethical dilemma manifested for a close friend who was undertaking chemotherapy for cancer treatment. The choice arises between the individual and the world; is it acceptable to add toxins from medication to our water systems? In the context of our new climate reality, no conversation should be off the table — no matter how ethically challenging.

4. **In-dige-nous**. Working together for watershed governance requires the inclusion of Indigenous people at the table. The word "Indigenous" can be broken into pieces, each with separate meanings that come together to guide us as we re-envision our new society. "In" means we are in this, and we must keep going. "Indi" reflects the need for independent, individual thought. "Dig" is interpreted as the need to dig deep to find solutions and take the time for the process. "Nous" means "we" in French, and includes "us" in English. Therefore, the sum of the pieces in

"Indigenous" set the imperative for working in partnership towards reconciliation with First Nations at the individual and societal levels, while reflecting both Canada's English and French heritage. It is an inclusive word. In water governance conversations, a first step can be learning the name of the First Nation you are working with, in their language.

5. **Co-everything**. At its core, watershed governance is about shared decision-making, and it recognizes an inherent need to work with First Nations on a nation-to-nation basis. "Co-everything" might manifest as "co-managing," "co-planning," "co-governing," "collaborating," or "co-negotiating." We need to challenge ourselves to redefine how we work together. This ultimately includes the commitment to "consent." Consent requires a rethinking of how we work with Indigenous Peoples. We must go beyond the duty to consult and accommodate as set out in s.35 of the *Constitution Act.* Instead, we must seek a deeper partnership based on consent, which can take many forms—from co-governance to co-planning.[5]

6. **Hope**. The fluid thread that connects each of these elements of watershed governance is a rhetoric of hope. As humans, we start and end in a watery world; we need to connect emotionally with water if we are to strengthen our governance work. To close her keynote presentation, Merrell-Ann expressed her hope for water governance and a new water reality by sharing an original poem, eloquently exploring water as life. A small excerpt follows:

   "There's too much now […] the waves roll off higher seas […] and lakes are blooming but not in a good way. […] We start in a watery world and we will end in this watery world […]. Why are you here? Because we have hope."

Chasing our Water Future

Youth Presentation (Day One): by Ta'Kaiya Blaney (Native Youth Children's Survival)

This session was recorded and the video can be viewed online at https://www.youtube.com/watch?v=1tFs7UtqkYg; presentation starts at 56:07.

An activist since a young age, Ta'Kaiya Blaney advocates for Indigenous rights, which she believes are crucial for Indigenous peoples to mobilize against climate change. Ta'Kaiya observed that feelings of powerlessness and despair are the most pervasive challenge Indigenous People face, stemming from loss of land, rivers, language, and wisdom. She has witnessed this in her nation around challenges with poverty and alcoholism.

Ta'Kaiya believes that programs providing resources and information can empower communities to construct their own future and solutions. If we try to conserve areas but fail to include voices and values of the grassroots—Indigenous Peoples, youth, and local citizens—we fail to inspire the excitement and effort of the people, which is crucial in making the program sustainable. Let our communities become the prototypes for the change we wish to see.

Ta'Kaiya acknowledged that she is not a scientist, but she knows the story of her people and the growing need for change. When making change, we understand that there is strength in numbers, and we can't move forward if we leave entire communities behind. Today, Indigenous Peoples are moulding tradition with outspoken advocacy, with climate posters in one hand and eagle feathers in the other. They are advocating to protect what they love, not out of fear and necessity but because they see beauty in opportunity. We need to bring together the old ways and new ways to shape our new future.

Writing and sharing songs enables Ta'Kaiya to share her identity, beliefs and inspiration around Indigenous and environmental rights, and to help her to find a new way forward. To close her presentation, Ta'Kaiya sang her song "Earth Revolution," which is part of an international youth movement and is about needing to change society's current path, and the importance of youth in this revolution.

Discussion: Ethical Directions and Youth Engagement in Water Conversations

A question-and-answer period was held after the opening presentations by keynote speakers Merrell-Ann Phare and Ta'Kaiya Blaney. Audience questions and contributions reflected a strong interest in ethical directions for action on water governance and general environmental issues in Canada.

Is pricing the best way to value water?

Value should not be assigned through pricing alone. The way we value water should reflect our fundamental relationship with it. For example, Merrell-Ann was told by an elder to introduce herself to each new body of water she meets. We need to value water ethically, and think of nature's needs first. Pricing water to reflect our costs to provide it to citizens makes sense, but commodifying water does not.

Regarding building relationships between Indigenous and non-Indigenous government, how do you get both sides to act as "one"? How do we find a "oneness" where we can all identify our similar concerns?

Collaboration is about creating a "one". It is a way to connect institutions and people, and to find a solution to move us in the right direction for all of us through discussion. Of course, collaboration is needed in all things, not just for water.

How do you create youth revolutionaries? Do you find that youth are interested in and sensitive to environmental and social justice issues?

Ta'Kaiya reflected that it is not just a question of what land we leave for our future children, but what kind of children we leave for our land. It is very important to get youth out into nature and to recognize youth as leaders. There is an ongoing issue of youth becoming disassociated from the natural world. But in youth conferences, Ta'Kaiya has noticed youth are aware of this disconnect and responding through youth activism in social justice and environmentalism. Digital media is an important activist tool to educate and engage youth.

Where does your inspiration come from to do your work?

Ta'Kaiya's inspiration comes from her heritage with the Sliammon First Nation, which instills her with empathy and an urgency to act. She described how she was rocked to sleep with her Nation's stories and the wisdom from her grandparents and elders. She is able to see the way her people used to live in comparison to today. It was her surroundings and support from her family that catalyzed her sense of need to do something about the issues facing her community.

Innovation in Watershed Co-Governance: The Mackenzie River Basin Agreement

Keynote (Day Two): by Merrell-Ann Phare (Centre for Indigenous Environmental Resources)

In her focused keynote, Merrell-Ann Phare explored the need, success factors, and operative details of collaborative consent with Indigenous Peoples, and the broader need for nested governance. The Mackenzie River Basin (MRB) Agreement and its subsequent bilateral agreements between provinces and territories illustrates a nested governance model for working together for water.

Three Drivers of Watershed Co-Governance

Three cross-cutting drivers are catalyzing support for watershed co-governance between Indigenous and non-Indigenous governments across Canada. All three also indicate a path forward to reconciliation.

1. **Nation-to-Nation relationships** are increasingly recognized as necessary in Canada. Prime Minister Justin Trudeau has stated that "no relationship is more important to me and to Canada than the one with Indigenous Peoples,[6]" and federal changes are underway to recognize nation-to-nation relationships regardless of the status of land claims.

2. **UNDRIP endorsed by Canada**. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was notably endorsed by Canada in 2010, with the statement from the Government of Canada that "We are now confident that Canada can interpret the principles expressed in the Declaration in a manner that is consistent with our Constitution and legal framework.[7]" Canada has also accepted the Truth and Reconciliation Commission's recommendation to implement UNDRIP.

3. **The Tsilhqot'in decision**. This precedent-setting case from the Supreme Court of Canada confirmed that "governments and others seeking to use the land must obtain the consent of the Aboriginal title holders.[8]" If the Aboriginal group does not provide its consent, then the government's only recourse when establishing that resource development is to ensure it can meet the justification test. While some wonder at how this requirement for consent applies to Aboriginal traditional (non-title) territories, the Supreme Court is—and has been for many years—sending a very strong message about the significance of Aboriginal rights in the Canadian federation and society. The Supreme Court is not prepared to allow these rights to be ignored in the pursuit of resource development.

In Canada, we are working under a colonial legacy: We have inherited a system built by colonizers, and our task is to fix that system. To change the discussion, we need become comfortable with a new language. We are not the colonizers or the colonized. We can redefine ourselves as partners and allies in eliminating the broken system we inherited.

Collaborative Consent and Cooperative Federalism

A collaborative consent process is where Indigenous and non-Indigenous governments work to achieve each other's consent through collaborative approaches tailored to the matter at hand. It is a long-term process requiring commitment by both parties to not walk away from the table. No one's power is "fettered" because each uses their power to choose to be at the table.

A commitment to be at the table doesn't mean we are undermining the constitutional obligations; rather, it means agreeing to stay at the table until there is a common solution. Collaborative consent could render First Nations formal consultation requirements unnecessary because Indigenous People are involved throughout decision-making processes and so the final result, by definition, includes their support and agreement. Attempts at collaborative consent are more common in the north. For example, in developing the Mackenzie River Basin Agreement inclusion of Indigenous Peoples was a priority from the outset. We need this to occur at national level through cooperative federalism.

Cooperative federalism involves the establishment of consensus-based tables of discussion and cooperation between provincial and territorial governments, such as the Canadian Council of Ministers of the Environment. Such tables work pursuant to cooperative arrangements such as bilateral memorandums of understanding, and they often work to harmonize their approaches to issues. If they cannot reach agreement, then the discussion item is delayed to another time more likely to result in a positive outcome. Or, if the table seeks to proceed against the wishes of some members, they weigh the cost of lost or damaged relationships against the benefits gained by proceeding.

Cooperative federalism is normal part of intergovernmental diplomacy. The challenge is that Indigenous Peoples are not included at these tables, apart from in some processes in Northern Canada. Northern governments in Canada approach partnerships with Indigenous governments most successfully through the drafting of legislation, policies, and plans between multiple provincial and territorial governments and Indigenous governments.

A Model of a Mutual Consent-Based Approach from the GNWTs Bilateral Water Agreement Negotiations

Negotiations for the Mackenzie River Basin (MRB) Agreement[9] took place between 1997 and 2015 between all provincial and territorial jurisdictions within the basin. It established high level principles and created an obligation for each jurisdiction to create bilateral agreements across borders. Between 2011 and 2015, two bilateral agreements were completed between the GNWT and Alberta and the GNWT and British Columbia.[10] These nested agreements were necessary to the larger agreement and provide the operative framework for deciding how multiple jurisdictions can work together for water in the MRB.

The example set by the Government of Northwest Territories in its mutual consent-based approach to decision-making in the bilateral water agreement negotiations could apply to other initiatives and resource management fields. The model builds support throughout a mutual consent, interests-based

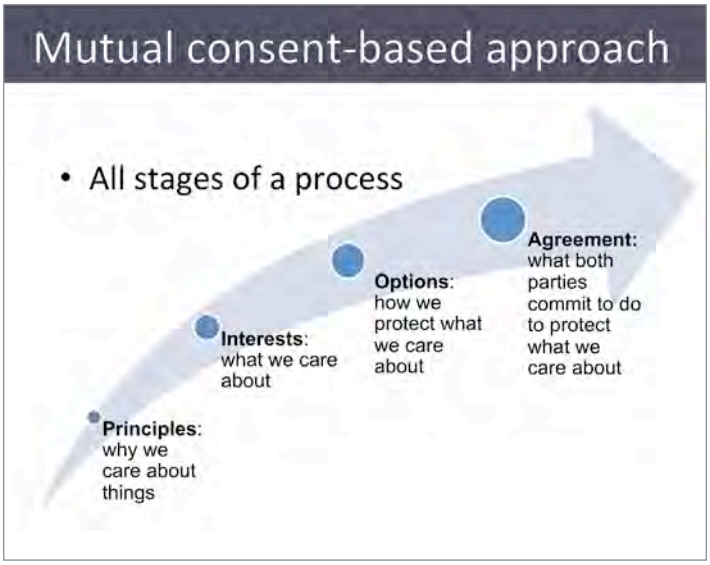


Figure 1: Stages of the mutual consent-based approach in water agreement negotiations. Source: Merrell-Ann Phare and Government of the Northwest Territories, 2016.

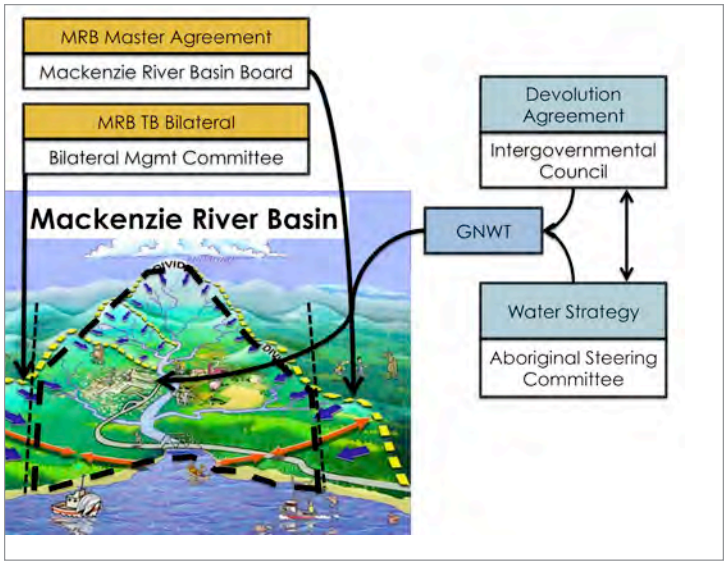


Figure 2: Nested watershed governance in the Mackenzie River Basin. Source: Merrell-Ann Phare and Government of Northwest Territories, 2016.

process and engages everyone in open dialogue in four areas (see Figure 1). Interest-based processes are useful because they assume all interests are equal and must be satisfied—including the values of smaller, downstream jurisdictions.

The multi-tier, multi-jurisdiction governance structure operating in the Mackenzie River Basin exemplifies the type of nested structure that could be relevant in other transboundary watersheds (see Figure 2):

- GNWT worked in partnership with the federal and Indigenous governments in NWT to develop *Northern Voices, Northern Waters: NWT Water Stewardship Strategy*[11] and an Aboriginal steering committee to provide ongoing direction on water issues.
- In 2014, the Government of the Northwest Territories and the federal government negotiated a devolution agreement so the GNWT could act with the same power and responsibilities as a province, rather than operating under federal control. The devolution included responsibilities for water.
- At the basin level, the Mackenzie River Basin Board operates pursuant to a basin-level water agreement, the *Mackenzie River Basin Transboundary Waters Master Agreement*.
- At the provincial/territorial level, bilateral water agreements (with supporting management committees) deal with transboundary waters. These agreements follow the principles set out in the *Master Agreement*, so nested approaches are used. Within the NWT there are structures and committees that feed into the basin and transboundary entities. Merrell-Ann emphasized that linkages and flows in communication between nested entities are necessary for success.

Closing Remarks: Divorce Versus Marriage

Merrell-Ann introduced the metaphor of divorce versus marriage in the context of Indigenous and non-Indigenous government relations. The "divorce" model perpetuates thinking about how power is shifted from one side to the other, and the idea that if one side benefits the other loses. This is fundamentally contradictory to the original intent held by Indigenous peoples regarding treaties. The "marriage" mentality encourages working together and not walking away—in other words, collaborative consent.

Watershed governance is a way to re-build our nation. Water touches everything we do, as does nested governance. Watershed governance seen through the lens of collaborative consent is a way to conduct the broader conversation, helps us meet our commitments under UNDRIP, and gives us hope for reconciliation.

Plenary Panel Presentations

Evolving Collaborative Watershed Governance in B.C.: Stories from the Front Lines

Plenary (Day Two): Moderated by Anna Warwick-Sears (Okanagan Basin Water Board), with presentations from Natasha Overduin (University of Victoria's POLIS Project), Tim Kulchyski (Cowichan Watershed Board & Cowichan Tribes), Julie Pisani (Regional District of Nanaimo), Wayne Salewski (Nechako Environment & Water Stewardship) & Theresa Fresco (Fraser Basin Council)

Across B.C., many local watershed champions are taking action to improve freshwater protection and improve capacity for working better together. This panel explored the evolution of collaborative watershed governance in B.C. through a regionally and culturally diverse panel of watershed champions. Presentations included research-based reflections on key actions or factors to support successful watershed governance in B.C. and three case studies of watershed governance innovation from the Regional District of Nanaimo, Cowichan Tribes/Cowichan Watershed Board, and Nechako Watershed.

The Many Forms of Watershed Governance *Anna Warwick-Sears*

Watershed governance exists at many levels of decision-making and in many different forms. It may be nested down to very small entities or applied across multiple jurisdictions. As an evolving concept, watershed governance can take very different forms depending on the context in which it is applied.

Advancing Progress Towards Watershed Governance in B.C. *Natasha Overduin*

Two major drivers of change are advancing progress on watershed governance in B.C.:

1. **B.C.'s shifting cultural and legal landscape.** A top priority emerging from the *Watersheds 2014 Forum Consensus*[12] was the need for a functioning legal framework to support watershed initiatives. British Columbia now has a new legal framework through the *Water Sustainability Act*, which better enables new approaches to water management and decision-making. Although the *WSA* does not yet achieve what the *Watersheds 2014 Forum Consensus* articulates and remains problematic in core areas (such as ensuring full recognition of Aboriginal rights and title related to water), the act does present new opportunities for building better partnerships. The *WSA* also forms an important part of the backbone for improved water management and decision-making to ensure better protection of basic ecological function. In parallel, Indigenous laws, title, and rights are being asserted in powerful new ways that are shaping how water is governed.

   Our attitudes, awareness, and collective water ethic are also shifting. Recent public opinion research suggests that British Columbians care deeply about their fresh water and believe the current approach to management and decision-making must be improved.[13]

2. **Local commitment and capacity to lead new approaches.** Real desire and vision at the local level is required to prevent constant stalling on watershed plans and initiatives. Identifying capacity needs and building capacity in core areas is also critical—around knowledge, skills, networks, strategic planning, ability to secure funding, and organizational leadership.

What is needed to accelerate progress?

A strategic understanding of both the formal rules and the informal opportunities to influence decision-making or water-use activities.

Relationships aren't just *desirable*, they are *necessary*. Good relationships are characterized by developing mutual goals, respecting cultural and organizational protocols, setting accommodating timelines, compromising, sharing the workload and pooling resources, and abiding by commitments. Relationships and shared understanding between Indigenous & non-Indigenous partners is especially important and necessary.

Watershed governance happens one step at a time. Each step provides the foundation for sharing authority and decision-making and ensuring plans are enforceable (see Figure 3). In reality, advancement through these steps is not linear and is often slower than we might like. Holding the process together is a commitment to meaningful collaboration and partnership.

Figure 3: *Stepping stones of watershed governance. Source: Brandes, O.M. et al. (2016). Illumination: Insights and Perspectives for Building Effective Watershed Governance in B.C.*

Governance Evolution in the Cowichan Watershed *Tim Kulchyski*

Growing up in the Cowichan, Tim Kulchyski's family would tell him stories about the water, but he didn't always know when they were "teaching moments." Today, Tim still connects to these teachings. Speaking from his perspective as a biologist and member of Cowichan Tribes and the Cowichan Watershed Board, Tim emphasized the importance of working together in partnerships. He has learned it is best to focus and work towards one prominent issue, and in the Cowichan this has manifested as driving towards co-governance.

Tim reflected on the long-standing concern for the health of water and salmon in the Cowichan—these concerns are a major driver for the Cowichan Watershed Board as it seeks to develop governance solutions. The Cowichan Watershed board explicitly embodies a co-governance approach by bringing together co-chairs from the Cowichan Valley Regional District and Cowichan tribes and four appointees from each entity. Relationship-building, the development of trust, and a commitment to collectively determine solutions are key to their success.

Regional District of Nanaimo's Drinking Water & Watershed Protection program *Julie Pisani*

A few years ago, politicians and the community at large in the Regional District of Nanaimo (RDN) recognized the that a local, long-term understanding of water resources was needed to make smart decisions that prevent environmental degradation and the associated costs. In 2008, the RDN created its Drinking Water & Watershed Protection (DWWP) program with the purpose to coordinate education, science, and planning for long-term, adequate clean water supply for communities and ecosystems in the region.

