

Syilx *siwłk^w* (Water) Management Principles and European Colonization: A Contrast of Ethics in the Okanagan Basin

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Methods: This paper is a combination of written research works (represented in **black** font) and Traditional Ecological Knowledge (TEK) sessions held in 2024, reviewed and edited by caylx (Richard Armstrong). TEK is represented in the **blue** font call-out quotes. Indigenous Peoples of the Okanagan Nation are the exclusive owners of their cultural and intellectual properties as asserted through the United Nations Declaration on the Rights of Indigenous Peoples (2007).

Place Names: *nsyilxcen* - English Translations

<i>nǰ^wəntk^witk^w</i>	Columbia River
<i>sq^wawsitk^w</i>	Okanagan River
<i>klusxən^witk^w</i>	Okanagan Lake
<i>sǰ^wəǰ^wnik^w</i>	Okanagan Falls
<i>iú?cin</i>	Skaha Lake
<i>nlux^wlux^włcwix</i>	Lower Trout Creek
<i>akspaqmix</i>	Vaseux Lake

The Syilx Environmental Ethic

The Syilx people of the Interior Plateau region of the $n\check{x}^w\text{antk}^w\text{itk}^w$ (Columbia River) basin have managed $siw\check{t}k^w$ (water) in the $s\acute{q}awsitk^w$ (Okanagan River) basin for thousands of years, adapting to everchanging environmental conditions. $siw\check{t}k^w$, the Syilx word for water, is derived from two parts: siw (from $siwst$ - to drink, as in human) and $\check{t}k^w$ (from $\check{t}k^w\text{itk}^w$ - to lap, as in animals; ONA 2017). This meshing together of the two parts into one word symbolizes the Syilx ethic that animals and humans have equal rights to water (ONA 2017).

i?_siw\check{t}k^w sx^w\acute{l}x^w\text{alt}\acute{t}

Water is our relation (Syilx water declaration).

Central to the philosophy of the Syilx environmental ethic is the concept of the $tmix^w$: the sacred life of all living things, or life-force (Armstrong 2010; Sam 2013). $Nsyilxcen$, the Syilx peoples' language, brings about the perception of $tmix^w$ as “a system of relationships being reconstructed limitlessly, and which is actually the life-force of the place” (Armstrong 2010). The people are a voice for the land, and the land hears them (ONA 2022). The $siw\check{t}k^w$ conditions that existed prior to European colonial contact were the direct result of the resource management principles practiced by the Syilx.

The laws of the natural world are within the Syilx because the Syilx *are* the land (Sam 2013). Each life form, including humans, is a $tmix^w$ with the capacity to spread outward in many strands (Armstrong 2010). The $siw\check{t}k^w$ connects the Syilx to one another, flowing through generations from their ancestors (ONA 2021). The Syilx Okanagan People flow with the $siw\check{t}k^w$. By being tied to the repeating cycles, life forms are indigenous to the land with a collective ability to regenerate each other (Armstrong 2010). Optimum human self-perpetuation is not human centered but relies on



the optimum ability of the environment to regenerate itself (Armstrong 2010). The existence of each life form comes from interdependent relationships with others in an order of reciprocity specific to place (Armstrong 2010).

Figure 1. The Pierre family at $nlux^wlux^w\acute{l}cwix$ (Lower Trout Creek).

Ecological knowledge is communicated across generations through *captik^{wł}*, the Syilx storytelling process, or “history as legend or myth” (Sam 2013), which acts as a feedback loop reconstructing the social paradigm. The Syilx environmental ethic is founded in the human knowledge of being responsible as *tmix^w*, achieved through individual free will and societal choices (Armstrong 2010). Historic accounts of the people are recounted through *smaʔmayʔ*, a genre of nonfiction folklore separate from *captik^{wł}*, which includes geographically-specific epic stories (heroic tales), significant historic events (disaster war, disease, etc.), and anecdotes of strange occurrences (Armstrong 2010). These oral storytelling practises, including significant historic events and ecological information, create strands of knowledge passed down through countless generations over a long range of environmental conditions.

suxq^{wa}?q^{wa}?lulax^w

Traditional Ecological Knowledge Keeper is a speaker for the land.

