



Reflections on Water

Stories about water as told by artists



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Slide 1: Title Slide

First, please allow me to thank the Columbia Basin Trust for making it possible for me to be here today. I would also like to thank the Touchstones Gallery for their invitation and for their kind hospitality.

It is an honour to be invited by Deb Thompson to be part of an important museum exhibition on water and how it defines what is important about where and how we live in the mountain West. I would also like to thank Eileen Delehanty Pearkes for her years of shared interest on the history of this basin – and for finally taking me to the confluence of the Kootenay and the Columbia this afternoon.

I have always believed that art is an important medium for sharing understanding of what is important about our relationship to one another and humanity's relationship to the rest of the world. Art, in my estimation, is a form of perceptual leadership. Meaningful art allows us to see clearly into the depths of reality and to return again to the surface of our everyday lives with new insights and hope for the future.

People tend to trust art, not just because it speaks on so many levels to so many matters that are of importance to us; but because artists speak sincerely from the heart.

Art is really the only effective antidote to the public relations spin that has come to dominate opinion in our time. I know from personal experience that it can be hazardous to work in situations that rely too heavily on spin. The intent of spin – as everyone here knows – is to shape the perceptions and actions of others around a vision of reality you and your colleagues have created to defend or advance singular interests. The risk is that over time – and by way of much repetition – you start believing your own spin. And that is when the unseen whale that is the larger truth invades.

Slide 2: Reflections on Water: Gallery Overview Image

Art is one of the few antidotes we have to counter spin in our time. Authentic art is not self-interested. It risks everything to speak truth to power. That it is unafraid of doing so is why art matters.

The most wonderful quality of enduring art is that it demands the active critical engagement of those who view it to give it meaning and value. To endure over time works of art must not just have immediate but lasting impact. It must speak not just to the here and now but to every historical period in which it is viewed.

This is a good time in our history as a nation to reflect on water. In that respect, the Touchstones Gallery exhibition does not disappoint. It is an exhibition with a great deal of intended and perhaps unintended meaning.

Slide 3: Single Vessel

As anyone who would attend a presentation like this will know, we are all vessels containing a great deal of water. On average some 70% of our body weight is water. That is true also of most living things. It should hardly surprise us, then, that we eat 70 times more water than we drink.

Slide 4: Multiple Vessels

What is surprising, however, is the extent to which rivers within us yearn for rivers without. Though water tends to repel organic compounds, it is strangely attracted to most inorganic substances, including itself. Water likes to be around other water. Its molecules, in fact, cling to one another more tenaciously than those of many metals.

You can observe water's remarkable qualities of self-adhesion if you sit by a river. Water sticks together. Water draws water with it. Sit on a riverbank long enough and you might observe that water likes to sing. The faster it moves the louder it sings. Still water barely whispers, falling water roars. There is a reason we feel different when we are in the presence of large volumes of water. Water reacts to almost everything and almost everything reacts to water. The feeling you get standing on the edge of river or a lake or beneath a thundering waterfall may be aesthetic but it is physical, too. Your body is aligning itself with the molecular attraction of the water and the water is aligning itself to you.

The effect can be even more pronounced when you stand by the sea. Ankle deep in surf, the water in our inner cellular seas yearns for the salty sea without. The water within us feels the tug of the tide. We know water, but water also knows us.

Go to the kitchen. Turn on your tap. Let the water run. Feel the cool moisture of wind and the wetness of cloud and rain.

Feel the cold of snow and the hardness of glacier ice. Hear thunder. Feel the river flow through your hands. Feel the water within you yearn for the water without. Fill a glass. Bring it to your lips. Search with your tongue for water's memory of far-away seas. Taste distant mountains. Feel the fissures in deep limestone tingle on your tongue. Hold the glass up to sunlight. See our star burn through the sparkling lens made of the most amazing of all liquids. Drink.

Repeat daily until fully and finally restored.

Slide 5: Waterfall Painting

The works in this exhibition put many of the problems we face with respect to how we care for our water resources into clear relief. There was a time in our history in which no one could have conceived of Canada ever running short of water.

