



A World Prematurely Dammed:

Improving on the Columbia River Treaty & Other Hydrological Anachronisms



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Slide 1: Title Slide

I wish to thank Stan Miller for his very kind introduction. I would also like to thank the organizers for arranging such privileged access and such high quality interpretation on yesterday's field trip. I would also like to thank everyone I met yesterday for their gracious hospitality and uncommon openness in sharing their views on the management of water.

I want also to thank this morning's presenters. It was refreshing to hear an American perspective on the reconsideration of the Columbia River Treaty. I was also excited to hear the Province of British Columbia's disposition on the matter.

That said I must say it was very bold of the organizers to grant the privilege of presenting the keynote of this conference to someone who doesn't live in this basin. There is always the fear that outsiders will make unfair judgments based on imperfect knowledge of matters of local custom and priority. I will try my best not to do that.

I care very much about your basin. I hope that the outside perspective that I bring will be of some use to you as you undertake what I consider one of the most important treaty reconsiderations with respect to the management of transboundary water resources happening in the world today.

Slide 2: The Global Water Crisis

As experts in water management, all of you are familiar with the kinds of problems we face with respect to freshwater supply globally. There simply isn't enough of it available – at high enough quality – when and where we want it.

Slide 3: Human Population Growth & The Trade-Offs It Creates

The reason we need to respond to this important global trend is resides in the realization that in order to provide water and other benefits to people, nature ultimately needs water, too.

The growing realization of nature's need for water revolves around new understanding about how different kinds of ecosystems actually generate, capture, purify and release the water we use. It follows that if natural systems play such an important role in the global water cycle, nature can't be where we send water only after we have taken all we need.

Unfortunately, a full 40% of humanity is now competing directly with nature for water. As a result we are beginning to see some frightening convergences.

If we give nature the water it needs to provide important basic ecological services then that water will have to come from agriculture which means people will starve.

If, on the other hand, we give agriculture the water it needs to keep feeding our growing populations, then there will not be enough water to allow nature to sustain fundamental, long-term planetary life-support function and self-regulation.

Our political institutions are not well equipped to deal with these kinds of zero sum trade-offs.

Slide 4: Reconsidering Fundamental Principles of Water Governance

There is little question that the availability and equitable distribution of global water resources rank among the most profound political challenges of the 21st century.

Whether the issue is one of reconsideration of the Columbia River Treaty, how to ensure the sustainability of groundwater in the Middle East, or how to improve the efficiency of agricultural water use worldwide, everyone concerned seems to arrive sooner or later at essentially the same conclusion.

The coming decades will require fresh perspectives on water resources that we have long taken for granted; as well as reconsideration of fundamental principles of water resource governance and public policy.

My interest in being before you today is this: While international water treaties have been existence for centuries, exploding populations, growing water scarcity globally and eco-climatic change are testing all preconceptions about how such agreements need to be constructed in order to serve the common good and reduce the potential of conflict in periods of rapid change.

The Columbia River Treaty is not the only major transboundary agreement presently under critical scrutiny.

If you are able to transcend the negative conditions imposed upon this basin by a fifty year old treaty, you can teach the rest of the world how to accomplish the same goal.

[Slide 5: Successes and Failure Abroad: Ataturk Dam in Turkey](#)

Ours is the greatest of all hydraulic civilizations. By the year 2000, we had constructed some 45,000 large dams that in combination with the hundreds of thousands of smaller structures quadrupled water storage for human purposes in only forty years.

Depending upon the time of the year, three to six times the water that exists at any given time in all the world's rivers is now stored behind giant dams.

International water agreements are often used as mechanisms for fostering and institutionalizing political cooperation on international river systems that have been dammed. Since water resources are being driven to the edge of their natural limit, today even the most cooperative neighbouring states can find it difficult to achieve mutually acceptable arrangements over shared water resources.

While nearly all states agree that customary international law exists to aid in the development and maintenance of such agreements nations more often than not ignore such conventions in defence of their own self-interest.