The Syilx *enowkinwixw* process is a consensus-making dialogue and “whole systems decision-making approach that encourages the exchange of diverse ideas and perspectives for the benefit and common good of the land, community, and nation” (Sam 2013). Through *enowkinwixw*, the Syilx situate themselves and their choices within a broader context (Armstrong 2010). The *enowkinwixw* process integrates diverse approaches and perspectives (Sam 2008) and ensures that decision-making and leadership considers the responsibility to the *tmix^w* first because all aspects of humans are *tmix^w* (Armstrong 2010). This indigenous Syilx analytical methodology encourages diverse theories and perspectives from “youth, elders, mothers, and fathers to collectively arrive at the best solution to a given problem” (Sam 2008; Figure 2). Through the *enowkinwixw* social paradigm and community voice, the Syilx peoples have endured millennia of environmental changes and adaptations specific to the Okanagan (Sam 2008).

When I was young and the river wandered like a snake, we would fish for salmon and our family would camp together along the riverbank. Many families would also be camped along the banks, and we could see the many fire glows at night as family’s would be telling their fishing stories. The river didn’t flow straight back then. This was special family time and gave us a great sense of community. – caylx

The *captik^{wł}*, or “How Food Was Given,” defines the customary laws of the Syilx by recounting how the Four Chiefs: *skəmxist* (Black Bear), *ntitiyx* (Spring Salmon), *spitłm* (Bitterroot), and *siyaʔ* (Saskatoon Berry) decide the ways they will contribute to the “People-To-Be” (Sam 2013). This concept outlines the Syilx environmental ethic of responsibility to future peoples by regenerating the many strands of *tmix^w* in a unified direction (Armstrong 2010). The Syilx ethical responsibility

to water is essential as water is central to the existence of all life (Sam 2008). Water is valued as fish habitat, a source of life for other species, and cleanliness in relation to use for drinking, bathing, or spiritual purposes (Wagner 2008). Salmon especially hold nutritional, cultural, and spiritual significance to the Syilx peoples (Sam 2008).

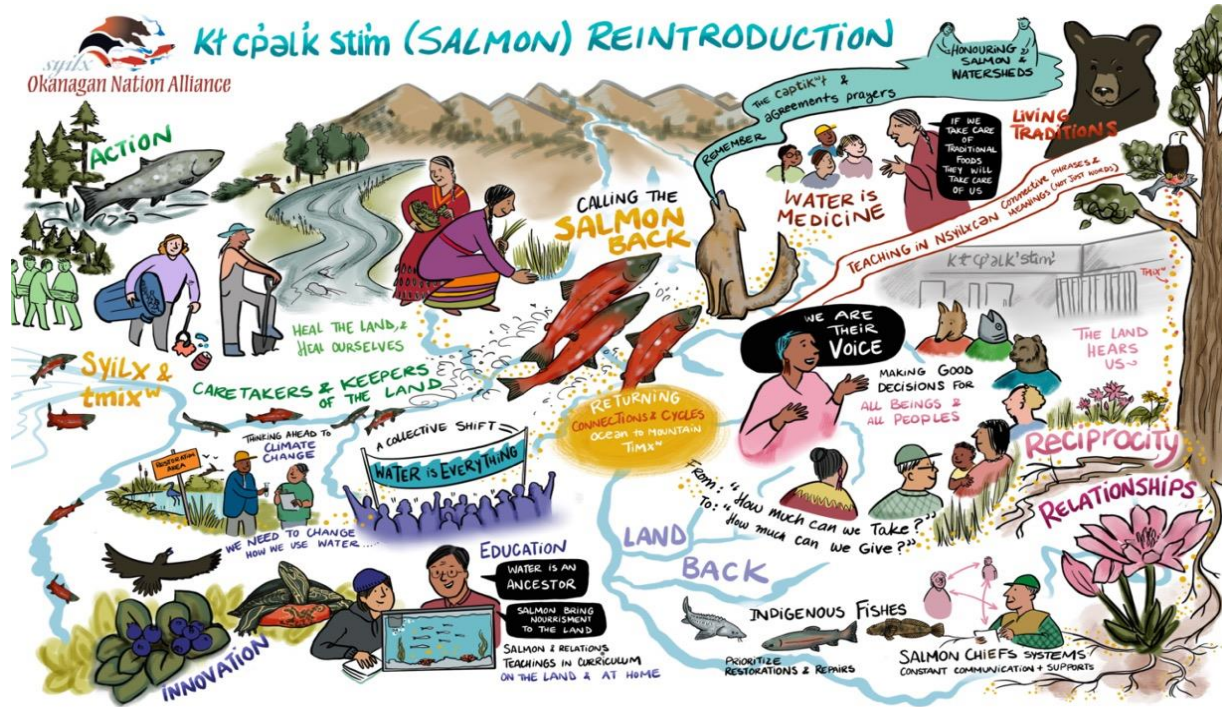


Figure 2. Okanagan Nation Alliance Four-Food-Chief 2022 meeting minutes as an example of discussion.