A reliable funding source for the DWWP program was established through the collection of an annual parcel tax from both urban and rural parcels. This initial and potential ongoing source of funding has attracted collaboration between the RDN and senior government and lays the foundation for the RDN to build partnerships with First Nations and explore governance options. A key point is that stable funding often attracts more funding (see Figure 4).

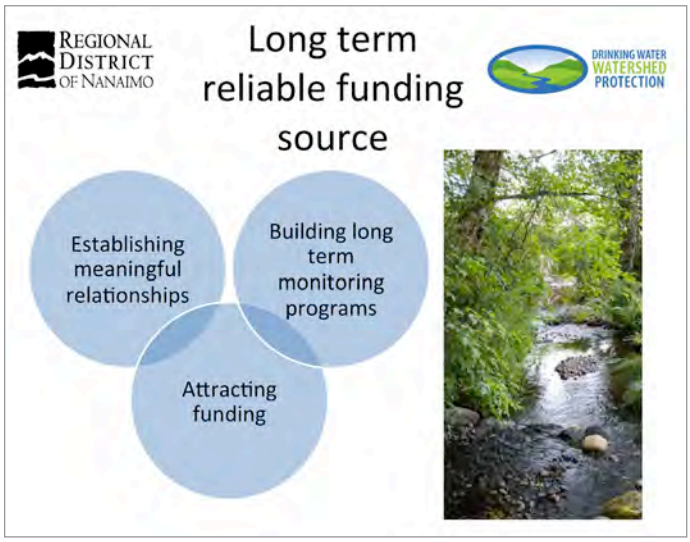


Figure 4: *Key features of the RDN's collaborative watershed governance model. Source: Pisani, 2016.*

The DWWP program is committed to involvement of all relevant actors, including municipalities, stakeholders, and First Nations. Julie emphasized that First Nations are rights holders, not simply stakeholders, which dictates the importance and necessity of working together with the local Naut'sa mawt Peoples. While it takes time to build relationships and trust, the RDN hopes to work with First Nations on their water initiatives in the long-term.

Water Strategy and Youth Education in the Nechako Watershed *Wayne Salewski*

The Nechako Watershed in central B.C. has experienced heavy resource extraction and industrial pressures from agriculture, mining, forestry, and hydro-electric development. The cumulative impacts of historic and ongoing development are taking their toll on the watershed through impacts to water quality, fisheries, landscapes, wildlife, and cultural and spiritual practices.

In response, a *Nechako Watershed Strategy* is being developed by the Nechako Watershed Roundtable.[14] The strategy has four main aims: 1) to communicate issues and concerns in the Nechako watershed; 2) to highlight current projects, plans, and strategies being undertaken; 3) to propose actions to address the issues and concerns raised; and to 4) inspire commitments by various organizations to implement the actions proposed. Established in 2015, the Nechako Watershed Roundtable provides strategic direction on issues related to Nechako water stewardship. While the Roundtable has no delegated authority, it is guided by a core committee that serves as an operational arm to help the Roundtable realize its vision through the advancement of projects. To date, work on the *Nechako Watershed Strategy* has involved establishing a technical advisory committee, organizing a number of research and outreach projects to initiate the first phase of development, and holding a first round of community meetings to ground truth findings with observations and input from communities.[15]

Additionally, organizations like the Nechako Environment and Water Stewardship Society (NEWSS) are helping to promote local water stewardship through education programs. In partnership with public schools and the University of Northern British Columbia, NEWSS is creating diverse opportunities for school children to experience local wetlands and learn about the endangered Nechako white sturgeon at the local fish hatchery. By exposing local children to conversations about watershed management and sustainability, NEWSS hopes to achieve momentum as these children pass on their knowledge to their families. With increased public awareness, opportunities for improving management and decision-making practices will expand.

Keys to Success and Case Studies for Collaborative Watershed Governance in B.C. *Theresa Fresco*

Theresa Fresco shared research findings from the Fraser Basin Council (FBC) study[16] on the effectiveness of five watershed governance authorities: 1) Cowichan Watershed Board, 2) Okanagan Basin Water Board, 3) Coquitlam River Watershed Roundtable, 4) Shawnigan Basin Authority, and 5) Shuswap Watershed Council. FBC considered each case's unique background and context, including factors that led to its formation, governance structure, board membership, board committees, financial support, and terms of reference, including vision, mission, and guiding principles.

Four success factors for effective collaborative watershed governance emerged across all case studies:

1. **Enabling policy framework.** To establish clear roles, responsibilities, and commitments by various jurisdictions.
2. **Organization design**. A contextually based organizational structure is needed. For example, forming a roundtable or board that has a clear and common purpose, procedures, and guiding principles.
3. **Capacity and resources.** Funding should be established for core needs and projects, and a manageable geographic scope must be set.
4. **Human-related success factors** such as effective leadership, mutual respect and trust, and a long-term commitment to the process and outcomes are required.

First Nations Water Planning and Governance

Plenary (Day Two): Moderated by Deana Machin (First Nations Fisheries Council), with presentations from Lana Lowe (Fort Nelson First Nation), David Schaepe (Stó:lō Research and Resource Management Centre/Stó:lō Nation) & Val Napoleon (University of Victoria Faculty of Law)

First Nations across British Columbia are leading a range of water planning and governance arrangements, including water strategies and water laws. These arrangements and tools enable First Nations to exert authority in their watersheds, and ensure the consideration of their traditional values, language, and title and rights.

In this plenary, the moderator first reviewed the legal context for First Nations water planning and governance arrangements in B.C. The second part of the session explored two case studies of First Nations' approaches to water governance and management in their territories, with speakers from the Stó:lō Research and Resource Management Centre and Fort Nelson First Nation. An introduction to the scope and limitations of Indigenous laws as a tool for water planning and governance brought the plenary to a close.

First Nations Water Governance and Management in B.C. *Deana Machin*

Aboriginal rights and title arise from First Nations' own laws and customs and relationship to the Creator since the time prior to colonization, and are often called "inherent rights." First Nations have their own inherent jurisdiction and authority for the land, and the responsibility to protect, conserve, and sustain resources for future generations.

Water sustains the core cultural needs of First Nations communities by providing food and medicines, providing opportunities for economic development, and supporting fishing and hunting and broader environmental services. In this relationship, First Nations are working to apply their values, laws, and perspectives to their lands and waters, with the aim to engage in the future with non-Indigenous governments on reconciling rights and jurisdictions.

There is currently no recognition of Aboriginal rights or First Nation jurisdiction and authority in B.C.'s *Water Sustainability Act* (except indirectly through the usual s.35 constitutional obligations). However, it does open the door to the potential for a more robust partnership approach and perhaps co-governance with First Nations, which can yield mutual benefits for Indigenous and non-Indigenous governments. For example, the First Nations Fisheries Council is supporting on-the-ground shared decision-making initiatives pursued at the watershed scale, which are intended as a starting point for non-Indigenous governments to recognize issues around jurisdiction and authority.

First Nations Capacity to Engage in Water Planning and Governance

The First Nations Fisheries Council recently partnered with the Centre for Indigenous Environmental Resources to conduct a systematic review of Indigenous-led watershed initiatives and co-governance arrangements in B.C.[17] The project intends to 1) identify the capacity gaps of B.C. First Nations and 2) help shape the future of water and watershed planning and a new watershed governance regime in B.C. So far, the project has demonstrated a widespread lack of capacity for First Nations to engage meaningfully in water conversations. With enough capacity, most First Nations indicated an interest to engage in watershed planning, both internally and collaboratively with other nations. Next steps for the project include developing specific water governance, planning, and management strategies with interested First Nations, which will lay the foundation for future co-governance arrangements with non-Indigenous governments and stakeholders.

Stó:lō Cultural Relations and Management Frameworks for Water *David Schaepe*

What Stó:lō people know as S'ólh Téméxw (meaning "our land; our world") encompasses the Lower Fraser River watershed and extends to south-central Vancouver Island. As the "People of the River," Stó:lō identity is closely linked to water, or *qó* in Halq'eméylem.

Central to Stó:lō cultural heritage is water, and how to take care of water from an Indigenous cultural perspective. The Stó:lō recognize that water

Figure 5: *Stó:lō perspectives on shxwelí – a life force found in everything. Source: Schaepe, 2016.*

is alive and defines the relationships between people and place (see Figure 5). There is an old phrase in Halq'eméylem: "S'ólh Téméxw te íkw'élò. Xólhmet te mexw'stám it kwelát," which means "This is our land. We have to take care of everything that belongs to us." This statement continues to guide modern Indigenous leadership, yet stewardship remains a critical aspect of watershed management that is often overlooked.

The Stó:lō approach to water comes from an understanding of how the world came to be. It includes the journey of *Xexá:ls* and their transformations for "making the world right." The land in S'ólh Téméxw is a cultural landscape. Stó:lō people recognize the land is embedded with learning, teachings, and principles that are operative; the land informs them how to maintain balance and relationships in a good way.

The supernatural inhabitants of Stó:lō water systems, which embody the Fraser River and Cultus Lake, are integral parts of this land—and waterscape. For example, salmon, or *sthéqey*, are rooted deeply in Stó:lō culture. Stó:lō people say that their bones are made of salmon. *Smílha* is the winter dance, a fundamental practice that helps keep the Stó:lō in a state of well-being.

Watershed and Heritage Stewardship in Stó:lō Territory

Major shifts in hydrology, land use, and management have unfolded in Stó:lō territory since colonization, particularly the draining of Sumas Lake since 1924 and diversion of the Chilliwack River. Draining Sumas Lake deteriorated the health of Stó:lō People in that community, since the lake was central to their well-being. A Sumas Elder once stated that "when they drained the lake, they drained the heart out of our people."

In response to pervasive cultural stress and land-use conflicts centred around water, the Stó:lō created a *Heritage Policy Manual*[18] to set out the terms of their cultural needs for water quality and use. The manual fills a regional policy gap, as there is no counterpart policy in the Lower Mainland. This policy and its counterpart, *S'ólh Téméxw Use Plan*,[19] are applied as primary screening tools for hundreds of development applications the Stó:lō receive each year. Most important is that the manual is built from the cultural foundation of Stó:lō People, and is being put into action as a way for the Stó:lō to manage water, watersheds, land, resources, culture, and heritage as interconnected with their territory.

Fort Nelson First Nation: A History of Oil and Gas Interests *Lana Lowe*

The path to water governance is complex and iterative, involving multiple jurisdictions and rounds of refinement before the "right" model is achieved. The story of Fort Nelson First Nation's (FNFN) journey towards water governance is no exception, although perhaps fraught with more barriers and obstacles related to the rapid development and intensity of major liquefied natural gas (LNG) interests in their territory.

The Fort Nelson First Nation are Dene and Cree peoples whose traditional territory encompasses the Southern Denendeh and Liard River watersheds in northeast British Columbia. A network of rivers flow north through their territory into the Mackenzie River Basin, connecting them to their relatives across the borders of Alberta, Yukon and the Northwest Territories.

The nation has experienced pressure from the oil and gas industry since the 1950s, and accelerated heavy pressure from the LNG industry in the past decade. In 1961 the creation of an Indian reserve forced the community from their villages and onto a small area next to the highway. It is said that everything changed when they were pulled off the river.

A time-lapse animation created by the FNFN

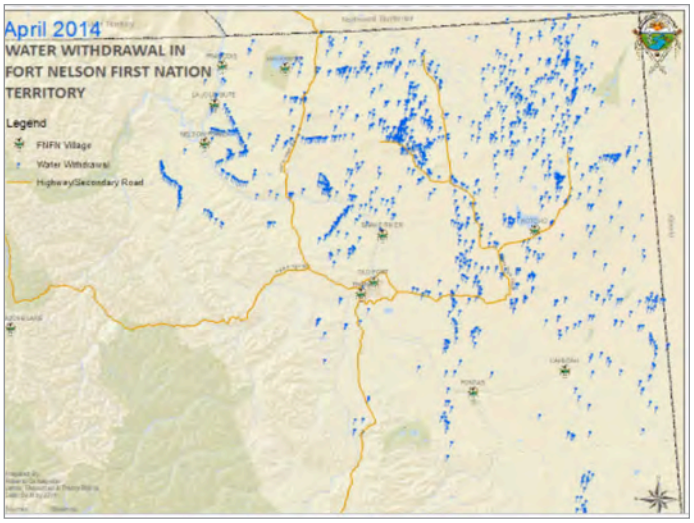


Figure 6: *Extent of water licence withdrawals in Fort Nelson First Nation territory by April 2014. Source: Fort Nelson First Nation Lands Department, 2016.*

Lands Department illustrates the outburst of water licence withdrawals for shale gas development in their territory in just an eight-year period[20] (Figure 6). Each dot on the map has a real impact on the rivers, lands, and people of Fort Nelson First Nation.

Fort Nelson First Nation: Perseverance for Water Governance

The nation was concerned not only with the amount of referrals, but also with the fact they didn't have a meaningful say. They became more politically active and commissioned the video *Tú ni tthéh: We need the water*[21] to share the concerns of their Elders. The video elucidated two messages from the Elders that provide guidance for Fort Nelson First Nation as they move forward: 1) we have the right and responsibility to govern our homelands, and 2) we must honour our treaty and work together.

Fort Nelson First Nation's work towards water governance is guided by four principles:

- We are stewards of our land and our treaty.
- We hold a central role in the governance of our homeland, including watershed governance.
- We sustain the cultural well-being of the people and our deep ties to the water resources in our lands.
- We have stewardship obligations to our relatives down north.

Despite the resilience of its people and guidance from its Elders and central principles, FNFN's pursuit of water governance has yielded mixed results. Fort Nelson First Nation's negotiations with industry stagnated with the decline of oil and gas interest in their territory in the last few years. Negotiations with the Province are also complicated and disheartening. In 2015, their bilateral government-to-government reconciliation table was disbanded, and in September 2016 all existing FNFN-B.C. agreements were terminated. To date, no follow-ups have occurred around their requests for engagement with the Province in water management.

Yet, positive outcomes have occurred through some initiatives. FNFN provides skills-building camps for children in the community to connect to the land and conducts environmental monitoring and restoration initiatives. Their legal defense victory in September 2015 was significant: The Environmental Appeal Board cancelled the Nexen water licence on the basis that the science behind the authorization was flawed and the Province failed to consult in good faith with Fort Nelson First Nation.[22]

The nation remains mindful of the two guiding principles shared by its Elders, and hopeful of finding a better way forward for its water.

Introduction to Indigenous Laws
Val Napoleon

It is helpful to think of Indigenous law as a distinct mode of governance—a collaborative human endeavour that forms the backdrop to political and social life. Indigenous law concerns the land, water, trade, and so forth—all the realms of human life. Traditionally, most Indigenous People are non-state oriented. They were, or still are, organized as decentralized societies and work through institutions that look very different to how Western society is organized today.

Sometimes when we talk about Indigenous law, there is an assumption of harmony. But Indigenous law is against a background of disagreement and interpretation. We must resist romanticizing Indigenous laws and resist notions of harmony. They are good aspirations but not necessarily practical. Also, there is a failure to comprehend the wholeness of Indigenous laws that continues to undermine their legitimacy and continues colonization.

Indigenous law hasn't gone anywhere, but the ground is uneven with gaps and distortions. There are places where Indigenous law is not operating like it was in the past. A thoughtful re-building of Indigenous law requires rigour, critical thought, and systematic engagement. For example, the Indigenous Law Research Unit at the University of Victoria has worked across different areas of the law and continues to learn from its partnerships and communities.

With a restatement of Indigenous laws, we must build critical theories to deal with the inevitable contradictions that come up when humans work together. Approaches to Indigenous laws must recognize its promise as well as its possibility for failure and corruption.

What Does it Take to Restore the Connection to Indigenous Laws?

Canadian law is taken for granted. Although often invisible, it influences everything around us—from law and order to how we own property. There is an expectation that Indigenous law will look like Canadian law or be similar in structure and approach. This is not necessarily the case. In fact, much work is needed to fully restore Indigenous law and, at the very least, to better understand its legitimacy. You need a way to change the law and a way to apply it. When it is broken, what do people do?

The scope and depth of Indigenous law creates its potential for debate and discourse (and even disagreement) that is critical for a healthy Canadian society. But there are consequences to not engaging fully. One is instrumentalization—essentially reclosing deliberations in order to fill an immediate political end. We need to set our short-term political ends aside and deal with them after the hard work of restoring Indigenous laws. Another consequence is law by declaration. Again, you need to know when the law is broken. Sometimes there is a failure of law when it becomes oppressive. Law needs to be held to standards.

No matter what methodology is used for articulating Indigenous laws, you must cite your sources. Whether it is an Elder or another source, people must be able to review that source and come to their own conclusions. All of the questions that arise (for example, who is "heard") have to come from a transparent process.

PHOTO: JENNIFER SWIFT

Breakout Discussions

Understanding Applications of Indigenous Water Laws

Concurrent Breakout (Day Two): Facilitated by Deborah Curran (Faculty of Law, University of Victoria), with presentations by Val Napoleon (Faculty of Law, University of Victoria), and Sarah Alexis (Okanagan Nation Alliance)

Articulation and application of Indigenous laws is an increasingly recognized strategy for First Nations communities pursuing water initiatives. This session provided an update on the work of the University of Victoria's Indigenous Law Research Unit and explored how Indigenous water laws can be used in conjunction with colonial laws to advance First Nation's sovereignty and watershed sustainability.

Speakers first reviewed the methodologies, processes, and aspirations for defining Indigenous laws. The second part of the session highlighted two recent initiatives where First Nations communities in B.C. are defining their own water laws: 1) through the research project "Water Laws: Lessons from Indigenous and Colonial Stewardship" and 2) through the Okanagan Nation Alliance's water strategy. The session concluded with a question-and-answer period focused on effective approaches for applying Indigenous laws.

Methodologies for Articulating Indigenous Laws *Val Napoleon*

Val Napoleon opened the session by introducing the work of the University of Victoria's Indigenous Law Research Unit (ILRU).[23] ILRU's vision is to honour the legal traditions of Indigenous societies and assist in the identification of legal principles that may be applied today. The research unit works in four main areas: 1) harm and injuries, 2) gender and Indigenous law, 3) child welfare, and 4) land and resource governance. Val next reviewed the guiding methodologies and processes for defining Indigenous law, which are employed by the ILRU in its diverse projects.

There is no quick-fix solution in articulating Indigenous laws. Law never interprets itself, and it must be relayed in a way that is accessible, understandable, and applicable. Across Canada, the aspirations of Indigenous law include fairness, community safety, and inclusion.

Every project for articulating Indigenous laws pursued by the Indigenous Law Research Unit begins with a specific, concise research question and a community workshop to provide instruction in utilizing different methodologies. The stories will tell you different things depending on what questions you ask, so it is important to view the stories in this context as "tools for thinking." Guided by a clear focus for the initiative and primed with skills to articulate their laws, community members can then move forward in the research process.

The research scope may involve anything that is publically accessible, and typically comprises 40 to 100 stories supported by a systematic critical analysis. Key questions may include: "How did you solve the problem?" and "Who was involved?" Once the stories are analysed and synthesised, the results are discussed in small working groups with the community to ensure they understand their own laws and governance. The ILRU then creates a report or case that belongs to that specific community.

Even the short stories are complex and require careful interpretation. The entire process is very intensive, and typically takes eight to 10 months until completion. Relationships are of course fundamental.