This waterfall painted around 1955 comes from near the end of that period of innocence.

As global populations continue to rise, it should surprise no one that key resources such as water are often no longer available in the volumes and at the quality we would wish when we desire them.

Potential for conflict over water will grow as our population increases to a projected 9.4 billion and as climate change moves precipitation from where people have been historically concentrated to where they are not.

In many parts of the world cities and agriculture are now competing 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 planetary life-support function and self-regulation. Add serious groundwater overdraft in many of the world's food producing areas and the picture doesn't look very promising.

We should expect global food and water security to be among the most pressing political issues of our time. And we should anticipate Canadian agriculture playing an even greater role in addressing these issues.

There is absolutely no way we can prevent issues related to water availability in other parts of the world from backing into the North American context in other ways as well. The impacts of water scarcity and food shortages abroad will affect us economically long before the millions of people directly affected by them elsewhere clamour to emigrate here.

Given that the world will likely be relying upon us more heavily than ever to meet increasingly unattainable global food production goals and given that so much of our nation's economic productivity is already directly linked to abundant water resources, Canada's future economic success may well be defined by how carefully and effectively we resolve our own potential disputes related to the way we manage our water resources so that water availability and quality issues do not limit our environmental, social and economic future. That suggests that getting our own water management house in order is a matter of some urgency.

In the context of water resources management there are a host of areas of potential conflict over the way we presently manage our resources. A good many of these are clearly spelled out by works in the Touchstones exhibition.

Perhaps the most fundamental of these relates to our failure to resolve issues equity and justice with respect to First Nations rights to land and water.

Slide 6. 5. Addressing Unresolved Aboriginal Water Rights Issues

Marilyn James's charming creation story has more relevance than may be immediately apparent. The coyote created the Columbia River but he is not done with it. Pay attention to the trickster, because invariably when he is around things get turned inside out.

As lawyer Merrell-Ann Phare has observed in her new book, *Denying the Source: The Crisis of First Nations Water Rights*, most governments in Canada assert that they own the water within their boundaries. But she then notes that regarding waters that may be needed by First Nations there remains complete uncertainty as to who is in control of, responsible for, and can allocate that water.

Almost all Aboriginal Peoples hold that water is a common good and therefore cannot be owned. They disagree in principle with provincial control of such a fundamental resource. Phare points out that a number of First Nations have already taken to the courts to prove the existence of their unique Aboriginal water rights.

In Phare's opinion, one case in particular, that of the Piikani, gives us a good indication of how extensive Aboriginal water rights likely are and the strength of their claims.

The traditional territories of the Piikani (or the Peigan as they are also known) are located in south-western Alberta around the confluence of the Oldman, Castle and Crowsnest rivers.

The most controversial issue of the many that formed the Piikani's legal challenge relating to the building of the Oldman Dam was the assertion that the conditions of their treaty decreed that the Piikani Nation possessed rights to the waters of the Oldman River. It took 16 years until 2002 for the Governments of Alberta and Canada to settle this long-standing water rights dispute.

The settlement agreement included payments to the Piikani of \$64.3 million to be placed into a trust fund, annual indexed payments of \$800,000, \$3000 for each Piikani member, and \$32.7 million for the settlement of claims against Canada for having wrongfully taken Piikani reserve land. The Piikani also received rights to participate in the Oldman River Dam Hydro Project.

Financial considerations aside, the most significant elements of the settlement – according to Phare – are those related to access to water by the Piikani. Federal, and provincial governments agreed that the Piikani were assured water supply from the Oldman River to meet residential, community, and agricultural needs.

Slide 7. 5. Ktunaxa Dancers

In Phare's opinion, this requirement belies a startling admission. It makes it clear, she writes, "that the governments certainly understood that the Piikani indeed possessed water rights; the sizable financial package and

allocation of water to the Piikani indicates the expansiveness of those rights.”

“It further tells us,” she writes, “that the governments considered that the water rights of the Piikani were ‘first-in-line’ rights, meaning these rights were first in priority, ahead of all other existing and future users of the Oldman River waters in Alberta.”