The Syilx cared for and managed the valley bottom and high elevation headwater wetlands to retain water using beavers and plants (ONA 2024). The diversity of wetland ecosystems required complex and adaptive resource management techniques. Prescribed burns created fire breaks from forested areas to protect and cultivate lakeshore riparian habitat, maintaining shade and moderating water temperatures (ONA 2024). Before the ecosystem changes brought about by European colonization, anadromous salmon were recorded in the *s̓q̓awsitk̓w* from May to November (Sam 2008), including *ntityx* (spring Chinook), *sk̓lwist* (fall Chinook), *s̓c̓win* (sockeye), *k̓isu?* (coho), and *q̓w̓əyq̓w̓əyʕaʕa?* (steelhead).

*Not only was riparian vegetation managed and maintained, but it was also protected using *s̓cac̓'yklaʔx̓w* (a prescribed burning technique) on the uplands so that fires would not wipe out the riparian areas. Without burning, the riparian stream banks and river shorelines are not protected.*



Figure 3. Historic photo of the lush *sq'awsitk'w* (Okanagan River) riparian area prior to channelization.

The Syilx fished with weirs to catch salmon, suckers, and trout in the *sq'awsitk'w* and smaller spawning streams (Sam 2008). Salmon were so abundant that Syilx trade networks extended beyond the territories of bordering plateau tribal peoples (Sam 2008). One of the largest permanent villages in the Okanagan was between *tú?cin* (Skaha Lake) and *klusxənitk'w* (Okanagan Lake) where the *sq'awsitk'w* and wetland areas were fed by seasonal flooding and the nutrient renewal provided abundant food sources (Ernst 1999).

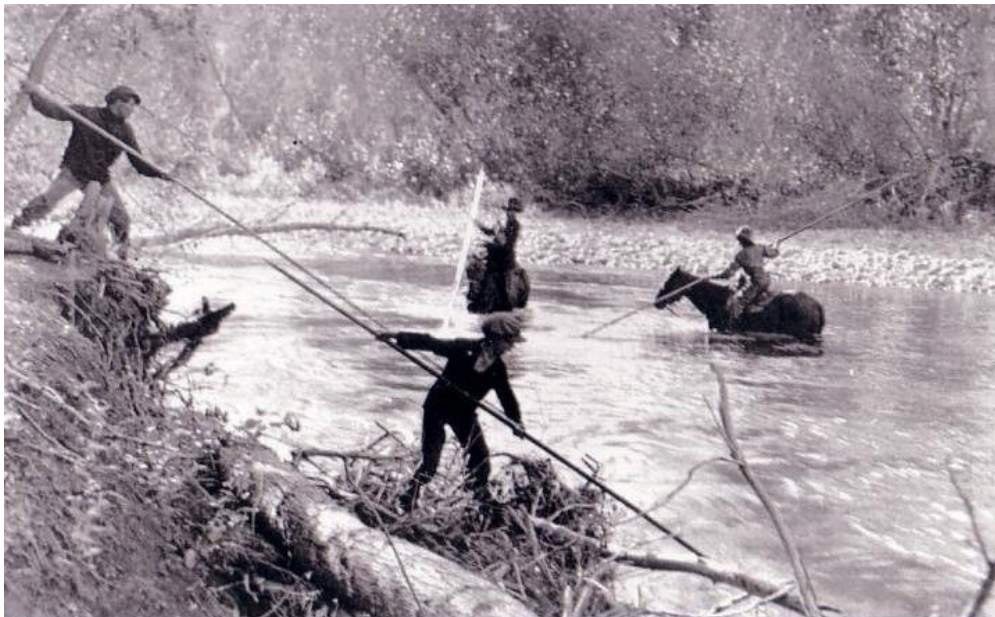


Figure 4. Historic photo Syilx fishing on *sq'awsitk'w* (Okanagan River).

The European Colonial Ethic

Colonization by definition is an ethic of ownership and control, which is in direct opposition to the Syilx ethic of reciprocity. Colonization is also in opposition to sustainability ecologically because of the continual “development” of landscapes and transformation of ecosystems rather than conservation (Wagner 2008). When European settlers began changing the land in the early to mid-1800s (Ernst 1999), they did so under the concept of *terra nullius*: that the settler has outright ownership when discovering land that seen to be uninhabited (Sam 2013). At that time, Syilx populations were severely reduced due to the smallpox epidemic introduced by contact with Europeans (Sam 2008).