But what happens when we don't comprehend the whole concept of Indigenous law? When researchers analyze the stories, they must be cautious about integrating themselves into the narrative. They have to clarify and unpack all the definitions for each community. For example, by asking: "What do you mean by respect?" or "What has legitimacy?"

Indigenous law has the ability to operate in the world today; every jurisdiction has more than one system of law in place. Each question of articulating Indigenous law starts with examining the problem and considering what resources exist, in your

community or elsewhere, to solve that problem. Ultimately, we must strive to look for the connections between our systems of law and resist attempts at fragmentation.

Water Laws: Lessons from Indigenous and Colonial Water Stewardship *Deborah Curran*

The "Water Laws: Lessons from Indigenous and Colonial Water Stewardship" project is a collaborative research initiative led by the University of Victoria's Indigenous Law Research Unit that will work over the next three years in three B.C. regions where water use is an issue: the Similkameen Valley, the Cowichan Valley, and the Nemiah Valley. The project intends to assist First Nations communities in each region to highlight their own water laws. Once the laws are defined, they may lead to the creation of new acts or plans.

The research team will also interview agriculture sector water rights holders and water utility staff. This research will uncover how these sectors understand and use their water rights, and how they adjust to changes in stream flow in the context of the new *Water Sustainability Act* to demonstrate how watershed communities adapt and share water in times of shortage. Reviewing the colonial water laws alongside the Indigenous water laws in each watershed is intended to help bridge the two law systems and move towards collaborative watershed stewardship and planning between Indigenous and non-Indigenous communities.[24]

Opportunities for First Nations' Leadership around B.C.'s Water Sustainability Act

Diverse opportunities exist for First Nations' leadership around elements of B.C.'s *Water Sustainability Act*. For example, nations may take action on better understanding the environmental flows regime of their local watershed by developing a program to record flow levels and seasonal patterns. Subsequently, this would involve defining the rate of environmental flows that are required to meet their cultural needs, and communicating this to the Province. First Nations could also develop monitoring programs to assess the health and abundance of fish and other aquatic organisms. Again, the nation could inform the Province of the acceptable critical water levels for fish survival in their watershed.

First Nations also have a critical role in developing strong watershed planning processes. But, you cannot simply extract Indigenous laws and "plug them into a water sustainability plan." Indigenous law is a distinct mode of governance that recognizes human dignity and agency, and it must be taken as seriously as Canadian law.

Okanagan Nation Alliance Water Strategy *Sarah Alexis*

In 2014, the Syilx (Okanagan) Nation released its water declaration to outline the responsibility of reciprocity and intrinsic relationship between water and Syilx peoples. The declaration asserts that Syilx People must be at the forefront of all water planning, protection, and operational processes, including water allocation and hydro-power generation in their territory.[25]

The Syilx Nation has also developed a water strategy to help address water issues and describe how to properly protect and manage water use and allocation, incorporating Syilx principles and practices associated with water stewardship. The strategy intends to improve water management in Syilx territory and ensure that clean, flowing water is respected and available for all living things. The Nation initiated work on the water strategy through rounds of community meetings, and is currently in the process of developing sub-basin management plans informed by Syilx traditional ecological knowledge.

Discussion: Approaches to Applying Indigenous Laws

Participants' questions and contributions sought to clarify the role of stories in Indigenous law and what to do when Indigenous law is established.

The Tsilhqot'in Nation v. British Columbia decision is a great read. Stories were a large part of that case. After three years of listening to stories, Judge Vickers took care to speak to each story to make it easy to see the title. Can you speak to the role of stories in Indigenous law?

Practices and stories are directly related to lineages. Much of Indigenous law rests in the hands of Elders. In the Cowichan region, when there was a decision to be made, the Elders would meet to discuss protocol. Elders would be selected based on knowledge and location. But the problem today is that there are few Elders left.

The Indigenous Law Research Unit has had these

conversations with many First Nations. Each Nation has different decision-making protocols. The role of the Elder is based on the type of issue at hand. ILRU projects start with publicly available information and the researchers do not go to the community until they are invited. There is often a lot of information that First Nations do not want to share. That is up to them. Stories are one resource of many; human interactions, song, dance, and art are all ways to observe and record law. Indigenous law is different from Indigenous cultural practices. We have so much to learn and it all needs to be unpacked.

What do you do when you establish what the Indigenous law is? How do you apply that with people or companies who do not follow the Indigenous law?
It is effective to work through relationships to enforce law and to increase public awareness. Once Indigenous law is recognized, it can be enforced. Then it doesn't come down to individual belief. For example, Canadian law changes over time, and so does Indigenous law. We have to keep talking about Indigenous law as "law."

Canadian ICCAs & Biosphere Reserves: Indigenous Governance Applications for Watershed Governance Innovation

Concurrent Breakout (Day Two): Facilitated by Eli Enns (ICCA Consortium) & Monica Shore (Mt. Arrowsmith UNESCO Biosphere Reserve)

Collaboration and innovation between different models of watershed governance can be a path to reconciliation in Canada. This session explored the application of traditional governance values and principles in the context of watershed governance by looking at emerging trends in collaboration between ICCAs (Indigenous Peoples and Community Conserved Territories and Areas) Tribal Parks and UNESCO Biosphere Reserves. The session concluded with a question-and-answer period exploring applications of these models.

Reconciliation through Watershed Governance: "Tribal Parks" *Eli Enns*

The Nuu-chah-nulth People of the west coast of Vancouver Island have a rich history of watershed governance innovation, guided by their cultural governance values and pursuit of peaceful reconciliations with non-Indigenous groups. Speaking from his experience as a Nuu-chah-nulth person, Eli Enns suggested that this reconciliation occurs in two ways: 1) within our species community (our human society) and 2) between ourselves and the broader non-human species community.

Meares Island Tribal Park is a historical example of watershed governance innovation for Tla-o-qui-aht Peoples, one of the fourteen Nuu-chah-nulth nations. In the mid-1980s, the logging company MacMillan Bloedel Ltd. acquired permits to log 90 per cent of the old-growth forests that comprise Meares Island—a vital bio-cultural landscape in Tla-o-qui-aht Nation territory. Yet, by proclaiming the island a "Tribal Park" in 1984, Tla-o-qui-aht leader Moses Martin ensured the protection of Meares Island into perpetuity. While the concept of a "Tribal Park" was not well defined at the time, it is now understood as a "watershed governance entity" and represents a progressive strategy for First Nations and local communities to assert sovereignty at the watershed scale.[26] Building off the conceptual platform laid by Moses Martin over 30 years ago, the Tla-o-qui-aht Nation is working with the local peoples in Tofino to establish relationships outside the traditional model of economic development.

Nuu-chah-nulth Traditional Governance Values

For Nuu-chah-nulth People, totem poles are visual and tactile representation of traditional values and principles. Totems form their constitution; they provide rules for interactions between humans and other species. At the top of a Nuu-chah-nulth totem pole is *Iisaak*, represented by a sun and moon crest. *Iisaak* is a core governance value and natural law for the Nuu-chah-nulth, meaning to respect, appreciate, and act accordingly.

When Moses Martin was developing the Tribal Park concept for Meares Island in 1984, the Tla-o-qui-aht gathered and spoke about *Iisaak*. They asked, How do we blockade in a respectful way? The nation resolved to blockade in a way that was not confrontational, but that was obedient to natural law and with the intention to build common ground and understanding with the loggers.

Indigenous Peoples and Community Conserved Territories and Areas (ICCA) Consortium

In the early 1990s, international conventions recognized the extinction events happening on earth and the correlations between areas of reduced biodiversity with declining cultural diversity, and vice versa. In particular, the United Nations Convention on Biological Diversity argued that whatever Indigenous Peoples are doing to steward biodiversity, they must be supported. In 2008, the International Union for Conservation of Nature answered that call by creating the Indigenous Peoples and Community Conserved Territories and Areas Consortium (ICCA). The ICCA Consortium provides a network to support Indigenous communities so they can connect with worldwide associations and leverage the work they do in their local areas. Collaboration between ICCAs and Biosphere Reserves is a potential avenue to achieve reconciliation.

The UNESCO Biosphere Reserve Model *Monica Shore*

The UNESCO biosphere reserves concept is based on the belief that humans can create shelter, sustainable livelihoods, and live in balance with nature. Biosphere reserves are much closer to Indigenous perspectives of living with the land and encourage overlap between Western and Indigenous processes.

UNESCO biosphere reserves are intended as model regions for society and to demonstrate that preservation of cultural and biological diversity can be in harmony with sustainable development. This is done by building relationships and facilitating dialogue between communities. The Mount Arrowsmith UNESCO Biosphere Region on Vancouver Island[27] has a roundtable that includes representation by different sectors and communities, including municipal and senior levels of government, First Nations, industry, and educational institutions—representing a microcosm of the conversations that can take place at the broader regional level. Although a biosphere reserve has no formal authority through legislation or specific jurisdiction in Canada, its greatest function is to draw attention to the importance of a region and serve as a platform for building relationships between diverse communities and between society and the environment.

Synergies between ICCAs, Biosphere Reserves, and Tribal Parks

The models of ICCAs and biosphere reserves represent different approaches for working towards a mutual goal of collaborative watershed governance, yet they share important synergies. ICCAs and UNESCO biosphere reserves overlap in five ways:

- Engage Indigenous Peoples and local communities in creating a shared vision of a sustainable future;
- Preserve watershed health and conserve biological and cultural diversity at the regional level;
- Create opportunities for reconciliation between communities and between society and nature;
- Believe that humans can find a way to live in balance with nature, and;
- Both are members of international networks—the International Union for the Conservation of Nature (IUCN) and the United Nations Educational, Scientific, and Cultural Organization (UNESCO)—but with no financial support from these organizations in Canada.

Tribal Parks are also an important opportunity for Indigenous self-determination and peace-building efforts in Canada. For example, Tribal Parks have recently been framed as "constitutional parks," suggesting another jurisdictional category for protected areas is needed. In his role with the ICCA Consortium, Eli Enns is working with communities to bridge the concept of ICCAs with Tribal Parks through the co-declaration of "Reconciliation Zones" in Canada. The idea of "Reconciliation Zones" is to recognize opportunities for improved relationships between multiple jurisdictions in areas of shared lands and waters. Through this recognition, Canada may emerge as a leader in meeting global sustainable development goals and in peace-building.

Indigenous Peoples' Authority to Declare Tribal Parks and Reconciliation Zones *Eli Enns*

Eli presented a diagram depicting the history of treaties between Indigenous and settler governments in Canada (see Figure 7). Beginning with the fundamental treaty between the Creator and the people, the diagram demonstrates the various agreements and promises made between Indigenous and settler governments as the nation of Canada was formed. When King George issued the *Royal*

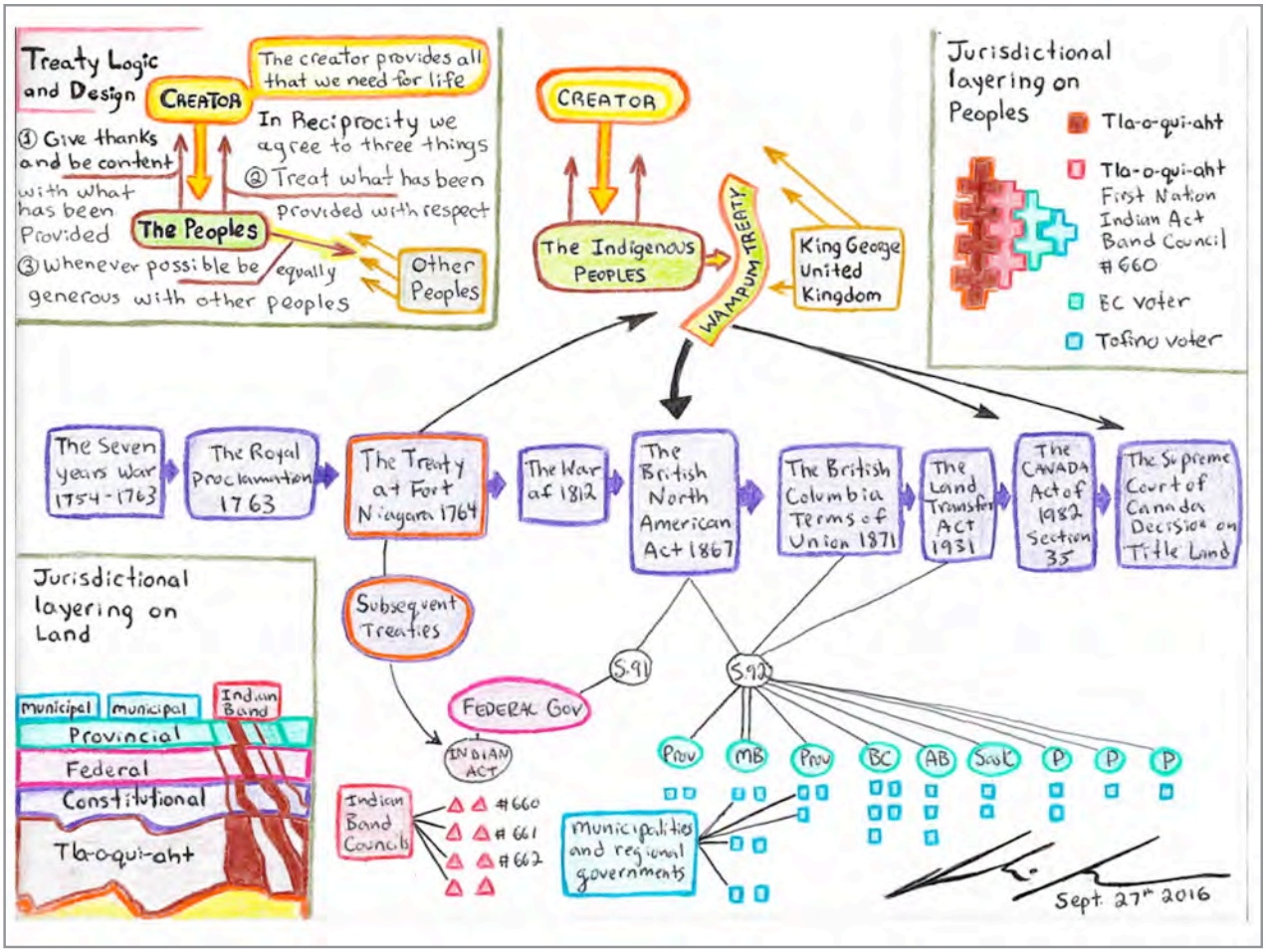


Figure 7: *Indigenous People's authority to declare constitutionally protected areas and reconciliation zones. Source: Enns, 2016.*

Proclamation Act of 1763 he made a promise that nothing would happen on First Nations land unless a treaty is in place. But the Crown has not yet made good on that promise. While Canada is what Eli calls a "brilliant social innovation," there is still much work to be done for the Crown to honour its promise with Indigenous People.

Discussion: Applications of the Biosphere Reserve, ICCA and Tribal Parks Models

I would like to see youth to interact with this presentation. Our teenage boys and girls have a lot to learn from Indigenous thoughts and teachings. Is there an attempt within the UNESCO Biosphere Reserve or ICCA Tribal Parks models to engage youth?

Each biosphere reserve has different circumstances. For example, the Mt. Arrowsmith Biosphere Region hosts BioBlitzes to engage youth and is working with the Snaw-Naw-As First Nation to build a garden at its health centre with the community and youth. This will create intergenerational learning opportunities because Elders are guiding the design of the garden.

For Indigenous groups though, some of the learning should come from within the community rather than formal programs. Sharing knowledge and experiences in nature with parents and other relations is just as important as nature "apps" and camps.

How does this presentation connect with the federal Species at Risk Act (SARA)? The Act has a well-defined component on working with First Nations, how does that fit into this narrative?

The Mount Arrowsmith Biosphere Region Research Institute (MABRRI) at Vancouver Island University has worked with Snaw-Naw-As First Nation to apply to the Aboriginal Fund on Species at Risk (AFSAR). The Institute developed the application as Snaw-Naw-As did not have the capacity, and still the process was quite arduous. If we are forcing a foreign language of grants on communities, how do we expect them to interact and build relationships with us?

An Elder from the Cree Nation has said they do not have a word in their language for conservation. In their worldview they see everything as a relationship. So if you want to protect a living thing, the goal is to restore a relationship. The Aichi Biodiversity Targets are a good start for conservation, but from an Indigenous perspective the entire system should be retained, not just a percentage. That's what is compelling about bringing together ICCA Tribal Parks and UNESCO biosphere reserves. Both models recognize we need sustainable development and livelihoods and that the world is an interconnected system.

In my position with the B.C. Ministry of Environment, I can appreciate this conversation about watershed governance and reconciliation. A really simple question: Where do we start?

We all have a natural, physical self. Because it is the law in Canada, we all need a name on a birth certificate, and a number associated to your name. This embodies your paper self. That will continue to correlate with your natural self until you die. All the papers are associated with a different layer of jurisdiction on your natural self. In provinces like Manitoba, they're saying that not only do First Nations have treaty rights; all Canadians have treaty rights and responsibilities. Reminding us that all people have the responsibility to give thanks to the Creator and act with gratitude and respect.

We all have natural selves that need clean air, food, and water, and we all have emotions that are gifts from the Creator. We need to speak to each other as natural selves: That is the starting point. That creates a filter for proper dialogue. When we get treaties in place that will be the silver bullet.

PHOTO: JENNIFER SWIFT

Planning Together for Healthy Watersheds: Getting Started

Concurrent Breakout (Day Two): Facilitated by Kate Cave (Centre for Indigenous Environmental Resources), with a presentation by Deana Machin (First Nations Fisheries Council)

It is widely agreed that watershed planning processes are richer when they include First Nations' views and water values. Watershed planning provides a foundation for shared decision-making and collaborative watershed governance. Watershed planning guidebooks[28] developed by the Centre for Indigenous Environmental Resources (CIER) provide a guiding framework for building relationships with First Nations and stakeholders within the watershed, and developing a strong planning process.

Following CIER's guiding framework, speakers first set out how to get started on a watershed planning process and then reviewed governance models applicable to watershed planning processes. Key lessons learned from watershed planning were shared. An interactive "world café" exercise enabled participants to workshop solutions to three B.C.-based watershed planning case studies. The session concluded with a question-and-answer period focused on the role of First Nations in watershed planning.

Watershed Planning: What's Involved?
Kate Cave

Watershed planning is about bringing the people within the watershed together to talk about and make decisions regarding our relationships with the environment and everything that is dependent upon them. Figure 8 outlines the five core elements within the planning process. This session focused on the first three elements.

1. ***Describing your approach: know yourself***

   Watershed planning requires articulating the community's voice and vision. Elders and other community members should be gathered to learn about the watershed's vision, goals, and objectives. Spending time to develop a vision will support successful and sustainable implementation. At this stage, there are several questions to ask the community:

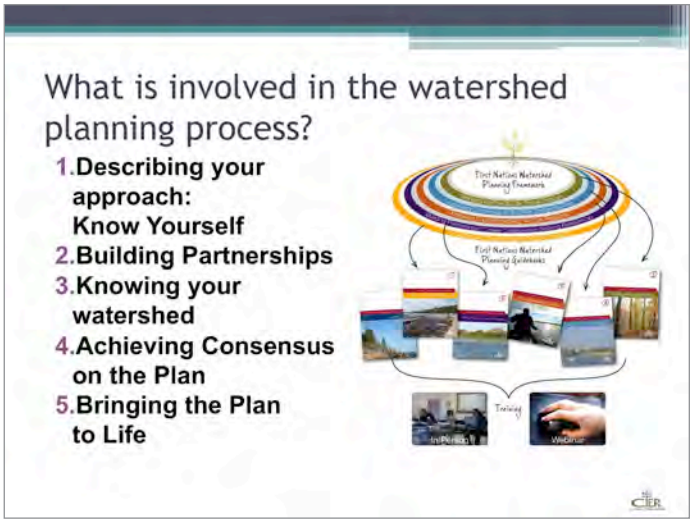


Figure 8: *The five core elements of a watershed planning process are explored individually in the CIER Watershed Planning Guidebook series. Source: Cave, 2016.*

- Why do you want to get involved?
- How do you want to get involved?
- Who is in your watershed?
- What are other First Nations involved in, and what tools might be useful?