What Phare does not say is that if this is the case, First Nations, depending upon the conditions set out in their treaty, are entitled to water first, before any other user. The Piikani settlement could blow apart the established first-in-time, first-in-right water allocation mechanism in southern Alberta and in other parts of the Canadian West.

What this suggests is that it is only a matter of time before our failure to adequately and consistently address longstanding human rights issues explosively alters existing water rights in parts of Canada. Then there is the issue of salmon in the Columbia and a certain treaty. Pay attention to the coyote, he is a trickster. He’ll be back.

Slide 8. Waterfall: Dispelling the Myth of Limitless Abundance of Water

For me Chris Welsby’s waterfall beautifully evoked the first and most fundamental change we have to make in our attitude toward water in Canada. On the immediate term, the first challenge we need to address relates to self-perception.

If we do not dispel the myth of limitless water abundance in Canada we will continue to make contentious public policy choices based on false assumptions of how much water we have that could have undesirable ecological, social and political consequences in the future. We may have 20% of the world's fresh water resources, but much of that is water in the bank left after the last ice age. We have only 6.5% of the world's *renewable* water resources and most of that is found in the north.

We spend far too much time in this country worrying about water exports and not nearly enough time thinking about the damage caused by our own short-sighted management choices. We have to solve our own problems first, before we satisfy the thirsts of others. If our American neighbours want our water, or if we want more for southern use, we are going to have to go north to get it, and that will be expensive both in economic and environmental terms.

The lesson here is that it would be wise to avoid creating unnecessary conflict by basing political decisions on accurate information about how much water we actually have. That means we have to have that information.

Slide 9. Water Baptizes Us All

The baptismal gowns on display from the permanent collection of the museum – in my mind at least – suggest how far we have distanced ourselves in this country from

the close connection to our water resources we once possessed.

There was a time in our history when our rivers were our highways and our livelihoods. During that long and formative period in our history Canadians carried a map around inside their heads of the country's major watersheds.

But with the arrival of the train, our travels became more linear and less connected to the major rivers that flowed across our land. Then came the car and a grid system of roads that went every direction. With the invention of the airplane our last terrestrial connection to our waterways was finally severed. We lost touch, in our everyday lives at least, with the sinuous, sensuous nature of our watersheds.

Where once we were a nation of waterways we are now a nation of pipes and taps. In a single generation, one life time, we have gone from being a country that was internationally proud of the fact that one could drink water out of any sparkling Canadian stream, river or lake to a country that is legitimately and genuinely concerned about water quality and availability now and in the future. That is what *Celetrias and Gravitas* is all about.

Slide 10. Celetrias & Gravitas

This is an important work. *Celetrias* is Latin for accuracy and swiftness. *Gravitas* – which should not be confused with gravity or weightiness – is the quality of substance in character; or depth of personality.

Gravitas was one of the several virtues that ancient Roman society expected men to possess. Given her experience of growing up at the Hanford Nuclear Site in Richland, Washington, it is perhaps no surprise that artist Karen Rice should ascribe the qualities of *celestias* and *gravitas* to water.

This work speaks of unseen pulses of contaminants within water that have been mobilized by dark intention. These six works together symbolize a frightening reality. We no longer know what is in our water.

Slide 11. Bathing As Ecstasy

As a person of the hot bath persuasion I really liked Nancy Rosenblum's *Bathing as Ecstasy* video installation. It bothers me very much, however, to realize how human demands for water could compromise such a fundamental human pleasure.

In places like southern Alberta and British Columbia water is simply becoming too precious to use only once before it is released downstream.

Treating and re-using wastewater has a number of advantages. First of all it provides a way of expanding water supply without having to having to construct dams, dig new wells or seed clouds with the hope of generating increased rainfall. Reclaimed water represents a renewable supply that literally increases in volume in lock-step with population growth.

Use of reclaimed water, however, has been a source of real conflict in some communities. While people don't seem to mind drinking water that has been treated after upstream use, there appears to be a stigma against drinking water reclaimed from your own sewer systems.