The main principles embedded within international law include the need for basin-wide development and management of water resources; appropriation of resources according to water rights rather than political and economic or military power; and the joint management of resources by all who share the basin.

Increasingly the focus is on equity and justice in situations of unequal power. Unfortunately, however, these principles appear to be more ideals than practices. This is one of the reasons people like me are interested in what is happening in this basin. You have the potential to translate ideals into practices. You could actually achieve what so many others would like to do – but it won't be easy.

Slide 6: Successes and Failure Abroad: Tigris Euphrates

In real life, regionalized cooperative arrangements along river basins do not always operate as expected or as well as they have here in North America; and when I say that I referring principally to the Boundary Waters Treaty between Canada and the United States.

Not all bilateral agreements work. In the case of the Joint Technical Committee in the Euphrates-Tigris river basin –efforts aimed at coordinating development of shared water resources have failed utterly. The reason for this is that Turkey used the terms and conditions of a 50 year old treaty to justify the unilateral development of 16 dams that dramatically reduced flows of the Tigris – Euphrates system into neighbouring Syria and Iraq.

When Kindy Gosal and I travelled there in 2004, we were accompanied by a military convoy that included an ambulance in the event that we should find ourselves under rocket attack. Evidently, some countries don't like to have their water supplies cut off.

Slide 7: Successes and Failure Abroad: The Ganges

Failing also is the Indo-Bangladesh Joint Rivers Commission, a coordinating body that came into existence in the early 1970s to help manage and resolve disputes along the course of Ganges River.

This situation has not been eased by the fact that India is building a wall between itself and Bangladesh to keep out refugees expected to number in the millions as a result of sea level rise.

Slide 8: Successes and Failure Abroad: The Jordan River Basin

Then there is the Jordan, far and away the most famous and most controversial of all of the world's transboundary water issues. At present Israel has twice the water available per capita to its people than neighbouring Jordan; almost three times the amount of water granted to those living on the West Bank and nearly six times it grants Palestinians on the Gaza Strip.

What many observers claim is that Israel is occupying a neighbouring country illegally and then holding those who live in that country ransom by denying them access to their own water. Palestinians find it an affront to be asked to negotiate rights for water they believe is theirs.

Israel has also been criticized for not honouring its own water agreements even after agreeing to them. The only reason this situation hasn't become a full-blown crisis is that is that water scarcity is being managed through the importation of water embedded in food.

It should be noted, however, that the situation in the Middle East is not as uncommon as one might think. Many water treaties are based on words not waters.

Increasingly we are seeing creative language being employed to cajole or force weaker riparian neighbours into submission or that important conditions are not included in treaties thereby rendering them meaningless.

What are we to think of governments that engage in long, complex, contradictory negotiation processes on water or on related climate-related water matters that are not meant to work?

While I have made the case that there are physical and climatic similarities between the Jordan and the South Saskatchewan in Canada, I wasn't sure the analogy extended to the Columbia at least to the extent that the CRT deals with only two parameters, flood control and power generation.

The Jordan River Basin situation, however, is interesting because it is mired in politics associated with borders, sovereignty, the sharing of a multiply sacred capital city; settlement in occupied territories; refugees; and equity in water allocation and use.

There are First Nations on both sides of the border that might perhaps argue that some of the same issues remain unresolved with respect to the Columbia.

Slide 9: Successes and Failure Abroad: The Three Gorges

Others have followed more precisely in our hydrological footsteps, emulating and even transcending our efforts to take full advantage of their water resources.

I was in China recently where we were relentlessly exposed to the inevitable self-congratulatory propaganda touting the various technical and economic miracles wrought by expansive dam construction.

There were billboards everywhere advertising the happier lives, greater prosperity, middle class leisure, unlimited recreation on clean, clear waters and, of course, an ever brighter future that would come in the wake dam building and the cheap and abundant power that would suddenly be available.