This stage is an opportunity to establish community interest and capacity and uncover lessons learned and skills to build a sound process.

2. Building partnerships

It is critical to emphasize that "process is often as important as the final product." Developing partnerships allows groups to tap into shared resources. The CIER guidebooks contain tips and different stories from First Nations which may help inform others undergoing partnership-building efforts.

3. Knowing your watershed

Every watershed is complex and unique, and thus "getting to know" a watershed will take many forms. But there are some high level considerations for how to get started, such as identifying priority areas and the specific challenges and concerns for the water. Another important consideration is determining how the lands and waters are used by community members (both positive and negative uses) and how water is valued by the community. This process helps establish a "baseline" of what is going on in the watershed. It can guide the watershed's goals, build relationships, and spark discussion and resource sharing.

Defining Co-Governance *Deana Machin*

"Co-governance" with First Nations usually takes one of two forms: "cooperative governance" or "collaborative governance." "Cooperative governance" is where the respective parties maintain their separate mandates and responsibilities, but may agree to do some work together to meet a common goal. In contrast, "collaborative governance" involves the parties coming together and fundamentally changing their respective approaches to all aspects of governance: ways of working and sharing resources and responsibilities. Aboriginal & treaty rights must be recognized and respected as a fundamental principle in all aspects of governance and management processes.

A number of key lessons learned from watershed planning emerged out of Kate and Deana's brief presentations:

Build and maintain community motivation. This may be approached in several ways, but one avenue is to identify a champion for the process. Another approach is to establish a watershed planning committee that brings together key people with the right balance of knowledge and drive.

Understand capacity and resource needs of different regional decision-makers and communities to engage in a watershed planning process. Funding is easier to come by when you can prove to funding agencies that you have the right parties involved and all the necessary technical information.

Watershed planning can be a very long and complex process. It needs to be broken down into smaller pieces.

The process is often as important as the final product. Watershed planning needs to create a space for people to work together and learn from each other. It starts with getting to know each other—initial meetings can be called over coffee or tea.

All of the parties need to have a commitment to the process, but fundamentally it is about building relationships and trust that will extend beyond the project timeframe. Particularly in contentious situations, relationship building should come first. For example, Deana described how the Okanagan Nation Alliance started relationship building with the federal

government. They established the Canadian Okanagan Basin Technical Working Group and completed some small projects focused on salmon restoration. Deana reiterated that if you commit to the process and give it time, it can pay off.

World Café: Breakout Groups Session

An interactive brainstorming session, termed a "world café," enabled participants to workshop solutions to three real-world watershed planning case studies brought forward by other participants. One case study was from a First Nation in northern British Columbia, another came from a regional district on Vancouver Island, and the third was posed by a watershed council in central B.C. Primed with three questions to set the framework for the exercise, participants divided into three discussion groups and created a list of recommended next steps and identified potential resources and strategies for each case study.

Cross-cutting themes for next steps recommended in each case study included:

- Bringing more rights holders and stakeholders to the table;
- Working through past conflicts;
- Sourcing regionally specific funding; and
- Remaining focused within capacity restraints.

Discussion: Opportunities and Challenges for Watershed Planning in B.C.

Participants' questions and contributions focused on identifying the drivers for initiating a watershed planning process, uncertainty in the difference between First Nations watershed planning and Indigenous water law, and how to manage contentious relationships with industry.

How can we reactivate a former watershed council and take advantage of growing opportunities under the WSA?

Reactivating a process that has slowed or fizzled out is possible. Kate provided an example of a watershed group who wanted to reactivate an existing First Nations and multi-stakeholder watershed planning committee. CIER worked with the committee to hold a meeting to share more information about the watershed planning process through a series of short presentations, activities, and discussion; identify key watershed concerns and priorities; and determine next steps to keep moving forward.

What are the drivers for initiating a watershed planning process?

Communities are dealing with resource development, drought and climate impacts, which are affecting their water and fisheries. The idea is to break it down into pieces and be guided by a clear vision for what you want to address. You want to be clear, but also compelling and adaptable. There are many outcomes that can be achieved along the way.

Was the issue of overlapping authority among First Nations a problem for the Okanagan Nation Alliance when it established its working group?

While many First Nations have to deal with the issue of overlapping authority between First Nations, the specific example of Okanagan Nation given by Machin did not have to manage for this.

What is the difference between First Nation watershed planning and Indigenous water law?

Indigenous law provides an overall framework for making decisions about social, economic, environmental and any other issue facing a First Nation. It is developed from oral tradition. Water laws can then be used to inform a watershed planning process. For example, the Yinka Dene *'Uza'hné Surface Water Management Policy* and *'Uza'hné Guide to Surface Water Quality Standards* were developed by the Nadleh Whut'en and Stellat'en First Nations to protect surface water based on traditional laws.

How should First Nations approach contentious relationships with industry?

First Nations looking to develop a watershed plan face challenges associated with difficult relationships to industry. It is important to note that all parties are going to be around for the long-term and we need to find ways to engage them in the planning process. One way to deal with this is to contract a mediator. As you move forward with watershed planning, make sure your process is open and all parties are invited. They will eventually come to the table. At the same time, don't wait for them to join to start the planning process.

Planning Together for Healthy Watersheds: Implementation and Ensuring Better Outcomes

Concurrent Breakout (Day Two): Facilitated by Kate Cave (Centre for Indigenous Environmental Resources), with a presentation by Nadia Joe (B.C. Legacy Fund)

A series of watershed planning guidebooks[29] developed by the Centre for Indigenous Environmental Resources (CIER) provide a guiding framework for building relationships with First Nations and stakeholders within a watershed and outline how to develop a strong planning process through five core elements. This session was geared towards individuals and organizations who are in the later stages of watershed planning. It complemented the morning session facilitated by Kate Cave, which focused on the early stages of watershed planning.

Nadia Joe first provided three case studies of First Nations leadership in water management and governance initiatives from across Canada. The second part of the session set out how to implement and ensure better outcomes in watershed planning processes, drawing from CIER's guiding framework. An interactive "world café" exercise enabled participants to workshop solutions to two B.C.-based watershed planning case studies. The session concluded with a question-and-answer period focused on capacity issues and opportunities in watershed planning.

Opportunities to Define First Nations Water Values and Interests *Nadia Joe*

Case Study: A First Nation's Redefinition of Water Management

In Ontario, a First Nation has taken steps to redefine water management in its traditional territory in response to proposed water discharge from a mine's tailing storage facility. The mine requested a permit to discharge water in the next one to three years. However, the discharged water quality exceeded allowable levels for contamination for some contaminants of concern, and the current Provincial Water Quality Objectives are outdated. The First Nation is responding to this situation by proposing new water protection goals that reflect key cultural water values and protect the First Nation's water needs and interests. The nation is also considering a non-degradation water management model. Through collaborations between the First Nation, government agencies, and the project proponent, the parties are seeking to develop new policies and water management plans that better reflect Indigenous values around water, protect culturally significant features and activities, and consider traditional governance practices and protocols.

Case Study: Yinka Dene 'Uza'hné Surface Water Management Policy

Increased pressure from resource extraction industries have the potential to irreversibly impact water sources. In response to this sobering reality, the Yinka Dene in central British Columbia recently developed the *'Uza'hné Surface Water Management Policy*[30] to guide water management in their traditional territory. The policy has three components:

1. A narrative component that states, "Waters within the traditional territories of the Carrier Sekani First Nations should remain substantially unaltered in terms of water quality and flow";
2. A water classification component that divides water bodies into three categories: Class I) high cultural or ecological significance, Class II) sensitive waters, and Class III) typical waters; and,
3. Water quality standards, which are defined as, "Narrative statements or numerical concentrations that establish the conditions necessary to protect water and its uses."

The *'Uza'hné Surface Water Management Policy* can have applications within land-use planning, environmental assessment, environmental regulatory framework, and natural resource damage assessment.

Case Study: Champagne and Aishihik Water Strategy

The Champagne and Aishihik First Nations' (CAFN) traditional territory spans 41,000 km^2 of the southwestern border of British Columbia and Yukon Territory. Most water bodies within CAFN territory are not impacted by resource development activities. To ensure water is protected for future generations, the CAFN government and citizens have made water a strategic priority and developed a water strategy.[31] The

strategy intends to articulate and enact CAFN water laws, set terms of reference for current and future development, and facilitate cultural revitalization processes, including "relearning" cultural protocols and responsibilities for the lands and waters.

Opportunities for Advancing First Nations Water Governance

Similar to CIER's approach to watershed planning, First Nations may take a "staged" approach to advance water governance (see Figure 9). Under this approach, collecting and respecting traditional knowledge and language are emphasized as core for watershed planning in Indigenous communities. Nested within this cultural framework is the process of setting community goals and priorities, such as identifying measurable targets and culturally appropriate indicators to measure change. The final phase is to apply the new policy towards activities that use or impact water, and to communicate the policy to industry and government.

Figure 9: *Staged approach for advancing water governance in First Nations communities. Source: Joe, 2016.*

Watershed Planning: What's Involved?

Kate Cave

Complementing the morning watershed planning breakout, this session provided a brief overview of guidebooks four and five in CIER's framework for watershed planning.[32]

Guidebook 4: Achieve consensus on the plan. Approaches to conflict resolution often include developing terms of reference (which define roles and responsibilities for each party). If needed, an external facilitator or mediator may also help resolve conflicts and ensure all voices are heard.

Guidebook 5: Bringing the plan to life. At this stage, your steering committee could transition to a technical committee, and a clear, detailed work plan can help guide next steps. This process is time consuming, and requires long-term engagement to be successful.

World Café: Breakout Groups Session

An interactive brainstorming session, termed a "world café," enabled participants to workshop solutions to two real-world watershed planning case studies brought forward by other participants. One case study was from a First Nation in central British Columbia and the second came from a citizen's group on Vancouver Island. Primed with three questions, participants divided into two groups and created a list of recommended next steps and identified potential resources and strategies for each case study.

Areas for next steps recommended in each case study included bringing more stakeholders and decision-makers to the table and finding new ways to communicate with landowners in the watershed.

Discussion: Opportunities and Challenges for First Nations Watershed Planning in B.C.

The discussion centered on one participant's comment: ***My organization is struggling to engage with First Nations. We have found that they either can't come to the table because of capacity issues or won't engage because watershed planning is not a current priority. We are unsure of how to balance 1) the need to build government-to-government relationships and 2) if these efforts will actually move us forward in terms of reconciliation.***

Participants responded from their own experiences (i.e. as local government staff, consultants, and members of First Nations):

- **Lack of capacity can go both ways.** These capacity concerns are shared by some local governments. They are very motivated to have input from local First Nations, but limited capacity on both ends often makes this challenging. Dialogue breaks down because of these capacity constraints.
- **Recognize First Nations' structural barriers to participation**. For example, unlike other governments (municipal, provincial, federal),

First Nations don't have the same access to resources, like taxation, to fund their participation in water governance. There is also a need to understand the legacy of colonization on your specific community. Non-Indigenous people wanting to build a relationship with local Indigenous communities require a better understanding of: What is my role in perpetuating colonization? And what can we do to address it? (For example, by providing resources to support the community and appointing a person dedicated to building the necessary relationships.)

- **Find mutual, celebratory interests**. Try to identify areas where you can come together, and where you can build celebratory, rather than issue-based, relationships. Dealing exclusively with negative issues makes capacity issues worse.
- **Bring all parties together for watershed dialogues**. This can range from informal meetings to an organized meeting of representatives. Only organize dialogues that suit the capacity constraints of people your watershed.

Managing for Environmental Flows in B.C.: What's Needed

Concurrent Breakout (Day Two): Facilitated by James Casey (WWF-Canada), with presentations from Oliver M. Brandes (University of Victoria's POLIS Project), Simon Mitchell (WWF-Canada), Nelson Jatel (Okanagan Basin Water Board) &Tim Kulchyski (Cowichan Watershed Board & Cowichan Tribes)

The widely accepted Brisbane Declaration[33] defines environmental flows as "the quantity, timing, and quality of water flows required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems." British Columbia is currently at a critical juncture for environmental flows management. Demands on environmental flows and impacts to flow regimes are escalating in the province, and new opportunities exist to implement a robust environmental flows regime under the *Water Sustainability Act*.

Speakers first provided context on the key components of environmental flows and the state of environmental flows within Canada and globally. The next presentation reviewed the legal tools within the *WSA* to protect environmental flows, highlighting both opportunities and gaps. A panel with three case studies from across Canada highlighted real-world examples of how different groups are collaborating to respond to the unique environmental flows challenges in their region. The session concluded with a period focused on the B.C. Government's approach to environmental flows protection and clarification of specific elements for the case studies.

Context and background on environmental flows *James Casey*

The Brisbane Declaration on environmental flows clearly articulates that the flow of water is the master variable that drives the health of riverine ecosystems. Environmental flows encompass five key elements: hydrology, geomorphology, biology, water quality, and connectivity. Environmental flows are also vital to First Nations' fishing, harvesting, and cultural water uses.

Environmental flows are fundamentally disrupted in major watersheds across the world—rivers so depleted they no longer have enough water to reach the sea—with detrimental impacts for ecosystems, communities, and economies. WWF's Watershed Reports[34] have found that some of Canada's rivers are experiencing high levels of threat (see Figure 10). In B.C., a number of factors are disrupting environmental flows in rivers and streams, including dams and diversions; water

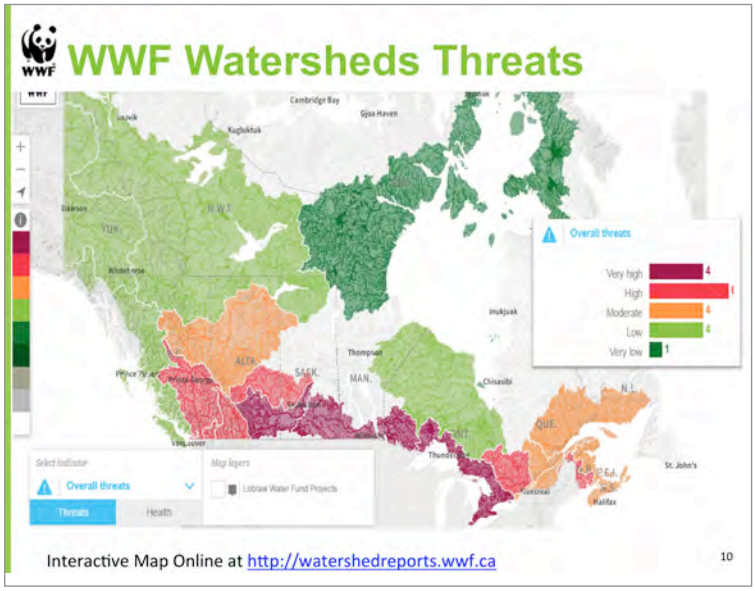


***Figure 10:** Threats to Canada's watersheds. Source: WWF-Canada, 2016.*

allocations that have over-allocated water for human use at the expense of ecosystems; land-use changes; and climate-driven changes to hydrological patterns.

Environmental Flows and B.C.'s Water Sustainability Act *Oliver M. Brandes*

After an extensive modernization process, B.C.'s *Water Sustainability Act* came into force in February 2016. The new law provides an opportunity to significantly improve British Columbia's approach to sustaining water for nature. The environmental flows provisions in the *WSA* are some of the most important aspects of the legislation. Key mechanisms that are now in effect or enabled are:

1. A requirement for decision-makers to consider environmental flows in new non-domestic licensing decisions for surface and groundwater (section 15).
2. Temporary protection orders to address critical low flows and protect fish populations during low flow periods (sections 86–88).
3. Ecological water reserves that can reserve flows for ecosystems by retaining unrecorded water in the stream or aquifer (i.e. prohibiting further licenced diversions) (section 39).
4. A spectrum of new planning opportunities to protect environmental flows, including:
   - Water sustainability plans, which can be developed to prevent or address conflicts between water users and environmental flow needs (sections 64–85).
   - Area-based regulations, which can designate specific areas and create unique thresholds and requirements for those places (section 123).
   - Sensitive stream designations, which can protect at-risk fish populations (section 128).

There are several other elements in the *WSA* that relate to environmental flows, many of which have yet to be defined in future regulations (see Figure 11). Although these are important gains for sustaining water for nature, outstanding concerns persist[35], including a failure to acknowledge Aboriginal rights in the consideration of environmental flows in overall legislative framework; and limited opportunities to amend existing licences. A specific environmental flows regulation is needed, in addition to the current policy, to provide greater transparency and consistency in *what* decision-makers must consider when they consider environmental flows in licensing decisions and *how* this is done (see Figure 12).

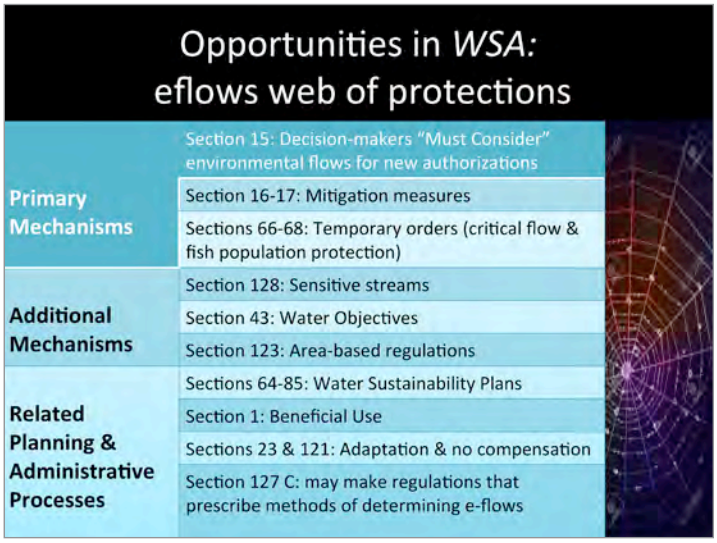


Figure 11: *The WSA's many points of interface with environmental flows. Source: Brandes, 2016.*

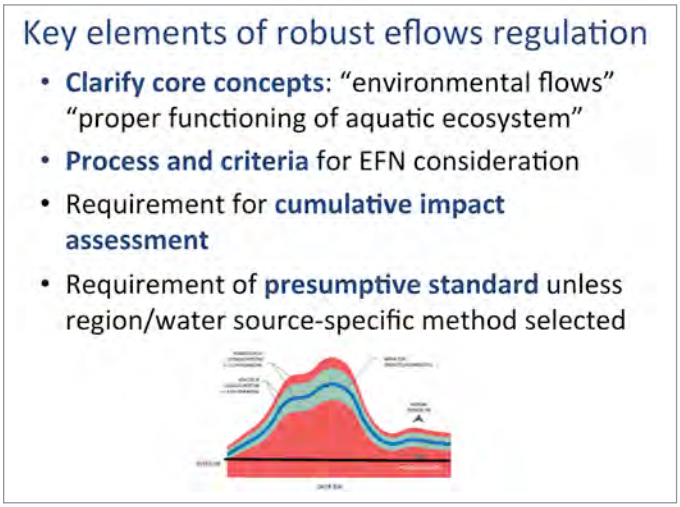


Figure 12: *Key elements of a robust environmental flows regulation. Source: Brandes, 2016.*

St. John River (New Brunswick) Case Study *Simon Mitchell*

Environmental flows issues in this region are primarily driven by hydroelectric dams and energy demands, which lead to extreme fluctuations in flows and subsequent impacts on water temperature and habitat. To address these issues, several partners are working on the *Mactaquac Aquatic Ecosystem Study*,[36] led by the Canadian Rivers Institute and New Brunswick Power. One aspect of this project is to use (for the first time in Canada) the Ecological Limits of Hydrologic Alteration (ELOHA) approach to determine and

implement environmental flows protections at the regional scale. The ELOHA process involves four steps: 1) hydrological foundations, 2) stream classification, 3) flow-ecology relationships, and 4) a social process to determine social values and management needs. This project has been an important stepping-stone for collaboration in the watershed.