The fact remains that the amount of water on Earth has not changed appreciably since the planet was formed. We are all drinking water that has been drunk by others before us.

As Orange County in California has demonstrated, it is possible to re-use water many times without any apparent impact on its quality by employing a suite of water treatment technologies that include traditional microfiltration, reverse osmosis and ultraviolet radiation. But there is one concern that water re-use puts into relief that could become a source of serious dispute and real conflict in the future – and that is the growing amounts of endocrine-altering substances that are finding their way into our water supplies.

In his book *Unquenchable: America's Water Crisis and What to do About It*, Robert Glennon reports that up to 90% of the drugs we take leave our bodies unchanged and still active.

Glennon goes on to joke that the “dirty-old man” cartoon characterizations we all laugh about won't mean the same thing if men start getting uncontrollable erections from somebody else's Viagra.

Fortunately, the dark side of everyone being immersed in everyone else's drug use has yet to manifest itself. Even in Orange County repeat water re-use has not produced detectable levels of most emerging contaminants. The bad news is that the elimination of such contaminants is very expensive and highly energy intensive.

As our population grows, we will have little choice but to rely more and more on water re-use to meet our expanding supply demands. To avoid dispute and conflict we will have to convince the public that re-use technology is safe and reliable.

Slide 12. Riverspines

The growing realization of nature's need for water revolves around new understanding about how ecosystems generate, capture, purify and release water. Emerging eco-hydrological perspectives could become a foundation of a practical new definition of sustainability.

The central tenets of eco-hydrology are breathtakingly simple. Nature is of survival value to people and much of its survival value is established through the supply of fresh water. In order to provide water and other benefits to people, nature needs water, too. It follows, hence, that nature should be a legitimate water customer in its own right. Nature can't be where we send water as a last resort.

If we do not recognize nature's need for water, especially in dry regions, there will not in the end be enough water for cities, agriculture or nature.

The first lesson we might derive from international examples is that public policy in Canada would be wise to move toward supplying adequate water to nature before overallocation for human purposes makes it difficult to do so.

Tanya Pixie Johnson's *Riverspines* speaks to why we have to stop thinking of rivers as mere water pipes. We have to start thinking about rivers as flows of water on the surface of a living sponge floating on top of earthen blotting paper. Most of the water in many rivers is not found on the surface but trickles through the Earth as groundwater.

But there is much more. One of the most interesting research projects undertaken in the last century was conducted by Tom Reimchem, a biologist from the University of Victoria who spent eight years examining the relationships that existed between marine species on the Pacific coast and terrestrial ecosystems.

Reimchem began to study the concentration of marine-derived nitrogen in the surrounding forest so as to be able to determine the nutrient contribution the bears were making to the terrestrial ecology of Bag Harbour by hauling salmon on to the banks of the river. Reimchem discovered that nitrogen from salmon comprised 50% of the nitrogen in trees on spawning streams at Bag Harbour. He also discovered that marine-derived nitrogen from the decomposition of salmon did not just appear in plant communities close to the river.

Even at a distance of 150 metres from the water, it was still possible to trace measurable concentrations of marine-derived nitrogen introduced into the terrestrial ecosystem by black bears feeding on salmon.

It then struck Reimchem that salmon were involved in an ancient relationship with bears and eagles that included almost every other living thing in the coastal ecosystem. The purpose of that relationship was to evolve and sustain the terrestrial ecosystems of the islands.

Where once bears and eagles we seen solely as competitors for remaining salmon stocks in the Pacific Northwest we now see something else. The nutrient richness of the North Pacific swims upstream into fresh water rivers and is carried on to the land by bears. By hunting salmon, the bears give the forests their vitality and their life. There is something sacred here — something holy. And that is what riverspines are all about.

Slide 13. Form & Construction

The five paintings that compose the work called *Form and Construction* by Bouk Elzinga speak to me of water supply.

Every time there is a Federal or Provincial budget cut one of the things usually axed first is the long-term monitoring of our water resources and the related interpretation of what the data we have already collected means.