The Chinese officials went to great pains to ensure that we only saw and heard what they intended us to see and hear, but it was impossible not to notice the landslides or to sense the seething resentment of the locals in the street.

It was déjà vu all over again except that in this case the number of people displaced was equal to nearly 10 times the entire population of the Columbia Basin in Canada.

They too, it appears, are on the cusp of learning that while some is good, more is not always better. Stay tuned. Fifty years from now they may be having the same conversation you are having in this basin.

Slide 10: So what can we learn that would be help in the Columbia Basin

So what might we learn from these examples that would be helpful in the renewal of the Columbia River Treaty?

The first thing we learn is that once crafted, such treaties are difficult to change. We learn also that there are sometimes good reasons for that. And some not very defensible reasons also.

Slide 11: What makes treaties so hard to change?

So why are transboundary water treaties so hard to craft and so difficult to change? To answer that question we have to understand what treaties are meant to do. Treaties are important in that they are designed to become blueprints for investment in what is expected to become an improved social and economic status quo.

When treaties make them feel secure about the future, governments and people are free to invest in the benefits such treaties are expected to deliver in ways that can effectively and rapidly enhance prosperity. That is the way *it is supposed to* work. The flood control provisions of the Columbia River Treaty were supposed to lead to investment in irrigation.

Hydropower generation was supposed to encourage the growth of a strong industrial society characterized by thriving cities in both countries.

The treaty did what it was expected to do. To that extent the Columbia River Treaty has been uncommonly successful.

[Slide 12: Treaties Create & Become Their Own History](#)

Because of their often central role in defining the identity of a region, treaties become historical artefacts in their own right. As the positive terms and conditions of transboundary agreements are fulfilled, information is invariably constructed to profile the benefits that accrue. This information gradually comes to reflect history in a manner that supports the views of the specific interests that benefit from the conditions of the treaty. Eileen Delahanty Pearkes has documented this process clearly in this basin. But you are hardly alone in this.

If you don't think public policy can inform history I invite you to consider Alberta and the historical information it continues to construct aimed at justifying and defending its decision to make the oil sands the main driver of its political and economic future.

Historical information is invariably constructed to affirm the wisdom and inevitability of adopted policies and as a way of rooting popular thinking around the acceptance of sometimes difficult decisions that we have to make to perpetuate prosperity.

Millions are spent every year ensuring that people are reminded of the benefit and that the roots of political support for these choices don't wither. I have already pointed out how the same process is operative in China. Some may object to how truth is altered or covered up, but this is how history works.

It has to be remembered, however, that a treaty like the one crafted on the Columbia is like a crystal around which all of history radiates outward through time. The strengths of the treaty become evident and magnified over time but so, too, do its weaknesses.

Over a period of 50 years those weaknesses can stand out boldly. The Columbia is hardly unique in this. It is a problem that the entire hydro-structural mission the 20th century continues to face, globally.

Slide 13: Both Strengths and Weaknesses of Treaties Become Apparent Over Time

The past disagreements and conflicts that were supposed to be put aside and bitterness meant to be forgotten as those affected age and finally die do not always go away. They can be inherited by subsequent generations.

Environmental concerns that may have be glossed over during the crafting stages of a given treaty sometimes become far more serious than imagined at the time.

Why – one might ask – is it so difficult even in the face of clear and obvious weaknesses in the terms and conditions of transboundary water agreements to effect reform?

Slide 14: Sometimes change is slow for very obvious and simple reasons

Sometimes the answer to the question of why reform of the terms of transboundary agreements is so difficult to accomplish is not that complicated. Simple social inertia can stand in the way of change. That inertia can take a number of forms.

First of all, the terms and conditions of the treaty may not permit or encourage reform. Treaties are usually designed to create stability not undermine it. The terms of treaties can be such that they constrain the dialogue that is even possible regarding reform.

Issues related to flood risk management and power generation, for example, can be made to overwhelm and exhaust discourse at the expense of other conversations. Monopolization of discourse along technical lines can actually become a negotiating strategy.