Okanagan Basin (Interior B.C.) Case Study *Nelson Jatel*

The Okanagan Basin Water Board, Okanagan Nation Alliance, and B.C. Ministry of Forest, Lands, and Natural Resource Operations are partners on the *Okanagan Environmental Flow Needs Project.*[37] The project is guided by the fundamental question: How much water does the Okanagan environment need? Phase One of this project focused on identifying the best methods for calculating environmental flow needs in 19 pilot watersheds; the methods selected are the Okanagan Tennant Method[38] (desktop) and Okanagan Weighted Usable Width Method[39] (field intensive). Phase Two focuses on collecting data and determining the flow needs for different fish and habitat needs. Finally, Phase Three will involve policy and water licensing support to address trade-offs between different water users and licences in the Okanagan and inform provincial water licensing decisions.

Cowichan River (Coastal Vancouver Island B.C.) Case Study *Tim Kulchyski*

The Cowichan watershed is a complex system for environmental flows management. A weir on Cowichan Lake, owned by Catalyst Pulp and Paper, controls outflow from the lake into the Cowichan River. The Cowichan River is a vital salmon-bearing river that has experienced major flows issues in recent years—with above-average winter flows and extremely low summer flows. The disappearance of winter snowpack in the headwaters is projected to exacerbate spring and summer flows issues. Salmon returning to spawn in the late summer and fall are having trouble moving upstream due to low flows and high water temperatures; and salmon and trout fry are having issues in their spring out-migration when smaller stream channels become disconnected from the main river stem. Cowichan Tribes, local government, senior government, and Catalyst Pulp and Paper have been working together for years on environmental flows management, and there have been some successful collaborations that bring together Indigenous and non-Indigenous perspectives (for example, a collaboration between the federal Department of Fisheries and Oceans and Cowichan Tribes on early run Chinook count). A key challenge is that there is a lack of comprehensive, cohesive information and there are gaps in data. Balancing preferred environmental flows with practical realities is an ongoing challenge in the watershed.

Discussion: Working Towards Robust Environmental Flows Protection

What is the provincial government's allocation target: the environmental flow level for ecosystems to thrive or the critical flow levels to just survive?

The aim is to not go to the critical flow, particularly given the realities of climate change and changing hydrology. The Province is dealing with historical allocations that make it difficult, and so adaptive management and revising the process will be important moving forward.

There is a lack of urgency in addressing environmental flows issues; we need to act immediately to avoid falling into California's situation.

In New Brunswick there is a sense that this is critical and urgent; likewise in the Cowichan, there is a growing urgency to be more responsive with the river running so dry in the summers.

With the Okanagan project, have you had experience addressing the trade-offs between competing uses?

This project aimed to develop the science aspect first before addressing the difficult conversations about reconciling competing uses and allocations. This cannot be a top-down approach, but rather must be directly led with the Okanagan Nation Alliance. There is a need for consistent funding and resources to gather everyone in a room together to discuss how water allocations are done and should be changed.

With the Okanagan project, how much will the whole process cost, including the social aspects? How long will it take to pay for it? And what is the timeline for the implementation?

The overall project is probably in the $500,000 to $1 million range and the timeline is the next several years. The social process piece will be quite expensive and take several years, in addition to the years for the monitoring and reviews.

Making the Federation Work for Water

Concurrent Breakout (Day Two): Facilitated by Tony Maas (Our Living Waters), with presentations from, Merrell-Ann Phare (Centre for Indigenous Environmental Resources and Forum for Leadership on Water), Michael Miltenberger (North Raven Consulting), Zafar Adeel (Simon Fraser University's Pacific Water Research Centre) & Oliver M. Brandes (University of Victoria's POLIS Project)

With responsibility for water shared among federal, Indigenous, provincial, territorial, and local governments, Canada's water policy and governance framework is described as a "bewildering complex jurisdictional maze[40]" that impedes progress on protecting our most precious resource. A renewed focus on cooperative federalism holds promise for addressing the shared responsibility for water protection in Canada, particularly given that water policies and strategies exist in most provinces and territories. However, cooperative federalism has tended to work through rather slow and bureaucratic mechanisms, and typically does not include two key and increasingly influential decision-makers—Indigenous peoples and local governments—that will be critical to making the federation work for water.

This session brought together a range of perspectives to explore a sustainable water future as Canada's next visionary national project. The presentations included an introduction to nested governance systems at the watershed scale, lessons learned in developing the Mackenzie River Basin agreements, and the emerging role for collaborative consent models. The session concluded with a question-and-answer period.

Watershed Governance and Nested Systems *Oliver M. Brandes*

Using three props, this presentation set the context for the federal water policy environment in Canada. Oliver M. Brandes used a special issue of *National Geographic Magazine* from 1993 to illustrate that many of the same water issues exist today as they did a generation ago. He then showed participants the Canadian Constitution document to emphasize the fact that water is not mentioned explicitly within the Constitution. Finally, holding a set of Russian Dolls, Oliver demonstrated that a new approach to federal water policy, one that embodies a nested approach, is needed in Canada.

The development of nested systems is essential for effective water management and governance. Though intuitive from an ecological perspective, nested systems are less obvious when considering legal and jurisdictional boundaries. Legal systems occur at different scales and across different institutions, which often conflict with topographical watershed or sub-basin borders. Across all levels of government, water management should be guided by a social-ecological systems approach and an appreciation for partnerships with Indigenous governments and other community scale input. This requires moving towards an "enabling" approach, where senior governments move from being top-down decision-makers to being enablers of local solutions. Ultimately, this requires a collaborative approach focused on integration at the watershed scale, with partnerships across scales and sectors.

Lessons from the Mackenzie River Basin Agreements *Merrell-Ann Phare*

Basin-level management and equal consideration of upstream and downstream interests are critical, overarching elements in the Mackenzie River Basin trans-boundary water agreements. These principles and approaches need to be reflected at the national level. Water is not easily compartmentalized; its transboundary nature leads to jurisdictional and legal complexities for management.

Water conversations require a long-term dialogue and establishment of relationships, in particular with Indigenous Peoples as equal collaborators and rights holders. Meaningful governance processes recognize Indigenous Peoples as allies. Integrating reconciliation thinking into national water dialogues is paramount for building relationships. A coming together of Indigenous and non-Indigenous governments can lead to a co-created vision for our sustainable water future.

Collaborative Consent as the New Decision-Making Model *Michael Miltenberger*

July 1st, 2017 marks Canada's 150th birthday. Canada should take this milestone as an opportunity to "divorce" from the adversarial decision-making

model of the past 150 years with Indigenous nations and move towards a collaborative consent model with Indigenous governments. Traditionally, the water policy planning table is comprised only of non-Indigenous governments, yet a legacy of court cases demonstrates the need to include Indigenous governments. The status quo is not enough. Moving forward, management plans must be developed through collaboration; "one-sided" plans are insufficient for dealing with broad issues for water like climate change and energy and industry development projects.

Charting a Path Forward for Canadian Water Policy *Zafar Adeel*

Three prominent challenges and three paths forward are evident if we are to make the federation work for water:

Challenges:

- **Governance fragmentation:** Absence of a unified Canadian water vision to guide governance is problematic for interactions with the United States.
- **Canada lacks cohesive and mutually coordinated drinking water regulations.** The World Health Organization's *Guidelines for Drinking-water Quality* [41] recommend a standardized approach at the national level.
- **Canada requires federal investments in water governance and water infrastructure.**

Paths Forward:

- **Host a national dialogue on water.** Such a gathering could help clarify what water means to us as Canadians and how it fits into the Constitution.
- **Nesting our governance systems.** For example, in 1997 Brazil enacted new water legislation, which redesigned water management across three nested levels (basin, state, and federal).
- **Create a central repository for information and data resources.** This can help address fragmentation challenges and facilitate better knowledge sharing.

Discussion: Tools and Strategies to Improve Federal Water Policy

What are the winning conditions to make the federation work better for water? What/who needs to change to bring about these winning conditions?

We need to acknowledge role of cooperative tables, such as the Canadian Council of Ministers of the Environment.

Including Indigenous governments as full participants in a nation-to-nation model is one critical way to build legitimacy of these cooperative tables; non-profit and non-government groups should also participate.

Within senior government, more cohesion is needed to deconstruct silos. For example, bringing together staff from forestry, fisheries, and environment so that we can truly think in an ecosystem way.

Data harmonization and a common platform of information to inform decisions. Despite widespread support for a central database, it remains unclear who would have responsibility for developing and maintaining a centralized data and information repository. A first step can be to implement data integration at a basin scale and work upwards, as is the case for the Mackenzie River Basin.

The federal government has no teeth and no commitment when it comes to water policy. How do we catalyze them to change?

We can encourage them to convene meaningful discussions, such as a national dialogue on water, and to put forward vision statements and concrete sets of principles regarding the federal priorities for water.

The federal government needs to be urged to implement and strengthen existing federal water laws and policies (such as the *Canada Water Act* and aspects of the *Fisheries Act* that apply to fresh water, such as its habitat protection provisions).

Moving forward, water policies developed with the federal government need to better account for regional diversity and include binding, ecologically based statements to ensure protection of water quality, like the Mackenzie River Basin agreements.

A fundamental recognition is needed that water unifies government ministries through all departments.

How can we bring together the ideas and different perspectives in the room?

An overarching challenge for this conversation is the political aspect. Due to election timing, governments are unable to plan for long-term models like watershed governance. Canada needs a strong water ethic, yet water leadership is intermittent and fragmented. Building momentum with your constituency from the grassroots can be a good place to start.

Alternatively, and perhaps controversially, a legislative framework or federal policy towards water may not be needed. Instead, perhaps we should strive for consistency in agreements developed in each watershed with a defined role for the federal government as a driver and enabler.

Show Me the Money: Sustainable Funding for Watershed Governance

Concurrent Breakout (Day Two): Facilitated by Steve Litke and Theresa Fresco (Fraser Basin Council), with presentations from Zita Botelho (Sustainable Funding Task Force), Paul Demenok (Shuswap Watershed Council) & Zafar Adeel (Simon Fraser University's Pacific Water Research Centre)

Watershed governance involves many activities that require alternative approaches and innovative funding mechanisms. However, long-term funding is generally not secured for watershed governance initiatives across the province and poses a significant challenge. One of the nine winning conditions for successful watershed governance (identified by the POLIS Project) is the need for sustainable long-term funding.[42]

This breakout explored several needs, challenges, and opportunities regarding funding of watershed governance initiatives, including case examples and lessons learned. The presentations included a review of sustainable financial mechanisms and models applicable for different rights holders and stakeholders; a case study of how the Shuswap Watershed Council secured a three-year stable funding base for its work; and how to better engage with the private sector in partnerships for water maintenance and management. The final presentation introduced the Sustainable Funding for Watershed Governance Initiative, a task force focused on improving and sharing knowledge about funding mechanisms within B.C.'s water community. The session concluded with a question-and-answer period focused on strategies and approaches for securing sustainable funding.

Financial Mechanisms and Models Across Sectors *Steve Litke*

Drawing on Fraser Basin Council research,[43] Steve Litke reviewed several avenues different groups may pursue to sustainably fund their water governance work:

- **Senior government**: Taxes, grants, and water fees and rentals show potential for sustainable funding.
- **Local government**: Property/parcel taxes, utilities, and water pricing are the most likely sustainable sources.
- **First Nations government**: There is not a clear go-to source of funding for First Nations, but options include impact benefit agreements, grants, and government-to-government agreements.
- **Non-government**: an emerging opportunity is "social impact investments," where philanthropic organizations and investors capitalize on projects with social/environmental impacts. Non-government groups may also benefit from reserve funds, trust funds, revolving funds, or endowment funds to enable funding flexibility and manage multi-year funding.

Lessons Learned for Securing Sustainable Funding

- Secure funds from a suite of financial mechanisms to optimize the strengths and to offset the limitations of each.
- Establish wide representation within the governance organization to optimize the diversity of funding sources and financial mechanisms that can be utilized.
- Align specific activities with appropriate funding sources.
- To the extent possible, dedicate funds to support core operational activities (for example, management and administration costs).

Where possible, use financial management mechanisms, such as trust funds, reserve funds, revolving funds, and endowment funds to

strengthen stability and flexibility over multiple years and across multiple activities.
- Where there are commitments by local, regional, and/or First Nations governments to accept and implement increased roles in watershed governance, there is a need for corresponding financial resources from senior governments and other sources.

"Human elements" are critical to securing funding, which include effective leadership, mutual respect and interpersonal trust, and a long-term commitment to the process and outcomes. Collaborative watershed governance ventures need to be creative but also be guided by effective leadership.

Evolution of the Shuswap Watershed Council
Paul Demenok

Water quality concerns in the Shuswap Lake watershed range from algae blooms to bacterial issues with septic systems. The Shuswap Lake Integrated Planning Process (SLIPP)[44] emerged mainly out of concern for water quality in Shuswap Lake and nearby Mara Lake from provincial and regional government members, as well as civil society between 2004 and 2006. In particular, these concerns related to a significant increase in residential and marina development proposals that included applications to the Ministry of Environment for sewage discharge into the lakes. Civil society advocacy and awareness organizations emerged in response to the frustrations and concerns around the lake, culminating in a houseboat tour in 2006 that brought together local, provincial, federal, and First Nations officials to view development around the lake and to discuss the pressures affecting the lake's water quality and fisheries, as well as the lack of planning and coordination among agencies. SLIPP was established in the fall of 2006 as a collaborative effort among public agencies, First Nations, and other stakeholders to coordinate land- and water-use planning for the Shuswap and Mara Lakes.

SLIPP underwent significant reforms, and hosted community consultations and multiple meetings with partners to revise program budgets and strategies. SLIPP also conducted a feasibility study,[45] which outlined guiding principles for collaboration, cost-effectiveness, transparency, and communication. A key recommendation from the study was to develop a sustainable funding model.

These reforms were the basis for the formation of the Shuswap Watershed Council (SWC) in 2015, a collaborative program of five local and regional governments, two government ministries, one First Nation, and members of the public, based around Shuswap Lake. Its primary goals were to achieve better water quality and healthy shorelines. The SWC's mandate has since shifted to focus on long-term enhanced water quality and safe recreation.

Shuswap Watershed Council: Towards a Sustainable Funding Model

The feasibility study demonstrated several cost-sharing approaches to funding SWC's activities, where parcel tax emerged as the best option. The SWC recognizes that resident taxpayers benefit from the water quality and recreation facilitated by the watershed. The parcel tax is a flat rate, and everyone shares in the benefits. SWC's current funding model is a parcel tax applied across four of the five partner electoral areas.

A few key lessons learned are evident for developing strong planning processes and funding models:

- Focus on what's important (i.e. water outcomes and relationships).
- Engage with partners.
- Find the common thread in your area that people can agree on.
- Everyone needs a seat at the table and to feel like they're heard.
- A neutral partner could also be brought in to help promote transparency and assess pros and cons of proposed approaches.
- Be transparent in your goals and operations to maintain trust with stakeholders.

Why Partner with the Private Sector?
Zafar Adeel

The private sector is an important ally in enhancing solutions to water problems. The private sector holds much needed capital, which is increasingly important, considering governments' limited funds for water governance implementation and built infrastructure. The private sector also often demonstrates important insights into better performance in business

management, technology innovations, and service provision. The private sector is not a monolith, but rather a continuum, from local entrepreneurs and farmers to technology providers and large corporations. How communities relate to the private sector differs; it is not a singular relationship and not always antagonistic.

At the same time, there remains prevalent demonizing of the private sector, which highlights general public distrust, and amplifies failures. A maze of stumbling blocks constrains partnerships with the private sector. Underpinning mistrust is the binary tension between water as a human right or as a public good. "Privatization" is thought to endanger our right to water, and potentially lead to costs that prevent equal access to water.

Evaluations of public-private partnerships for urban water utilities in developing countries yielded mixed results. For example, in partnerships with the private sector tariffs tend to rise over time, yet public-private partnerships demonstrate increased operational efficiency for reducing water loss and improved labour productivity.[46] While there is no "magic bullet" for developing these partnerships, effective hybrid models include engagement with local private investors and encouraging investments by the public sector.

Suggestions for finding a middle ground in pursuing private sector support include:

- Protect the public interest first and foremost (i.e. protect water quality and ensure affordability).
- Continue to maintain public oversight at all times, and provide capital for the "base of the pyramid."
- Find a way to compensate for risks by the private sector. Approaches may include creating enabling policies and regulations, facilitating technological innovation, or undertaking evidence-based risk analyses.
- Create supportive governance frameworks. Public-private partnerships can result in governance innovations, although smaller communities and watersheds often have difficulties developing this framework.

Sustainable Funding for Watershed Governance Initiative *Zita Botelho*

Groups developing collaborative watershed governance initiatives should secure financial resiliency. In British Columba, we have the advantage of opportunities provided in the new *Water Sustainability Act* for improved water planning and governance, yet insufficient resources generally exist to fully realize this potential.

The Sustainable Funding for Watershed Governance Initiative task force[47] aims to support collaborative watershed groups, local governments, and others in identifying and developing sustainable funding strategies to support local watershed governance efforts. The Initiative was developed in late 2015 as part of a collaboration between several organizations.[48]

The task force has three main objectives:

Build capacity by improving knowledge about new and existing funding mechanisms.

Pilot funding mechanisms in two to three communities to explore, refine, and ultimately test a new financial mechanism as a sustainable funding source.

Share learning, research, and knowledge about funding with communities across the province and support building of strategic partnerships and networking with the private sector, academia, governments, NGOs, and professional associations (see Figure 13).

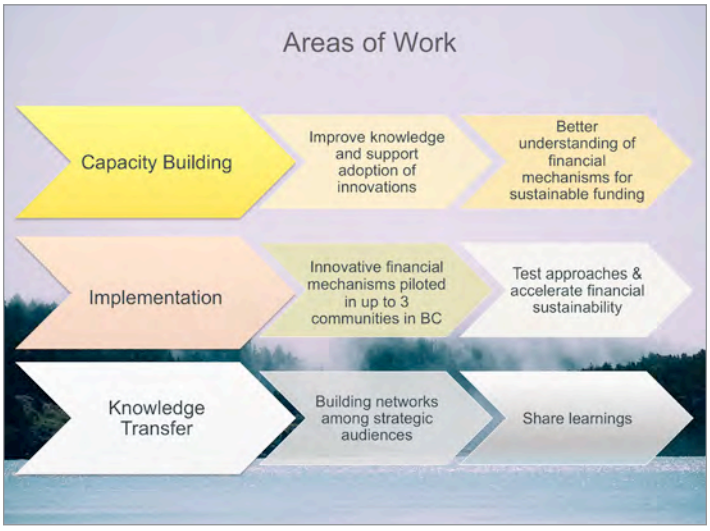


Figure 13: *Areas of work for the Sustainable Funding for Watershed Governance Initiative. Source: Botelho, 2016.*

Discussion: Strategies and Approaches for Securing Sustainable Funding

Participants' questions and contributions reflected shared tensions around securing sustainable funding for water governance initiatives. Key questions raised included curiosity in the feasibility of an umbrella organization to support or facilitate water governance funding, interest in strategies to approach local governments for tax funding, and interest in private sector motivations to engage in collaborative water dialogues.