In the meantime we have continued to develop at a furious rate and now when we really need that data to make wise decisions about the future it is not there.

Slide 14. Glacier Creek – NOW!

This same theme is reflected in Julie Castonguay's Glacier Creek – NOW!

Because of climate change, the hydrology of our entire country is on the move. There is an especially crucial need for groundwater monitoring and for enhanced hydrological and meteorological observations and associated predictions in the high mountain headwaters of western Canada because it is at these elevations that climate change impacts are expected to be felt first and where they are expected to be most pronounced in terms of their impacts on water supply. Proposals to do exactly this remain unfunded.

We already know that long before global warming has finished reducing the length and depth of our glaciers it will already be after our mountain snowpacks with huge potential impact on everyone who lives downstream.

Changes in snowpack, however, are just the beginning of changes that will converge upon us over time. In anticipating these changes, however, the past may not be a reliable guide to the future.

This work also speaks to another serious problem. Most Canadians have yet to make the link between water use and energy costs. It takes a lot of water to produce energy and a lot of energy to move water. Both conventional and unconventional oil and gas development in western Canada require a lot of water and the quality of return flows is a growing source of dispute. But that is just the first tier of the problem.

We use a lot of the energy we produce to move water around so that it can be available for use when we want it. Water is heavy. It takes a great deal of energy to abstract, treat, distribute and re-treat it for further use. Leaving your tap run for 5 minutes costs the same as letting a 60 watt bulb burn for 14 hours. That calculation does not account for the downstream cost of greenhouse gas emissions.

We can avoid conflict over both water use and energy security by understanding the link between the two. Potential for dispute over issues like independent power projects will continue to grow until we start to really take water and energy conservation seriously.

Slide 15. Ghost Salmon

Patrick Field's *Ghost Fish* is one of the works in the exhibition that struck me most deeply. I am reminded of other incidents in nature where important species have disappeared.

While most of us would hardly consider such disappearances relevant in the context of our time, the ghosts of missing species are with us still today. Consider the prairie pronghorn. At the end of the last Ice Age, this animal was the central prey species of the North American cheetah.

While the pronghorn is still capable of extraordinary bursts of speed that would have been necessary to escape such a fast predator as the cheetah, that predator no longer exists on the Great Plains. The cheetah is gone and the pronghorn finds itself rather in the incredulous position of the incorrigible speeder who has continually improved the upper speed capacity of his vehicle so as to outrun the police only to discover that the police no longer exist.

If you live in the west you may have witnessed pronghorns trying to keep up with cars. One wonders if they miss the Pleistocene cheetah that once chased them hungrily across these same plains or if they are simply being pursued by ghosts.

One a similar vein, one might ask what the Rockies will be like without grizzly bears and what the world will be like without salmon.

For thousands of years, North America's Columbia River salmon runs were the most abundant on Earth. Columbia River salmon today are at a critical point.

The basin's salmon populations have been in steady decline over the past century, and scientific evidence demonstrates that environmental and biological thresholds important to salmon – such as water temperature – are being exceeded.

The National Academy of Science in the United States reports that trends such as human population growth in the region and prospective regional climate warming further increase risks to salmon survival. We are looking at ghosts. The plight of coast bear populations in the absence of salmon only hint at the diminishment and loss we can expect as marine and terrestrial systems fall like dominoes behind collapsing salmon populations.

Slide 16. Temperance

Destanne Norris' *Temperance* is equally sobering in terms of what it implies about water. Water is actually married to its symbolic and diametric opposite: fire.

There is a fine balance here. If you don't get one, you often get the other. In the absence of water you get fire.

Mike Flannigan of Natural Resources Canada is an expert on climate change impacts on our country's forests. Employing two contemporary climate change modeling suites, Flannigan and his colleagues have been able to predict the impacts increased carbon dioxide concentrations will have on the length of the fire season in Canada's boreal forests.

This important work suggests that the fire season will increase from 10 days to a whopping 50 days over much of the Canadian boreal. With a hotter, higher energy atmosphere, it is logical to expect a greater area of the boreal forest to burn each year.