Another reason reform can be difficult is that institutions and bureaucracies can lack capacity. Poor states or provinces or jurisdictions with weak governments may not be able to mobilize the resources or the expertise to achieve reform.

Governments may have other priorities. In the same way that people like me put off jobs that I don't like doing or don't feel they need to do governments may simply not want to undertake the hard work of reform.

[Slide 15: The Role of Social Adaptive Capacity in Effecting Change](#)

A big obstacle to reforming water policy in general and renewing transboundary water treaties specifically is social adaptive capacity. People don't want to be bothered and they don't want to change.

A deeply embedded sense of individual entitlement, a generally high level of prosperity and a desire to protect what you have at any cost can allow people and politicians that represent them to become adverse to change. Add to this the self-cancelling nature of partisan politics and the reduced capacity of much diminished and sometimes lazy bureaucracies we see how it is possible to arrive at ineffectual public discourse on matters such as these. It is just too much damn trouble to change.

Slide 16: Reform Can Be A Politically Dangerous Act

Finally – and perhaps most importantly – it has to be recognized that attempts at reform can be politically dangerous acts. Those bringing forward economic and environmental facts of life which contradict the deeply held belief systems of the larger populace can bring down a world of grief upon themselves if they do not shape their message and pace its delivery with accord with political realities.

Though it cost him enormously in political terms for saying it, the first North American leader to actually admit to seeing what was clearly hidden in plain view by politics and self-interested public relations, was U.S. President Jimmy Carter.

In 1982, Carter was confronted with a list of dam construction projects he felt would “be ill-advised if they didn’t cost anything.” He made this note in his diary:

I understood the importance of these long awaited projects to the legislators, but during the years since their initial conception circumstances had changed, environmental considerations had increased in importance, costs and interest charges had skyrocketed, other priorities had become much more urgent, and any original justification for some of the construction had been lost forever. Still the inexorable forces toward legislative approval moved on. Other recent Presidents, graduates of the congressional system, had looked on the procedure as inviolate. I did not, and dove head first to reform it.

Slide 17: The Reality that is Hydro-Structuralism

One of the main reasons the hydrological mission of the 20th century stalled is that development continued to race ahead of the knowledge of consequences. But Carter did not succeed entirely in reform and his party was punished severely for trying.

As no less a water expert than Peter Gleick is fond of saying, dam proposals possess the qualities of the “undead”. You can kill them again and again but they continue to rise from the grave when you least expect it. Gleick’s “undead” continue to haunt the very heart of political process, not just in North America but around the world.

Cement-oriented 1960s hydro-structuralism remains deeply embedded in our culture. There are reasons for this. One reason is that there is a lot of 1960’s cement around; and it has to be managed. There is big money riding on this management.

Nineteen-sixties hydro-structuralism also persists for political reasons. As Stockholm Water Prize winner Tony Allen has pointed out, political processes are designed to facilitate the interests of the powerful who in turn want to stay in power. Politicians recognize that their continuation in power depends on the convergence with their water policy with that of the majority of water users.

So deep are the belief systems that politicians are loathe to contradict them, even though the measures may be essential for the stabilization of the political economy.

This is why even when threats and hazards are seen to become more dangerous and more obvious, they simultaneously slip through the net of proofs, analyses and policy reviews which our legal and political systems have created to capture them.

Slide 18: Water & Politics

Thus we see that transboundary water decisions have less to do with hydrology than politics. Second or third best options will often do if they do not bring about political tumult.

Treating river basin issues as upstream-downstream riparian issues is way easier politically than viewing them as common pool resource problems. If my international experience serves me at all, my guess is that there are already interests who are telling the residents of the Columbia Problem-shed that once the concrete has set nothing can change; or that there is no need to do so.

Given my experience elsewhere, I would be very surprised if there aren't powerful interests on both sides of the border than would prefer that power authorities simply inform the Government of Canada and the U.S. State Department of what they want the outcome of treaty reconsideration to be.