I often write a proposal to 10 to 12 different organizations to get the money to complete a project. Is there any way to create an umbrella organization that will cover the cost of fund allocating?

Funding watershed governance initiatives is a big challenge with a lot of inefficiencies. Different funding programs have different objectives, timelines, and reporting requirements, so it is difficult to envision a single organization that could help streamline the process. But that is not to say that we shouldn't pursue this.

How can you get your local government to direct tax funds towards your initiative?

You have to establish your reputation and credibility, and consider why would they give you the money. A budget breakdown of how you expect to use their funds would be helpful; they want to see return on their investment. Also consider your timing with other political activities and priorities.

What do you think is the greatest motivator for the private sector to be engaged in watershed governance?

There are two or three types of motivations. Large companies like Nestlé and Coca-Cola realized that engaging with communities is advantageous to them in terms of sustainable business. There's also corporate social responsibility, which may be just driven by self-interest. It's a mix. Another element is that some companies want to build their reputation on being environmentally friendly.

Towards the end of the session, participants were invited to discuss two questions and submit written responses on Post-it notes:

1. What do you see as the best opportunities to establish sustainable funding for watershed governance at the local or regional scale in your watershed?
2. What preconditions or success factors are needed?
   - To what extent are the preconditions in place in your watershed?
   - What else is needed to secure sustained funding?

Two themes were reflected in many of the participant responses:

- Those that use and impact a watershed (e.g. resource development) should contribute funds to reinvest in watershed health (e.g. through licence fees or resource rentals). The Province has a role to enable/facilitate/require this to happen, like the former Forest Renewal B.C. initiative.[49]
- Political will is needed amongst all partners. This requires broad public support, which would be based on an understanding that there is a problem that needs action and investment.

From pH to Plankton: Co-Monitoring for Better B.C. Water Knowledge

Concurrent Breakout (Day Two): Facilitated by Natasha Overduin (University of Victoria's POLIS Project), with presentations from Hans Schrier (Faculty of Land and Food Systems, University of British Columbia), Kat Hartwig (Living Lakes Canada) & Celine Davis (Watershed Science and Adaptation, B.C. Ministry of Environment)

Community-based organizations and local governments can significantly contribute to increasing understanding of watersheds. With the right support and training, citizen "scientists" can collect credible water data. This session explored different models of community-based water monitoring and participants discussed how "co-monitoring" should be designed and resourced for maximum effectiveness.

The first presentation introduced the concept of community-based water monitoring and a range of parameters that can be assessed. This was followed by an illustration of the successes and challenges of community-based monitoring through three B.C. case studies. The final presentation discussed how the B.C. Ministry of Environment is exploring options to

include citizen science in its "science-policy" framework, and focused on the case study of the Northeast Water Strategy. The session concluded with a brief question-and-answer period focused on harmonization of water quality data.

Why Community-Based Water Monitoring? *Hans Schreier*

Communities may monitor a wide range of environmental and social parameters, ranging from various land-use parameters to geological characteristics (see Figure 14).

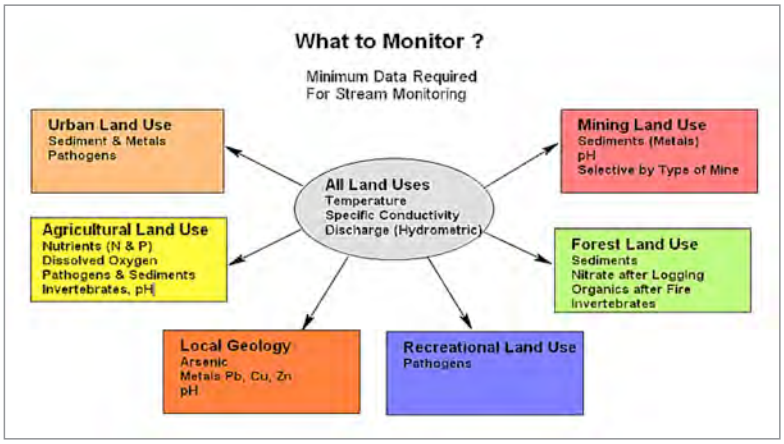


***Figure 14:** Types of monitoring for community-based water assessments. Source: Schreier, 2016.*

Communities are well positioned to contribute to information gathering for several reasons. Not only do community members have local knowledge about their watershed, but they have a vested interest in maintaining watershed health. Community members are also "on location," increasing the likelihood of properly timed water-quality sampling. For example, citizens can be on the ground to monitor during peak flow periods or contamination events.

Several success factors are evident for community-based monitoring:

- Support (from experts and/or governments) is needed in data analysis, interpretation, and storage.
- Expert advice is necessary to guide monitoring programs in early stages of development (e.g. training, advising on which parameters to measure in order to ensure information is useful for policy).
- Multi-year, base funding to support volunteers, employment, training, and the operational costs of monitoring programs.
- Long-term commitment from both community monitors and government agencies to collaborate and work in partnership.
- Effective communication of communities' monitoring results to decision-makers.
- Receptive and open-minded government agencies and experts who will work with communities to find ways to integrate information, provide quality control and assurance measures, and provide technical support and advice.

Case Studies in Community-Based Monitoring *Kat Hartwig*

Successes and challenges of community-based monitoring were reviewed through three case studies: 1) Lake Windermere, 2) the Flathead Valley, and 3) the Upper Athabasca watershed. Each case study underscored the value of working collaboratively in partnerships and linking monitoring with decision-making to build legitimacy, support, and trust. Detailed information about the case studies is available on the Living Lakes Canada website.[50, 51]

B.C. Ministry of Environment Approach to Co-Monitoring *Celine Davis*

The B.C. Ministry of Environment is exploring options to include citizen science in its "science-policy" framework, recognizing the need to better integrate and coordinate the efforts of the different government and non-government groups who are collecting information. An ongoing challenge is that government agencies and citizen science groups may not clearly and consistently communicate the data that is being collected, and the information may not be easily accessible. This is an area where collaboration could be focused to discuss and resource co-monitoring solutions.

Case Study: Northeast B.C. Water Strategy

Although recognizing that there is no one-size-fits-all approach to co-monitoring, the co-monitoring initiative in northeast B.C. provides an example of how data gaps can be filled collaboratively.

The B.C. Northeast Water Strategy (NEWS)[52] was

specifically developed to be delivered by a partnership of people and organizations that rely on an abundant source of clean, fresh water, and sets out a strong water stewardship regime.

One of the core NEWS action areas is to enhance information around monitoring and research and improve the ability to accurately monitor the quality and quantity of the region's water resources. Many strategy partners conduct their own measurements. However, until 2015 these results were not always shared or communicated. As a result, it was difficult for partners to build on each other's work and there were gaps in understanding the state of water across northeast B.C.

NEWS partners identified to need to work together in a process that involves several steps:

1. Identify shared values/goals. What values are you managing and for what purposes?
2. Identify what is currently being monitored. Identify gaps and avoid duplication.
3. Identify where new monitoring should be undertaken.
4. Agree on funding mechanisms, where data will reside, and how results will be analyzed and published.
5. Conduct monitoring.
6. Report and evaluate.

Through the co-monitoring partnership, information gaps are being filled. Ongoing challenges include developing a long-term funding base for the partnership, and creating an effective, accessible database.

Discussion: Best Practices for Community-based Water Monitoring

Should we all be using CABIN (Canadian Aquatic Biomonitoring Network) as a streamside monitoring protocol?

The Streamkeepers Program is a good entry-level method, but the Province uses CABIN because it finds it better for large datasets.

How do we scale things down from a watershed to sub-watershed scale and adequately address concerns?

First, stakeholders need to agree on a single quality assurance plan. For example, in the Columbia Basin over thirty creek groups share one database.

There is an issue of government backlog in processing and analyzing water quality data provided by streamkeeper groups. Perhaps the Province isn't adequately resourced to support the program.

The Province doesn't necessarily have to be the one doing the analysis. We need to be asking how local scientists and organizations can contribute to this task.

Watersheds as 'Eco-assets': Achievements and Challenges in Making Watersheds More Resilient to a Changing Climate

Concurrent Breakout (Day Two): Facilitated by Jon O'Riordan (SFU Adaptation to Climate Change Team and University of Victoria's POLIS Project), with presentations from Emanuel Machado (Town Of Gibsons), Cori Barraclough (Aqua-Tex Scientific Consulting) & Al Martin (B.C. Wildlife Federation)

The impacts of climate change are escalating and often manifest as water-related crises. This session underscored that the existing model of infrastructure is not working, and needs to be adjusted to an "eco-assets" or natural systems management approach. Lessons learned from applying an eco-assets framework were shared through the exploration two case studies: the Town of Gibsons' *Eco-Asset Strategy* and the *Comox Watershed Protection Plan*. The final presentation reviewed a proposal for a new society and funding mechanism for watershed sustainability initiatives, termed the B.C. Watershed Sustainability Fund. The session concluded with a question-and-answer period focused on incentives and constraints for eco-asset approaches.

Town of Gibsons' Eco-Asset Strategy
Emanuel Machado

Nature is a fundamental component of an infrastructure system. Recognizing this, a few years ago the Town of Gibsons underwent a review of how best to value its ecosystems services. They wanted to move away from decaying and expensive engineered infrastructure, instead proposing that nature can provide similar services at a lower cost. Their

deliberations led them to eco-asset management, which is now the core focus of the Town of Gibsons' approach to natural capital.

Eco-asset management integrates the principles of financial planning with ecology to assess, monitor, and improve upon natural assets. The financial planning aspect is especially difficult, given the complexity of calculating ecosystem capital and risks. As a solution, the Town of Gibsons has partnered with the David Suzuki Foundation to assist with ecosystem service assessments in their community.

The town's *Eco-Asset Strategy*[53] recognizes natural assets as features of the environment that provide beneficial services to the local area. This includes the Gibsons aquifer, woodlands, creeks, and foreshore. The policy identifies that engineered replacements for these natural assets, such as water purification and storage infrastructure to replace the Gibsons aquifer, would be costly and involve a certain amount of risk to implement. Thus, the goal of the policy is to support nature's infrastructure, which is more energy-efficient, reliable, and cost-effective over the long term. The natural capital approach demonstrates the savings that may be accrued by local governments as they consider upgrading engineered infrastructure in anticipation of climate change.

Comox Lake Watershed Protection Plan

Cori Barraclough

The Comox Lake watershed encompasses 461 km^2 of primarily forested land in central Vancouver Island and provides drinking water for 45,000 residents. Under the direction of the Comox Valley Regional District (CVRD) and in consultation with the Comox Lake Watershed Advisory Group, the consulting firm Aqua-Tex Scientific Consulting recently prepared the *Comox Lake Watershed Protection Plan*[54] to ensure that "water resources and ecosystem function within the Comox Lake watershed are protected to provide a high-quality and sustainable drinking water supply."

The plan treats the watershed as an asset that requires attention and maintenance, just as any other asset. It first identifies hazards and associated risks for the watershed, and prioritizes actions based on risks. Consultation with a diverse team of experts helped to refine risk ratings. From the risk assessment, very high risks identified include camping in undesignated areas of the watershed, increased runoff, wildfires, and flooding. High risks ranged from drought and earthquakes, to logging cutblock location and trail use.

Accepted by the CVRD in April 2016, the final plan presents 52 recommendations to improve, protect, and sustain the quality of drinking water in the Comox Lake watershed. The top five recommendations are:

1. Dedicate resources to implement the plan.
2. Develop a comprehensive water quality monitoring program.
3. Acquire land within the watershed with priority on shoreline lands.
4. Install UV disinfection to reduce pathogen risk.
5. Manage and enforce limits to recreational activities.

Barriers and constraints for implementing the plan include that the CVRD lacks the data for science-based decision-making and there is little funding for either preventing loss of natural capital or watershed education. In response, the *Comox Lake Watershed Protection Plan* recommends a focus on gathering relevant data (i.e. water quality, land use, recreational, and forestry pressure), educating decision-makers, and reallocating funds from technical solutions to ecological solutions. Along the same theme as the Town of Gibsons' *Eco-Asset Strategy,* the plan suggests incorporating natural assets into asset management plans and budgeting accordingly for their maintenance. The natural capital approach could also avoid expenditures of millions of dollars in engineered filtration works.

B.C. Watershed Sustainability Fund: A Proposal

Al Martin

The B.C. Watershed Sustainability Fund is a proposed new society. The society would be a funding agency and deliver services to both government and non-governmental groups, with a proposed $75 million fund ($5 million each year) to be established to support society functions.

Five areas of focus are proposed:

1. Maintain and improve the ecological flow and functioning of watersheds.
2. Prevent and mitigate the cumulative impacts on watersheds through the establishment of science-

based objectives for water quality, water quantity, and watershed functioning.

3. Invest in watershed, river, and wetlands infrastructure to improve the resilience of watersheds to climate change and the management of greenhouse gases.
4. Leverage financial technical and community support to maintain the stewardship of rivers and watersheds through community-based initiatives with governments and non-profit organizations.
5. Advocate for the stewardship of B.C.'s watersheds through improved policy, education, and communication.

The fund could be established by a regulation under B.C.'s *Water Sustainability Act* or through government policy in the short term. A representative board could be established by the provincial government under the *Societies Act* following public consultation. In terms of governance, the fund should be overseen by an appointed board of directors that is inclusive of watershed interests, including but not limited to provincial, federal, local, and First Nations governments, academic institutions, industry sectors, and non-governmental organizations. The proposed society could support improved water quality, water quantity, and watershed functioning outcomes in watersheds across the province and build knowledge and public support for watershed sustainability at local, regional, and provincial scales.

Discussion: Incentives and Constraints for Eco-Asset Approaches

Participants' questions and contributions focused on potential incentives, tools, and strategies to support the success of natural capital approaches.

There seems to be a need for a society to manage the maze of possible funding available for watershed initiatives and help connect individuals and entities to the proper long-term funding they require.

Dealing with natural ecosystems requires long-term timeframes that are relevant to nature. Funding is typically gone within a few years, which makes things difficult. One strategy is to monitor extreme events and develop evidence-based trends.

What do you do about ecosystem services for large areas with low population densities?

The Town of Gibsons focused on models that are comparable to municipal services. There needs to be scalability to look beyond the natural boundaries to the basin scale.

What funding incentives are available and how do they play a part in implementation of these ecosystem-based strategies?

Leasing riparian areas is a potential incentive. For example, if you know you are going to get a certain amount of revenue from logging, price out how much it would cost if you retained the trees. Leasing is an appealing option, as it doesn't mean giving up the land forever.

How do you get decision-makers to make decisions in line with your agreements?

Ultimately there needs to be a renegotiation of current agreements and treaties to include ecosystem aspects. For example, BC Hydro is looking to introduce the value of ecosystems into its agreements. Decision-makers are restricted by legislation; if poor decisions are being made you need to change the laws so decision-makers can actually make good decisions.

Session facilitator Jon O'Riordan offered the following closing comment*: Institutional bias currently encourages engineering solutions over protection and restoration of natural capital. Professional associations need to continue to promote protection of natural capital in their tool kits for managing watersheds. Furthermore, financial assistance programs should consider supporting natural assets, in addition to traditional engineering projects.*

Deep Uncertainty: Managing for Extremes in our Future Climate

Breakout session (Day Two): facilitated by Anna Warwick-Sears (Okanagan Basin Water Board) & Tamsin Lyle (Ebbwater Consulting)

Communities across British Columbia are witnessing increased frequency and intensity of droughts and floods, and climate change is projected to exacerbate these extremes.[55] Our new climate reality poses problems for current standard practices for engineering design and benefit-cost decision frameworks. This

session proposed common-sense principles and ideas to create a paradigm shift in design thinking, intended to lead to a more robust future where infrastructure is useful and effective under multiple climate futures.

The first presentation provided an introduction to B.C.'s drought reality and reviewed eleven critical actions for drought-proofing our water systems in B.C. The second presentation highlighted several suggestions for improving our approach to flood management, including reducing our dependency on overly "engineered" fixes and striving for adaptive, collaborative solutions. A brief question-and-answer period brought the session to a close.

Drought Adaptation in B.C.

Anna Warwick-Sears

Drought is a condition where you don't have enough water to match your needs. In most parts of B.C. we have enough water if we manage it properly. But demand typically increases when there is an increase in supply if you don't have a way to manage your water stock. As the climate changes, B.C. will need to expand irrigation and tap into more water. This puts B.C. in a situation where we're expecting less water supply, and yet we need more water for irrigating.

The good news is that most of the things we need to do for adaptation to drought are relatively simple, well-accepted best practices around the world. Several critical actions can help with drought-proofing our water systems:

System fixes:

- **Monitoring and metering.** Monitoring enables you to acquire accurate information on water use. Metering can be controversial, but it is the most fundamental tool for managing water.

PHOTO: JENNIFER SWIFT

- **Expand supply and upgrade water distribution systems.** Reservoirs are a buffer for uncertain rainfall and lifesavers for fish, with conservation releases during the dry season. But reservoirs are expensive to build. The cheapest and safest way to expand supply is to stop wasting it. As some communities lose up to 70 per cent of their water through leaky pipes, infrastructure upgrades are also critical.
- **Address contaminants.** Pollution source plans can help address contamination issues and should be developed collaboratively with the community.

Policy fixes:

- **Go slow on the allocations and don't be afraid to regulate.** We need to encourage the B.C. Government to go slow with water licensing, given that the capacity of aquifers is not well known for most of B.C. And if we really need people to cut their water use, we must be willing to send out bylaw officers.
- **Get some basic plans in place.** Most B.C. communities do not have basic drought response plans, or much of anything beyond watering restriction bylaws. Drought plans should be like emergency response plans—clear, simple, and direct so that users and purveyors understand their roles, and the role of the Province.
- **Ease up on irrigation.** Residential irrigation can use a very large proportion of our water supplies. Agriculture also has tremendous capacity to improve water efficiency, by updating irrigation systems, fixing leaks, and improving irrigation scheduling.
- **Enact water-friendly bylaws**. There are a host of bylaw toolkits available in B.C.,[56] with examples for improving landscape and irrigation standards, and policies to improve groundwater recharge by capturing and infiltrating rainwater.
- **Talk to each other and work together.** A single level of government, agency, or organization cannot solve drought problems or cover expenses alone. Working together is a necessary part of creating an integrated approach to drought preparedness.

A Paradigm Shift for Flood Management in Canada *Tamsin Lyle*

Floods cause significant economic damage in Canada, amounting to $2.4 billion in losses annually,[57] and have real impacts on people, the environment, and our infrastructure. Floods are considered a "wicked problem." Multiple dimensions of uncertainty, multiple objectives, intense political scrutiny, and limited resources make modern flood management a challenge.