Based on carbon dioxide increases alone, Flannigan and his colleagues predict a 75% - 120% increase the area burned each year by the end of the century.

Many people get very excited over this because they recognize there will be huge impacts on the forest industry and doubled costs for fire fighting. Yes, Canada is going to be faced with huge ecologically-related economic and social impacts. But again, if you want to know what really happening, follow the water.

Water is perhaps the most undervalued and under appreciated of all forest products. Upland forests are the continent's water factories. In many places in Canada, we are beginning to realize that water is worth more than wood.

Slide 17. The Boat

Though our society is powered by petroleum and lubricated by oil, it floats on water. Our society is a vessel in its own right. It is a lifeboat carrying us all over water toward the future.

Slide 18. The Black Canoe

Whenever I think of a boat carrying societies into the future I think of Bill Reid's famous Black Canoe. The Black Canoe is nothing less than a Haida ark; the complete physical reality and spiritual universe of an entire people in one boat in which everyone and everything paddles together toward the future. Eileen Delahanty Pearkes reminded me today of the greatest irony of all: that this image is on the front of the Canadian \$20 bill.

Though we largely ignore it, the same theme pervades non-Aboriginal art as well. Some of you will remember a poem by Margaret Atwood called *Progressive Insanities of a Pioneer* in which everything these artists have said about water is true. The conclusion of the poem is a chilling reminder of the point in our history at which we took a turn away from sustainability and how this may haunt us in the future:

*If he had known unstructured
space is a deluge
and stocked his log house-
boat with all the animals*

even the wolves

he might have floated

*But obstinate he
stated, The land is solid
and stamped*

*watching his foot sink
down through stone
up to the knee*

*Things
refused to name themselves
to let him name them*

*The wolves hunted
outside*

*On his beaches, his clearings,
by the surf of under-
growth breaking
at this feet, he foresaw
disintegration*

*and in the end
through eyes
made ragged by his
effort, the tension
between subject and object,*

*the green
vision, the unnamed
whale invaded.*

You can't say we haven't been warned.

Slide 19. The Boat (2)

If we want to create a sustainable society, we have need a different kind of canoe.

The boat in the exhibition is not crowded with men and totem animals. Though it is beautifully built, it is empty. It is empty because we are removing everything else but us from the world. And that's our problem.

I believe that all of the areas of potential dispute I have already mentioned can be resolved through patient, mutually respectful collaboration informed by good will and sound science. But they won't stay resolved unless there are changes in the way we govern ourselves.

Of all the areas of potential conflict that exist today, the one that troubles me the most is the failure of governance.

When I speak of governance what I am talking about are the principles and standards by which we allow our collective affairs to be managed.

On a global basis we don't appear to be managing our collective affairs very well.

Many people I talk to are finding it very difficult to believe any longer in a system that is prepared to bring us to the brink of global marine and terrestrial ecosystem collapse before acting on the requirement to calculate damage to our planetary life-support system into pricing, taxation and the calculation of real domestic product.

Others are losing faith in a system that regularly takes it upon itself to plunge future generations into huge debt to perpetuate what many perceive to be a bubble economy.

More broadly troubling is the fact that we refuse to see what is happening right in front of our very eyes with respect to our obsession with limitless growth.

This, however, is no time to give up on governance. There have been few times in human history when we have needed visionary governance more than we do now. Our sustainability depends on it.

Sustainable governance should begin with water. Dealing with converging water supply and quality issues is an important rehearsal for dealing with other troubling convergences that are occurring at the interface between humans and the global environment upon which we depend for economic and social stability.

Slide 20. The Touchstones Gallery Exhibition (2)

There has perhaps never been a better time to reflect on water, especially at the community where it counts and where change is easiest and most important to effect.

Reflecting on water, we see that there has never been a better time to work in this field. There are huge opportunities to learn; to put things right. There is also opportunity perhaps – looking forward to the reconsideration of the Columbia River Treaty – to restore some of what has been lost.

If there was ever a place to reflect meaningfully on water; it is here – and now, today.

Thank you.

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