For your sake, I hope that is not what happens. What we saw at Wanapum Dam yesterday proves that change is possible. Things should change and they can.

We do not manage watersheds anywhere in the world on the basis of purely hydrologic principles; our choices are invariably based on how order can be maintained by pleasing enough people to sustain that order. If enough politically active people want it, full reform is possible.

[Slide 19: Full Reform is Possible](#)

Canada's Northwest Territories has demonstrated that full reform of water policy is possible within existing political structures in North America. The European Union Water Framework Directive has demonstrated that the terms and conditions of transboundary agreements can be reformed in a decade if they are seen by enough people to be damaging to the environment, self-serving or fail to meet their socio-economic promise. This can only occur, however, in vibrantly functional representative democracies.

Others elsewhere have learned the hard lesson that allowing the fundamental beliefs that support political systems to remain unexamined and uncontested over long periods can be very damaging to the environment and to social and economic stability and vitality. So is “happy talk” about possible reform.

Slide 20: Why you have no choice but reform: the global hydrological cycle is changing.

What is happening elsewhere in the world also invites one further consideration. You cannot afford to sustain the status quo and just carry on as you have because that is the easiest option.

Nor can you allow the politics associated with the renewal of the Columbia River Treaty to atomize into competing camps with zero-sum agendas. Canada and the U.S. have to cooperate on the Columbia if only because of this very simple fact. The planet’s hydrological cycle is changing; and the Columbia Basin – like basins everywhere else – is going to be affected directly or indirectly by these changes.

Slide 21: Non-Stationarity

To understand why additional human-caused climate warming is such a threat to established stability it is important to understand the central role that water plays in our planet’s weather and climate system. The fundamental threat that climate change poses relates to what hydrologists call stationarity.

Within the broader hydro-climatic context, stationarity is the notion that there will always be approximately the same amount of water available in any given place or region as we have come to expect.

Stationarity implies that seasonal weather and long-term climate conditions will fluctuate predictably within established limits. The fact that we have determined that natural phenomena fluctuate within a fixed envelope of certainty has permitted us a relatively high degree of certainty when it comes to predicting and managing the effects of weather and climate on our cities and our agriculture.

Unfortunately, however, that certainty no longer exists. What is happening now is that increased mean atmospheric temperatures are altering the patterns of movement of water through the global hydrological cycle.

This means that the statistics from the past related to how surface, subsurface and atmospheric water will act under a variety of given circumstances are no longer reliable. This, we have recently discovered, is a lot more serious than we at first thought.

[Slide 22: National Academies Report](#)

A report entitled *Global Change and Extreme Hydrology, Testing Conventional Wisdom* was published by the National Academies of Science in the United States in late 2011. It confirms how serious the loss of hydrologic stationarity could be in North America and around the world if current trends persist.

As this report confirms what hydrologists have been observing for more than a decade in the United States its findings should be of equal interest in Canada.

The findings of the National Academies analysis include consensus on the fact that anthropogenic land cover changes such as deforestation, wetland destruction, urban expansion, and the pervasive impact of water engineering in the form of impoundment, irrigation, and water diversions have significant impact on the duration and intensity of floods and drought.

Slide 23: National Academies Report Quote

The report observes that predictions related to the occurrence of major hydrological extremes are presently based on the notion of stationarity, but observations now demonstrate that stationarity is no longer a valid assumption. The report concludes that **“continuing to use the assumption of stationarity in designing water management systems is, in fact, no longer practical or even defensible.”**

The old math and the old methods no longer work. This is one of the reasons forecasters were unable to predict the extent and nature of flooding and control it through dam operation in the Central Great Plains last year.

What happened in Saskatchewan, Manitoba and North Dakota in 2011 could be viewed as evidence that warming atmospheric temperatures have already begin to “accelerate” the global hydrological cycle which is expected to result in more frequent and severe floods and droughts widely. The algorithm upon which this assertion rests is called the Clausius-Clapeyron Relation.