The dominant modern approach to flood management relies on technical mapping and engineered solutions. But the real problem is the societal impact of floods, and addressing our reactive approach to flood management. In this respect, climate change should be appreciated as a catalyst for changing our approach. For example, the National Flood Insurance Program in the United States predicts a 45 per cent increase in spatial extent of 100-year floodplains by the year 2100. This presents an opportunity to revisit how we manage floods in the face of new hazards.

Strong flood management requires us to tackle this "wicked problem" with good decision-making informed by good science and good people. Many people simply "stick their head in the sand" because this is such a complex and sensitive topic. But several refinements to our approach to flood management can lead to better planning and outcomes:

Plan for risks, not hazards. In flood planning, a hazard describes water that is in a place that is usually dry and is potentially dangerous, while a risk considers the hazard *alongside the consequence and the likelihood*. Planning should first focus on multiple, frequent smaller events instead of planning for one large event that requires a highly technical engineered solution.

Listen to people and consider their values. Flood management has focused on a standard solution—the dike—for some time. But the dominant approach fails to consider whether the protective qualities of the dike outweigh the environmental and social costs. Standard cost-benefit analyses are useless because they do not consider the health of the community or watershed.

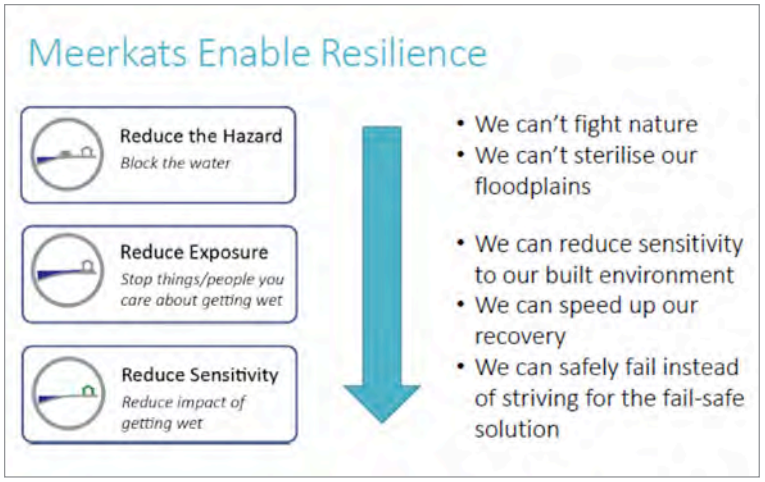


Figure 15: *Steps to enabling resilience in a strong flood management approach. Source: Lyle, 2016.*

Focus on the decision process, not the solution. Decision-making processes are extremely important when your goal is an adaptive solution.

Embrace uncertainty. Strive for adaptive solutions that will work under many climate and development futures. We also must avoid solutions that are single-minded or remove future options. In a changing, uncertain climate, chances are that traditional engineering won't last into the future.

Enable resilience. We can't fight nature or sterilize our floodplains. But we can reduce sensitivity to our built environment and speed up our recovery from floods through reducing exposure. We can safely fail instead of striving for the fail-safe solution (see Figure 15).

Discussion: Increasing Public Awareness Around Droughts

How can we collectively define drought and increase public awareness around drought issues?

The Okanagan Basin Water Board is trying to work together with local regional districts to implement sub-basin drought monitoring.[58] It wants to standardize the definitions of water restriction stages across the province. Since the public doesn't always understand what these stages mean, we must collectively work to improve engagement and communication.

Reflections, Next Steps, and Traditional Closing

By Kelly Bannister (Conference Chair; University of Victoria's POLIS Project), Merrell-Ann Phare (Centre for Indigenous Environmental Resources), Oliver M. Brandes (University of Victoria's POLIS Project), Ta'Kaiya Blaney (Native Children's Survival) & Elder Margaret George (Simon Fraser University's Elders Program)

Kelly Bannister (Conference Chair) expressed appreciation for the open minds and hearts that participants brought to the event. She indicated that she was moved by how much relationship-building occurred at the forum, and shared her hope that participants would leave with new connections, ideas, examples, energies, and convictions as they returned to face the challenges in their own watersheds. She thanked all the sponsors, partners, hosts, and individuals involved in making the event a success.

Reflections and Synthesis *Merrell-Ann Phare*

Merrell-Ann Phare framed her reflections around two of the POLIS Project's "winning conditions" for watershed governance: 1) co governance with First Nations and 2) support from and partnership with local government.[59] Indigenous governments and local governments are taking innovative approaches to watershed governance in B.C., engaging in direct action and building momentum from the ground up.

There is not a right or wrong way to approach watershed governance. There are merits to both top-down and bottom-up approaches. It is really about the linkages and connections in how we work together—between First Nations and Métis peoples, between different levels of government, between governments with adjacent or overlapping jurisdictions, and so on. No single approach is the best, and no single approach is enough in itself.

The issue of language and our choice of words came up many times at the forum. If you change your language and choice of words, it changes the conversation, and perhaps the outcome of that conversation. The use of "allies" instead of "colonizers" at the forum came from many Indigenous and non-Indigenous participants. This signals a move towards working better together.

From Val Napoleon, participants learned that it is not just about Indigenous laws for water. It is about talking to everybody in the room, discussing all our laws and what we all own. Those conversations need to transcend academic circles and enter into the public sphere.

Participants learned youth have a critical role in advancing watershed governance. Ta'Kaiya Blaney delivered her message and big picture goals with strength and wisdom. But the rest of us have a long way to go. It can be difficult to engage with youth: How do we mobilize them? How do we use their language? We must work harder to engage young people and continue to set a broad governance future.

Finally, we must avoid getting overly focused on the process of watershed governance. We all love the process, but at the end of the day it has to be about achieving outcomes for water and improving the lives of the people that depend on it. We need to challenge ourselves to come back to what we're doing this for: to make watersheds healthier.

Next Steps *Oliver M. Brandes*

Oliver M. Brandes noted that an evolution of the dialogue held at the *Watersheds 2016* forum can be seen by looking back at a series of focused events that have built this discussion for a number of years in B.C. This started more formally with *Water in the City* (2006),[60] continued with *A Water Gathering: Collaborative Watershed Governance in BC and Beyond—Solutions Forum* (2012),[61] and more recently with *Watersheds 2014: Towards Watershed Governance in British Columbia and Beyond* (2014).[62] Three main themes have spanned each of these events:

1. **Entering the age of adaptation.** Resilience planning and taking uncertainty seriously are the only options.
2. **Water matters** socially, ecologically, economically, and spiritually, and those impacted want a say.

3. **Shared decision-making** is not a matter of *if* but *when*. Let's be the architects of our freshwater future.

Water governance will change more in the next ten years than it has over the last 100. This is evident in the way we talk about water ethics, and moving towards partnership-based and other creative approaches. The urgency and possibilities to act are increasingly present through policy windows and new laws—both provincial and Indigenous laws. But how do we accelerate this action? We must be transformative, innovative, and begin to seriously "think like a watershed."

A few "big ideas" are on the water horizon in B.C.:

- **New concept of infrastructure**. Water conservation must be the priority. Conserving water is cheaper, faster, and more sustainable than continuing to build infrastructure of bigger dams, pumps, and diversions.
- **Water-centric planning** cuts across scales, from regional and local to federal. It emphasizes that making it a priority to get the water aspects right will yield integrated and comprehensive approaches to planning.
- **Rivers with rights.** Following the example of the Whanganui River in New Zealand could result in innovative arrangements in B.C. In 2012, an agreement recognized the Whanganui River and its tributaries as a legal entity, with rights to exist and flourish as an "integrated, living whole."
- **Watershed governance** is a fundamental idea of forming partnerships and shared decision-making at the watershed scale, and thinking about upstream and downstream interests as part of a whole-system approach.

Projecting forward to *Watersheds 2018*, Oliver envisions sessions that share stories of sustainable funding and partnerships galore, examples of inclusive and binding watershed planning with real engagement from First Nations communities, co-governance models that are working with real decisions to change practices and restore watershed function, and firm legal protections for water for nature and people.

We must transition from managing the *watershed* to managing *people* within the watershed. Water, not oil, will define the 21st century. We must work together to engage citizens in "hydro-citizenship."

Youth Message and Song *Ta'Kaiya Blaney*

Ta'Kaiya Blaney reflected that when she is in conversations about protecting her watershed, she isn't speaking out of a response to a threat or a need to fight back. Her inspiration comes from a place that is creative and represents her identity. She sings to ensure that her future is protected and to have fun through music. As part of the conference closing, Ta'Kaiya sang her songs "Turn the World Around" and "A New Flower," accompanied by Tatyana Speed on guitar.

Traditional Closing and Prayer *Elder Margaret George*

Elder Margaret George acknowledged the Musqueam, Squamish, and Tsleil-Waututh Nations. She shared stories about her connection with water and growing up along the Fraser River in Coast Salish territory. Margaret closed with a prayer to recognize the good work completed at the event and encourage us to move forward together with gratitude and respect.

Appendices

APPENDIX 1: *WATERSHEDS 2016* PRESENTER BIOGRAPHIES

OPENING & KEYNOTE SPEAKERS

Margaret George Elder and Educator, SFU Elders Program

Elder Margaret was born in Skawahlook First Nation and raised in Ruby Creek by her grandparents. She attended school on her reserve and graduated from UBC. She has been involved with many events and activities within her own community and schools in Vancouver. Margaret loves to share her wisdom and introduces her culture with others. She enjoys her life with family, friends, and community. As one of the elders of Simon Fraser University's Elders Program, Margaret welcomes all students to share time with her and hopes to provide guidance.

Zafar Adeel M.Sc., Ph.D., Executive Director, Pacific Water Research Centre, Simon Fraser University

Dr. Zafar Adeel serves as the Executive Director of the Pacific Water Research Centre, and as Professor of Professional Practice, School of Resource and Environmental Management at Simon Fraser University. He has previously worked with United Nations University, including serving for ten years as the Director of UNU Institute for Water, Environment and Health in Hamilton, Ontario. His research Interests include water security, the nexus of water, food and energy security, and the 2030 Agenda for Sustainable Development.

Merrell-Ann Phare B.A., LL.B., LL.M, Executive Director, Centre for Indigenous Environmental Resources

Merrell-Ann is a lawyer and author. She is former Chief Negotiator on behalf of the Government of the Northwest Territories in their negotiation of transboundary water agreements in the Mackenzie River Basin and in negotiating Thaidene Nene national and territorial parks. As Founding Executive Director of the Centre for Indigenous Environmental Resources (CIER), she has worked to assist First Nations in addressing many environmental issues they face. Merrell-Ann is legal counsel and advisor to a number of Indigenous and other governments and organizations and regularly speaks on topics addressing environmental issues, Aboriginal rights, and governance.

Ta'Kaiya Blaney Youth Speaker

Ta'Kaiya is a powerful 15 year old actor, singer-songwriter and activist from the Tla'amin First Nation, north of Vancouver, Canada, and Youth Ambassador for Native Children's Survival (NCS). Ta'Kaiya has performed and spoken at grass-roots Indigenous gatherings and rallies, and at United Nations forums across the globe.

Kelly Bannister M.Sc., Ph.D., Co-Director of the POLIS Project on Ecological Governance at the UVic's Centre for Global Studies and Watersheds 2016 Conference Chair

Kelly works in collaborative biocultural diversity research and education. She has particular interests in applied ethics, cross-cultural values and intercultural communication within human-ecosystem relationships. Kelly is pleased to head a new POLIS initiative on water ethics and cross-cultural values.

SPEAKERS & PANELISTS *(alphabetical)*

Cori Barraclough M.Sc., R.P. Bio., C. Biol., MSRB, PMP, Freshwater Ecologist, Aqua-Tex Scientific Consulting Ltd.

For more than 20 years Cori has helped local governments in British Columbia to manage and protect their communities' water resources in a cost-effective, feasible and responsible way. Though she's professionally grounded in the research, behavior, and impact of aquatic ecology, she understands that viable scientific recommendations must account for the real-world, political influences her clients confront in their decision-making processes, including issues such as social palatability, timing, and funding.

Zita Botelho B.A., M.A., Project Manager, Sustainable Funding for Watershed Governance Initiative

Zita is passionate about water and promoting dialogue and collaboration to support innovative solutions to water challenges. She is an independent consultant with deep experience in environmental and water public policy

development. Prior to working in consulting, Zita was the Manager of Strategic Water Initiatives at the BC Ministry of Environment where she led the development of Living Water Smart- B.C.'s Water Plan and the initial phases of the Water Sustainability Act development.

Oliver M. Brandes B.A.(H), Dip.RNS, M.Econ., JD, Co-Director of the POLIS Project on Ecological Governance and Lead of the POLIS Water Sustainability Project at the University of Victoria's Centre for Global Studies

Oliver's work focuses on water sustainability, sound resource management, public policy development, and ecologically based legal and institutional reform. Oliver is a lawyer by training, and an adjunct professor with the University of Victoria's Faculty of Law and School of Public Administration.

James Casey B.A., M.A., Senior Freshwater Conservation Specialist, WWF-Canada

James is particularly interested in the importance of freshwater resources for the health of our rivers and estuaries. He completed a Master's degree in International Environmental Policy at the University of Northern British Columbia with a focus on the management of international transboundary rivers. Closer to home, James has worked in WWF's Prince Rupert office, encouraging community engagement in marine planning processes and out of the Vancouver office on the new Water Sustainability Act and the emerging Cumulative Effects Management Policy.

Kate Cave B.A.(H), MES, Project Manager/ Research Associate, Centre for Indigenous Environmental Resources

Kate is passionate about protecting our environment and is strongly committed to ensuring Indigenous communities have a voice in water stewardship and governance processes. Kate has 12 years of experience working in the environmental field and with Indigenous communities across Canada and rural, remote communities in developing countries. She has worked with the Centre for Indigenous Environmental Resources (CIER) since 2014.

Deborah Curran B.A., LL.B., LL.M, Acting Executive Director, Environmental Law Centre

Deborah is an assistant professor in the Faculty of Law, University of Victoria and acting Executive Director for the Environmental Law Centre. In addition to teaching water law she provides legal advice to community organizations and First Nations in BC on water and municipal law.

Celine Davis M.Sc., R.P.Bio, Manager of Watershed Science, Water Protection and Sustainability Branch, BC Ministry of Environment

Celine works on incorporating sound science into water standards, policy and legislation with a group of dedicated groundwater and surface water scientists and policy analysts. Celine has over 20 years of experience in watershed environmental assessment, monitoring and reporting and policy development. A keen outdoor enthusiast, she spends most of her free time near the water.

Paul Demenok Chair, Shuswap Watershed Council

Paul has acted as Area C Director with the Columbia Shuswap Regional District since 2012. In 2013, Paul became the Chair of SLIPP, the Shuswap Lake Integrated Planning Process, an award- winning collaboration of 17 government agencies. In 2014, SLIPP was replaced by the Shuswap Watershed Council, with Paul continuing as Chair bringing forward a more focused mandate and objectives. Paul retired to the Shuswap in 2009 after a career of 30+ years in medical education and advertising.

Eli Enns, B.A.Research Associate, POLIS Project on Ecological Governance

Eli is a Tla-o-qui-aht and Canadian political scientist focused in constitutional law, international dispute resolution and ecological governance. Among many other roles, he is Regional Coordinator North America for the Indigenous Peoples and Community Conserved Territories and Areas ICCA Consortium.

Theresa Fresco M.A.Program Coordinator, Watersheds and Water Resources, Fraser Basin Council

Theresa is currently an assistant regional manager for the Upper Fraser Office in Prince George. She provides Secretariat and administrative support to the Nechako Watershed Roundtable and is assisting the development of the Nechako Watershed Strategy in addition to other sustainability projects in the region.

Kat Hartwig B.Comm., Executive Director, Living Lakes Canada

Kat is an advisor and board director for several water stewardship groups in BC, Canada and in Europe. She grew up on her family ranch in the Southern Rockies of BC and has been involved in international, national and regional environmental advocacy issues since 1983. Kat facilitates cross sector, corporate, and NGO partnerships for Living Lakes Canada's water stewardship work.

Florence James Elder and Educator, Penelakut Tribe, Coast Salish Nation

Florence (*Thiyaas*) is a Coast Salish elder and educator from Penelakut Island. She is a fluent speaker of the Coast Salish dialect, Hul'q'umi'num. She has lived her life in the Gulf Islands, on Galiano and Penelakut Island, in the traditional territory of Puneluxutth'. She is an educator and lifelong learner who draws on both her traditional gifts and teachings from the Ancestors and her university-based education. Florence is a highly respected elder in her community, widely known for her cultural expertise, her knowledge of and dedication to the environment, and her commitment to the care and education of young children.

Nelson Jatel M.A., P.Ag, Water Stewardship Director, Okanagan Basin Water Board

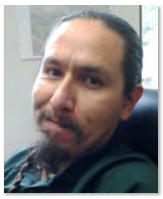
Nelson works with the Okanagan Basin Water Board's Okanagan Water Stewardship Council to develop practical solutions that reflect the best available science, innovative policy and consensus approaches. Nelson has a background in freshwater science, a Master's degree in water governance, and was previously the Executive Director of the Okanagan Partnership - a business led non-profit focused on collaboration and identifying practical 'small solutions' to support a globally competitive Okanagan.

Nadia Joe B.Sc., M.Sc., Member, B.C. Legacy Fund

Nadia (*Gugula*) is Nlaka'pamux on her mother's side and southern Tutchone, belonging to the Crow Clan of the Champagne and Aishihik First Nations, on her father's side. Working as an environmental scientist, Nadia has the privilege of working with a number of Indigenous communities across Canada to help advance their interests in water protection, management and governance.

Vicki Kelly M.A., Ph.D., Associate Professor, Faculty of Education, Simon Fraser University

Vicki is an Anishinaabe/Métis visual artist, movement therapist, writer and educator. She recently completed a two-year traditional apprenticeship at the Freda Diesing School of Northwest Coast Art as part of her research in Indigenous Art as a knowledge practice. Her areas of interest and teaching include Indigenous Education, Art Education, Ecological Education, Health Education, and Contemplative Education.



Tim Kulchyski Biologist, Cowichan Watershed Board; Member, Cowichan Tribes

Tim has worked with a variety of clients, assessing upland, freshwater, and marine ecosystems for 15 years. His work often involves examining the impacts of development on cultural values. Tim has travelled extensively, studying the interaction between resource issues and cultural heritage. Over the past several years he was involved in a major Hul'qumi'num language revitalization initiative. Tim has been a member of the Cowichan Watershed Board since its inception in 2010.

Steve Litke M.A., Senior Program Manager, Watersheds and Water Resources, Fraser Basin Council

Steve has worked with the Fraser Basin Council since 1998 and is the Senior Manager responsible for the Council's Watersheds and Water Resources Program. He has overseen the development of guidance documents on watershed planning and collaborative watershed governance. He and the FBC team have designed and facilitated workshops throughout BC on water issues, stewardship, planning, governance, and to explore opportunities for collaborative action.

Lana Lowe B.A., M.A., Director, Lands Department, Fort Nelson First Nation

As Lands Director, Lana leads the development and implementation of land and water governance initiatives on behalf of the Fort Nelson First Nation, including strategic policy development, inter-governmental and industry relations, Harvester support programming, community consultation, environmental monitoring, ecological restoration and land-based research projects. Lana holds an undergraduate degree in Resource Geography and a Master's degree in Indigenous Governance from the University of Victoria.