Slide 24: The Clausius-Clapeyron Relation

Formulated in the mid-19th century by a German physicist Rudolf Clausius and a French railway engineer Benoît Clapeyron, the Clausius-Clapeyron Relation establishes that the amount of water the atmosphere can hold increases by about 7% per degree Celsius, or about 4% per degree Fahrenheit. The anticipated changes in precipitation inferred by the Clausius-Clapeyron equation are reasonably well simulated in global climate models. They have also been confirmed by scientific research findings that have demonstrated that more intense precipitation and more severe drought world-wide compared to the past 40 – 50 years.

Slide 25. The New Normal

We do not as yet have an adequate replacement for stationarity statistics. Until we find a new way of substantiating appropriate action in the absence of stationarity, risks will become increasingly difficult to predict or to price not just in the Columbia Basin, but widely.

Slide 26: Attack of La Nina Poster

I keep hearing that many people living in the basin don't think climate change is going to have that much of an effect on the basin. Frankly, I don't believe that for a second.

I would urge you to consider not just projected changes in streamflow in the Columbia system but the consequences of the reduced refrigeration effects of a smaller snowpack and less snow cover especially in the upper reaches of the basin.

Snow and ice cover is shrinking lowering the albedo and increasing the absorption of solar radiation which is in turn increasing temperatures which further reduces snow and ice cover. We are not sure where all of this is going to go.

Slide 27: Climate Change in the Columbia Basin

But we can surmise this: even if you escape direct effects, or should I say especially if you escape significant effects water availability, flood control and hydropower capacity will be big draws in places that lose eco-hydro-climatic stability as a result of warming temperatures such as the U.S. Southwest and the Central Great Plains.

As I have said so many times the demographic movement in the future will be inland away from the rising sea levels of coastal regions, uphill to cooler temperatures and toward water.

It appears the Columbia Basin has it all. If you are lucky enough to avoid substantive climate effects your successful adaptation will still be far from assured.

Slide 28: Columbia Basin Treaty Renewal as a Precedent-Setting Example

Finally, I wish to draw your attention to the not insignificant matter of your example and your precedent. What you do with respect to renewal of the Columbia River Treaty matters to others.

In Canada, British Columbia, Alberta, Saskatchewan and the Northwest Territories are in the midst of negotiations over the joint management of the Mackenzie River system.

The Northwest Territories is in a difficult position in these negotiations in that they have crafted what many experts consider a leading edge water stewardship strategy aimed at managing water and aquatic systems as a means of protecting traditional ways of living in the north and as a mechanism for adapting to rapidly changing climatic conditions.

The Mackenzie Basin is unique in that, unlike the Columbia, its significant contributions to bio-diversity-based planetary life-support system function were discovered before proposals for major dams – not after. They can learn much from you; and perhaps you from them.

The fact remains, however, that if British Columbia and Alberta demand the right to do what they please with the water within their jurisdictions, the Northwest Territories will not be able to achieve the goals of its water strategy which means they will have to give up any hope of sustaining ecological or cultural stability over the long term.

One might well ask what net benefit would there be if you worked to improve the terms and conditions of the Columbia River Treaty and then just went ahead and then made the same mistakes you made in the Columbia all over again in the Mackenzie? At the moment at least, the opportunity for enlightened basin management of Canada's largest river system remains alive. Stay tuned.

[Slide 29: Elements of a Successfully Renewed Columbia River Treaty](#)

There is a growing recognition that transboundary arrangements can only work effectively when they include clearly defined mechanisms for conflict resolution; allow for transparent public participation; have access to reliable expert knowledge to address issues that exist and emerge; and that incorporate protocols that recognize knowledge uncertainty and that are flexible under changing circumstances.

It is also critically important that all interests are represented in collaboration before the decision-making process begins. These governance features will become more important than ever as loss of stationarity and other direct and indirect climate effects become more obvious and persistent.

I must point out, however, that it is not the mere presence of these design features that matters. You can say you have them all, but if they are not active or don't work, pointing to their existence is merely illusion.

I think it would be fair to say that the Columbia River Treaty has been adaptive to the extent that it has addressed some mistakes. It has also monitored changing conditions and made mid-course corrections in matters related to hydro-power generation and flood control. Its signature weakness is one shared by dozens of similar fifty year old treaties. It responds to too few parameters. Successful renewal of the Columbia River Treaty will require coming to terms with your own history.

I was thrilled to hear all the speakers this morning referring to the need for public engagement. The public will have to be assured that decisions related to the renewal of the treaty are not – as they have been in the past – preformed or pre-decided.

Slide 30: Understanding the Role of Science in the Renewal of the Treaty

Science is also critical in such negotiations but it cannot be for show. It has to, however, be harnessed to political will. To be successful riparian neighbours have to recognize that jaundiced or prejudicial use of scientific evidence to justify a political decision over the management of water has time and again been used to thwart reform, or reformers.

Slide 31: Issues of Equity Matter

As my colleague Helen Ingram has consistently argued, no lasting settlement of water allocations ... is likely to be built on perpetuated inequity. To achieve equity, she argues, “requires sharing costs and benefits fairly, accommodating a plurality of values, establishing a widely inclusive political process, honouring social contracts and commitments, and protecting the needs of future generations.”

As water scholar Paul Hirt demonstrates in *Water, Place and Equity*, the case study of rivers, hydropower, and salmon in the Northwest shows that river managers and developers in both the United States and Canada have violated each of these equity principles for more than a century.

Not surprisingly, those perpetuated inequities cause a great deal of social and political grief beginning in the 1960s and accelerating to the present.

Achieving equity will not be easy or painless, but from my outside perspective, the Columbia River Treaty has the opportunity to become the first 50 year old transboundary water agreement in the world to be effectively reformed so as create a living blueprint for how people would like to live in the Columbia Basin and in basins like it now and in a sustainable future.

Slide 32: Three Crucial Elements of Renewal

There are three things that I would urge the residents of the Columbia Basin to insist upon in negotiations related to the renewal of the Columbia River Treaty.

The first thing a renewed treaty must do is make up for and make good on matters related to injustices that today would be judged as outright human rights violations that took place as a consequence of the non-inclusive manner in which the treaty was negotiated and its final conditions imposed upon those who were made subject to its terms.

The second goal a renewed treaty should achieve is the restoration of lost ecological elements and conditions that fifty years later are now seen to be of far greater importance than the architects of the original treaty were able to imagine.

The third goal of a renewed treaty should be to lay down the foundation for the on-going improvement of social and economic resilience in the face of direct and indirect effects of climate change not just in the basin, but in surrounding regions.

In conclusion I wish to thank the organizers of this conference for the opportunity to make this presentation. While I may not live in your basin but I know how important the Columbia is to the Pacific Northwest and to Western North America as a whole.

In preparing for this presentation, I was reminded once again of the potential we in North America have to create a new world order based on wise management of water resources. I see renewal of the Columbia River Treaty, for example, as a means of water act modernization, not just in British Columbia, but throughout the rest of the continent.

I see it as a foundation for the hope that a next generation of water treaties will inspire other progressive transboundary agreements crafted on the basis of enlightened new principles in places like the Mackenzie Basin.

But most of all I see it as an opportunity to show the world how to shed the limitations of the past in ways that will allow others to use your example to break out of the prisons of treaties that no longer respond to the realities they face and that are emerging as the global hydrological cycle responds to a rapidly warming atmosphere.

Finally, as Yakima elder Gerald Lewis reminds us, we have to keep in mind that we are not reconsidering the Columbia River Treaty just to satisfy ourselves. We are doing this for future generations.

What is happening in this basin matters to the world. In this globally important effort, I wish you every success.

Thank you.

[Slide 33: Return to Title Slide](#)