Tamsin Lyle M.Eng, MRM, P.Eng, Principal, Ebbwater Consulting

Tamsin is principal and founding engineer with Ebbwater Consulting, a Vancouver based company that is wholly focused on flood management. Over her academic and professional careers she has developed in-depth technical knowledge of flood mechanisms along with a broad understanding of flood policy and planning. She works across the country to help communities mitigate their flood risk, and often speaks out on the need to manage floods in a holistic and integrated manner. She is an author of the City of Vancouver's coastal flood adaptation plan, where some of the ideas in her presentation were first hatched.

Tony Maas B.Sc., M.A., Director, Forum for Leadership on Water; Manager of Strategy, Freshwater Future

Tony has been working to protect the health of Canada's fresh water for over 15 years. He divides his time between roles as Director of the Forum for Leadership on Water (FLOW) and Manager of Strategy with Freshwater Future, a bi-national Great Lakes organization. In both roles, he provides strategic direction and policy expertise, and builds partnerships among diverse interests to benefit people, the environment and the economy.

Emanuel Machado Chief Administrative Officer, Town of Gibsons

For over a dozen years, Emanuel has worked with communities throughout Canada, promoting a greater use of renewable energy, net-zero buildings, water strategies, social plans and sustainability frameworks, all with a focus on people. More recently, Emanuel has been developing a program for the Town of Gibsons, called Eco-Assets, which recognizes the role of nature as a fundamental component of the municipal infrastructure system, leading to a greater understanding of the value of ecosystems services and improved financial and operational management plans of the community's natural assets.

Deana Machin B.Sc., MBA, Strategic Development Manager, First Nations Fisheries Council

Deana has been active in the field of First Nations fisheries management and policy for 15 years. She is a member of the Okanagan Nation and grew up spending summers on Okanagan Lake in Vernon, BC which has evolved into strong values about the role of First Nations in resource management, watershed protection and promoting collaborative management approaches to fisheries management.

Alan Martin B.Sc.(H), M.Sc., Director of Strategic Initiatives, BC Wildlife Federation

Alan has extensive knowledge and experience of British Columbia's resource management issues from 30 years of experience in the BC Public Service through a number of Ministries. He was a government representative on the Board of Directors of the Freshwater Fisheries Society of BC and the Habitat Conservation Trust Foundation. He retired as Executive Director, Fish Wildlife and Ecosystems from the British Columbia Ministry of Environment in January, 2010, and continues to serve as a member at large on the HCTF Board of Directors.

Michael Miltenberger B.A., Principal, North Raven Consulting

Michael's interests are water protection and governance, working collaboratively on environmental protection, renewable energy development, building efficient government, expediting land claims, and strategic planning. He works with Aboriginal and Crown governments, ENGO's, industry and the private sector providing strategic political advice. Prior to his current work, he spent 20 years as MLA in the NWT Legislature, 14 of those years as Minister of the Environment and Natural Resources, Minister of Finance, Minister of Health and Social Services and the Minister Responsible for the Northwest Territories Power Corporation.

Simon J. Mitchell B.Sc. F., Senior Specialist, St. John River, Freshwater Program, WWF-Canada

Simon works with a diversity of actors in support of a healthy St. John River. He has particular interests in environmental flows, renewables, adaptation, resilience and the complexities associated with transboundary waters.

Val Napoleon LL.B., Ph.D., Associate Professor, Faculty of Law, University of Victoria; Law Foundation Professor of Aboriginal Justice and Governance

Val is a member of Saulteau First Nation and an adopted member of the Gitanyow (Gitksan) House of Luuxhon, Ganada (Frog) Clan. Some of her major initiatives include the proposed joint JD and Indigenous law degree program, establishing the Indigenous Law Research Unit, and the forthcoming Water Laws: Lessons from Indigenous and Colonial Stewardship project.

Natasha Overduin BPAPM, M.A., Research Associate & Watershed Governance Project Manager, POLIS Project on Ecological Governance

Natasha's work focuses on supporting capacity-building for watershed governance in B.C. through regional workshops, ongoing research, and communications. In September 2015, Natasha completed her MA at the Water, Innovation and Global Governance Lab at the University of Victoria.

Jon O'Riordan Ph.D., Senior Policy and Research Advisor, Adaptation to Climate Change Team, Simon Fraser University; Strategic Advisor, POLIS Project on Ecological Governance; Affiliate, Centre for Global Studies, University of Victoria

Jon is a former Deputy Minister of the Ministry of Sustainable Resource Management in the British Columbia Provincial Government. He has completed 35 years in the public service, mainly with the Provincial Government, in environmental management and land and resource planning. In his most recent position at the Ministry of Sustainable Resource Management, he was responsible for completing six regional land and resource management plans. Dr. O'Riordan joined the POLIS Water Sustainability Project as a strategic water policy advisor in 2007, where he focuses on provincial water policy reform and the ecological governance of water management.

Julie Pisani B.A., Coordinator, Drinking Water and Watershed Protection Program, Regional District of Nanaimo

Julie is an experienced public speaker with a background in nature interpretation, environmental communications and local government water initiatives. She coordinates the Drinking Water and Watershed Protection program at the Regional District of Nanaimo (RDN) where she leads and outreach awareness initiatives; data collection/monitoring efforts; and planning/policy advocacy. She graduated from the Environmental Studies program at the University of Victoria in 2010, and has been working with the RDN since 2011.

Wayne Salewski Chair: Nechako Environment and Water Stewardship Cente; Nechako White Sturgeon Community Working Group; Nechako Kitimaat Development Fund

Wayne has worked in the conservation world as a volunteer for the past 40 years. He has worked beside an amazing group of individuals in north central BC to restore the many streams that flow into the Nechako River, while working to change policy that simply sometimes doesn't consider the whole picture.

Dave Schaepe Ph.D., Director, Stó:lō Research & Resource Management Centre at Stó:lō Nation; General Manager, People of the River Referrals Office

Dave has worked for the Stó:lō Nation in Chilliwack, B.C. since 1997. Dave is also an Adjunct Professor in Simon Fraser University's Department of Resource and Environmental Management, and as well as the University of the Fraser Valley's Department of Social, Cultural and Media Studies. He remains active in the negotiation of Aboriginal rights and community-based heritage landscape and resource management.

Hans Schreier B.A., M.Sc., Ph.D., Professor Emeritus, UBC Faculty of Land & Food Systems, Land-Water Systems Program

Hans has worked on watershed management for the past 30 years with a focus on land-water interactions, water pollution, stormwater management and climate variability. He has conducted research projects in the Himalayas, the Andes, the Columbia and Okanagan Basin, and the Lower Fraser Valley examining agricultural, forestry and urban impacts on water.

Monica Shore M.A., Coordinator, Mount Arrowsmith UNESCO Biosphere Region, Vancouver Island University

Since 2014, Monica has been involved in the revitalization of one of Canada's 18 UNESCO biosphere reserves. As part of her role with the Mount Arrowsmith Biosphere Region on the east coast of Vancouver Island, she facilitates a regional roundtable involving First Nations, government, private forestry companies, conservation organizations, and VIU that works together to collectively envision and implement positive change and long-term health for people, culture, and the environment.

Rosie Simms B.A. & Sc. (H), M.A., Water Law and Policy Researcher/ Coordinator, POLIS Project on Ecological Governance

Rosie's work focuses on mobilizing BC water law and policy issues through ongoing research, communications, and workshops. In February 2015, she completed her MA at the Institute for Environment and Sustainability at the University of British Columbia, where her research explored histories and interactions between First Nations and water governance in BC.

Anna Warwick Sears Ph.D., Executive Director, Okanagan Basin Water Board

Anna is passionate about using science to solve real-world problems and building bridges with community stakeholders. She is currently Chair of the Board of Governors of the Real Estate Foundation of BC – a philanthropic organization focused on sustainable land use. In 2015 was appointed by the International Joint Commission to the International Osoyoos Lake Board of Control. In her free time, Anna loves to explore the Okanagan valley, and cook dinner for friends.

APPENDIX 2: *WATERSHEDS 2016* PARTICIPANT LIST

Zafar Adeel, Pacific Water Research Centre, SFU

Gail Adrienne, Nanaimo & Area Land Trust

Sarah Alexis, Okanagan Nation Alliance

Jennifer Archer, BC Water Funders Collaborative

Jean Atkinson, Cowichan Lake and River Stewardship Society

Lina Azeez, Watershed Watch Salmon Society

Murray Ball, Independent Researcher

Kelly Bannister, UVic's POLIS Project on Ecological Governance, Centre for Global Studies

Cori Barraclough, Aqua-Tex Scientific Consulting

Mark Biagi, Kitsumkalum Nation

Anne Blaney, Native Children's Survival

Del Blaney, Native Children's Survival

Ta'Kaiya Blaney, Native Children's Survival

Barry Booth, UNBC's Integrated Watershed Research Group

Zita Botelho, Sustainable Funding for Watershed Governance Initiative

Oliver M. Brandes, UVic's POLIS Project on Ecological Governance, Centre for Global Studies

Miranda Brooke, Secwepemc Fisheries Commission

Meredith Brown, Ottawa Riverkeeper

Bas Brusche, Geoscience BC

Chris Buse, UNBC's Cumulative Impacts Research Consortium

Brenda Bye, Nazko First Nation

James Casey, WWF-Canada

Kate Cave, Centre for Indigenous Environmental Resources

Chantelle Chan, Evergreen

Jania Chilima, USaskatchewan's School of Environment and Sustainability

Tara Lynne Clapp, Columbia Basin Watershed Network

Katrina Conners, Pacific Salmon Foundation

Steve Conrad, SFU's Pacific Water Research Centre

Jamie Constable, UVic's Water, Innovation and Global Governance Lab

Shannon Cowan, Salt Spring Island Watershed Protection Authority

Edna Cox, Save our Valley Alliance

Deborah Curran, UVic's Environmental Law Centre and Faculty of Law

Nick Davies, Real Estate Foundation of British Columbia

Celine Davis, BC Ministry of Environment

Donna Dean, Regional District of Kootenay Boundary

Wanda Dekleva, SFU's Faculty of Environment

Paul Demenok, Columbia Shuswap Regional District

Fin Donnelly, Member of Parliament, Port Moody-Coquitlam

Carolyn DuBois, The Gordon Foundation

Laura Dupont, City of Port Coquitlam

Eli Enns, North America ICCA Consortium and UVic's POLIS Project on Ecological Governance

Lee Failing, Compass Resource Management

Ramona Faust, Real Estate Foundation of British Columbia

Neil Fletcher, BC Wildlife Federation
Delaine Freidrich, BC Assembly of First Nations
Theresa Fresco, Fraser Basin Council
Margaret George, SFU Elders Program
Tanis Gower, Watershed Watch Salmon Society
Ian Graeme, BC Ministry of Environment
Deborah Harford, SFU's Adaptation to Climate Change Team
Kat Hartwig, Living Lakes Canada
Bonnie Harvey, Ktunaxa Nation Council
Kate Hewitt, UNBC's Natural Resources & Environmental Studies Program
Kathy Holland, Okanagan Nation Alliance
Richard Holmes, Xeni Gwet'in First Nation Government
Tiffany Hooper, Catalyst Paper
Ngaio Hotte, UBC's Faculty of Forestry
Michael Huck, SFU's School of Resource and Environmental Management
Jody Inkster, UAlberta's Northern Conservation and Environmental Sciences Program
Florence James, Penelakut Tribe, Coast Salish Nation
Nelson Jatel, Okanagan Basin Water Board
Nadia Joe, B.C. Legacy Fund
Eileen Jones, Pacific Salmon Foundation
Sylvain Jutras, ULaval's Department of Wood and Forest Sciences
Vicki Kelly, SFU's Faculty of Education
Sharon Kenoras, Tk'emlups te Secwepemc
Lynn Kriwoken, BC Ministry of Environment
Tim Kulchyski, Cowichan Tribes
David Lawrence, Nooaitch First Nation
Genevieve Layton-Cartier, First Nations Fisheries Council
Mark Lebbell, Sunshine Coast Regional District
Ellen Leslie, Heron Rocks Friendship Society Water Stewardship Project
Steve Litke, Fraser Basin Council
Peter Louwe, BC Wildlife Federation
Lana Lowe, Fort Nelson First Nation
Tamsin Lyle, Ebbwater Consulting
Tony Maas, Forum for Leadership on Water
Jessica Mace, Regional District of Kootenay Boundary
Emanuel Machado, Town of Gibsons
Deana Machin, First Nations Fisheries Council
Joan Makaroff, RRU's Environmental Science Program
Al, Martin, BC Wildlife Federation
Kiely McFarlane, UBC's Institute for Resources, Environment and Sustainability
Natalya Melnychuk, UWaterloo's Water Policy and Governance Group
Christine Mettler, Canadian Freshwater Alliance
Chris Midgley, Regional District of Nanaimo
Kate Miller, Cowichan Valley Regional District
Michael Miltenberger, North Raven Consulting
Simon J. Mitchell, WWF-Canada
Tim Morris, Morris Consulting
Robert Mountain, Namgis First Nation
Edda Mutter, Yukon River Inter-Tribal Watershed Council
Val Napoleon, UVic's Faculty of Law
Kevin Ngo, SFU's Environmental Science Program
Maria Nguyen, SFU's Department of Earth Science
Jonathan O'Riordan, SFU's Adaptation to Climate Change Team; UVic's POLIS Project on Ecological Governance and Centre for Global Studies
Natasha Overduin, UVic's POLIS Project on Ecological Governance, Centre for Global Studies
Megan Peloso, Lake Windermere Ambassadors
Ralph Pentland, Forum for Leadership on Water
Boyd Peters, Sts'ailes First Nation
Julie Pisani, Regional District of Nanaimo
Susi Porter-Bopp, First Nations Fisheries Council
Stan Proboszcz, Watershed Watch Salmon Society
Richard Prokopanko, P. Richards Inc.
Brian Riddell, Pacific Salmon Foundation
Ian Rogalski, Environment and Climate Change Canada
Remko Rosenboom, BC Ministry of Forests Lands and Natural Resource Operations
June Ross, Vancouver Island Water Watch Coalition
Sally Rudd, Compass Resource Management
Roly Russell, Regional District of Kootenay Boundary
Tom Rutherford, Cowichan Watershed Board
Jenafor Ryane, Rivers Without Borders Canada
Matt Rykers, City of Campbell River

Wayne Salewski, Nechako Environment & Water Stewardship Society

Rosalie Sawrie, One Cowichan

Dianne Sanford, Sunshine Coast Conservation Association

David Schaepe, Stó:lō Research and Resource Management Centre

Hans Schreier, UBC's Faculty of Land and Food Systems

Leanne Sexsmith, Real Estate Foundation of British Columbia

Alan Shapiro, PGL Environmental

Monica Shore, Mount Arrowsmith Biosphere Region

Rosie Simms, UVic's POLIS Project on Ecological Governance, Centre for Global Studies

Mike Simpson, Fraser Basin Council

David Slade, Cowichan Watershed Board

Megan Spencer, UVic's POLIS Project on Ecological Governance, Centre for Global Studies

Shannon Squire, P'egp'ig'lha Council

Jennifer Swift, Centre for Global Studies, UVic

Kelsey Taylor, Kwikwetlem First Nation

Terry Tebb, Pacific Salmon Foundation

Tessa Terbasket, Columbia Basin Transboundary Youth Network

Jill Thompson, Cowichan Watershed Board

Christina Trotter, PGL Environmental

Ward Trotter, BC Ministry of Forests Lands and Natural Resource Operations

Jennifer Vigano, BC Ministry of Environment

Brian Wadhams, Namgis First Nation

Shayla Walker, Tides Canada Foundation

Jane Walter, Regional District of East Kootenay

Anna Warwick Sears, Real Estate Foundation of British Columbia

Bob Wells, Comox Valley Regional District

Michelle Wijesinghe, BC Nurses' Union

Sarah Wiebe, Department of Political Science; UVic's POLIS Project on Ecological Governance

Brian Wilkes, Brian Wilkes & Associates

Nicole Wilson, UBC's Institute for Resources, Environment and Sustainability

Ross Wilson, Metlakatla Stewardship Society

Janson Wong, Lower Fraser Fisheries Alliance

Pamela Zevit, South Coast Conservation Program

PHOTO: KELLY BANNISTER

APPENDIX 3: SOURCES AND CITATIONS

[1] The third biennial *Living Waters Rally* was held from September 27th to 30th, 2016 in Vancouver, B.C. For more information, see http://www.freshwateralliance.ca/lwr16

[2] United Nations (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. Retrieved from https://sustainabledevelopment.un.org/post2015/transformingourworld

[3] The 2016–2019 *Federal Sustainable Development Strategy* is available online: https://www.ec.gc.ca/dd-sd/default.asp?Lang=En&n=CD30F295-1

[4] Brandes, O.M. & O'Riordan, J. (2014). *A Blueprint for Watershed Governance in British Columbia.* Victoria, Canada: POLIS Project on Ecological Governance at the University of Victoria. Retrieved from http://poliswaterproject.org/sites/default/files/POLIS-Blueprint-web.pdf

[5] For a deeper exploration of building a collaborative consent approach to resource management decisions, see: Phare, M-A., Miltenberger, M., & Fontaine, P. (2015). *Collaborative Consent: A Nation-to-Nation Path to Partnership with Indigenous Governments.* Report prepared for the Minister of Natural Resources. Retrieved from http://aptn.ca/news/wp-content/uploads/sites/4/2016/05/Collaborative-Consent-Nation-to-Nation-Path-to-Partnership-with-Indig-Govts-Ishkonigan-et-al-Dec-20-15.pdf

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[8] *Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44, para. 76.

[9] The 1997 *Mackenzie River Basin Transboundary Waters Master Agreement* is available online: http://www.mrbb.ca/information/31/index.html

[10] The bilateral agreements between the GNWT and Alberta (2015) and GNWT and British Columbia (2015) are available online: http://www.enr.gov.nt.ca/programs/water-management/transboundary-water-agreements

[11] The *Northern Voices, Northern Waters: NWT Water Stewardship Strategy* is available online: http://www.nwtwaterstewardship.ca/introduction

[12] The *Watersheds 2014 Forum Consensus* is available online: http://poliswaterproject.org/sites/default/files/watersheds2014/Watersheds2014Consensus_FINAL.pdf

[13] See Brandes, O.M., Morris T., Archer, J.L., Brandes, L., Moore, M.L., O'Riordan, J., & Overduin, N. (2016). *Illumination: Insights and Perspectives for Building Effective Watershed Governance in B.C.* Victoria, Canada: POLIS Project on Ecological Governance, University of Victoria. Retrieved from http://poliswaterproject.org/illumination

[14] For more information about the Nechako Watershed Roundtable, see http://www.fraserbasin.bc.ca/Nechako_Watershed_Roundtable.html

[15] An initial version of the *Nechako Watershed Strategy* was released in October 2016. See http://www.fraserbasin.bc.ca/_Library/UFR/Nechako_Watershed_Strategy-31Oct2016-FINAL.pdf

[16] See Fraser Basin Council. (2015). *Collaborative Watershed Governance: Keys to Success and Current Examples in BC.* Discussion Paper. Retrieved from http://www.fraserbasin.bc.ca/_Library/Water_BCWF/Collaborative_Watershed_Governance_Keys_to_Success_and_Case_Studies-May1-2015.pdf

[17] See Centre for Indigenous Environmental Resources and First Nations Fisheries Council. (2016). *Indigenous Watershed Initiatives and Co-Governance Arrangements: A British Columbia Systematic Review.* Retrieved from http://www.fnfisheriescouncil.ca/wp-content/uploads/2015/09/BC-Systematic-Review-Project-Report_Sept-15-2016.pdf

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[23] For more information about the Indigenous Law Research Unit, see http://www.uvic.ca/law/about/indigenous/indigenouslawresearchunit/

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