With this perceived ownership of land, European colonizers gave themselves permission to change their new surroundings based on the cultural practices developed on an entirely different continent (Wagner 2008). European cultures prefer “orderly, controlled, and economically productive landscapes” (Wagner 2008), and in the Okanagan Basin, the European colonial perspective of resource exploitation for economic profit drastically altered the system of relationships with the land and water (Sam 2008). Currently, the Province cannot provide historical documentation or legal evidence of how it gained this land title (Sam 2013).

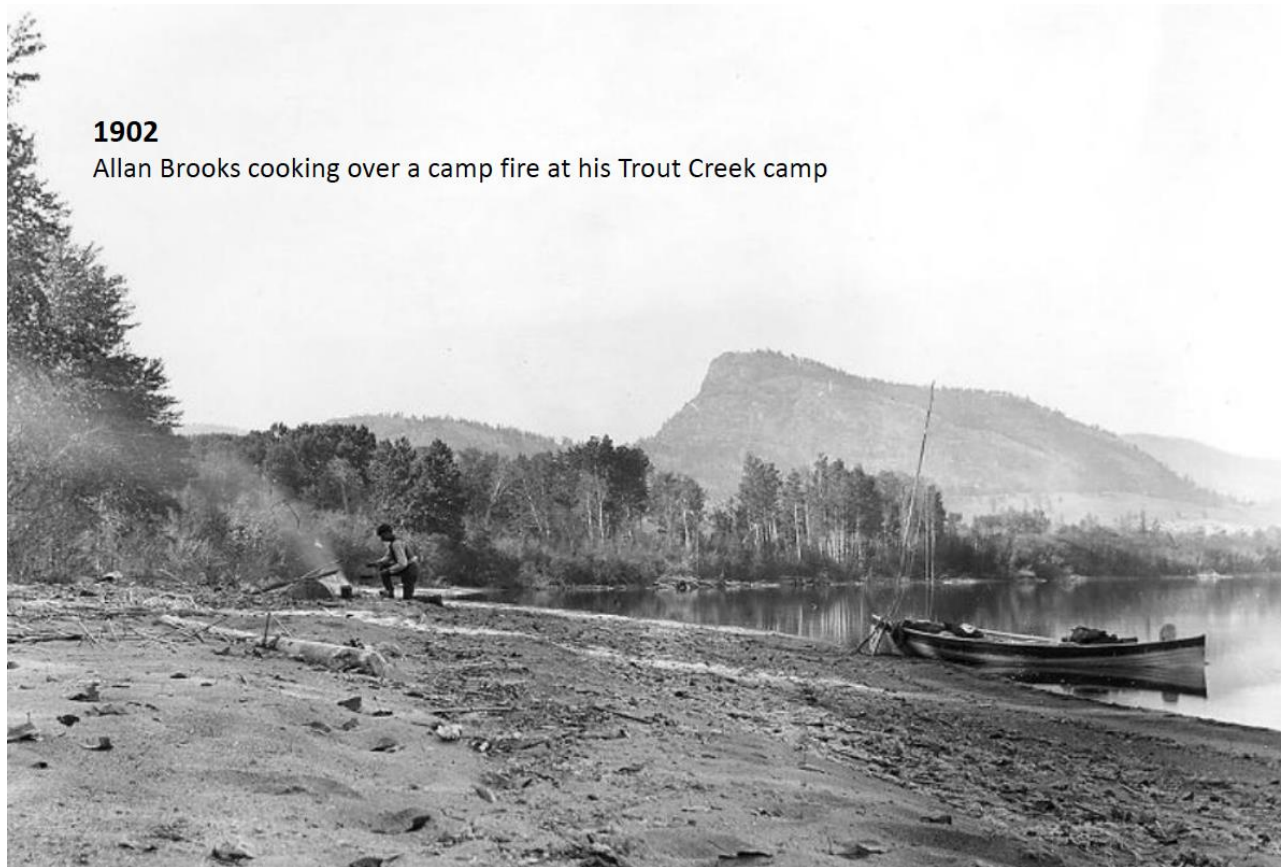


Figure 5. Historic photo of the *klusxənitk^w* (Okanagan Lake) lakeshore riparian area at Trout Creek in 1902.

Settler populations displaced Syilx societies, forming reserves in the Penticton area in 1861 (Ernst 1999). Settlers overtook entire villages, constructed flood control, and began appropriating resources (Ernst 1999; Sam 2008). When infrastructure was flooded frequently, the settlers discovered why the Syilx migrated through the Penticton area seasonally (Sam 2008). A series of floods created pressure on the colonial governments to rigorously control water resources in the Okanagan (Wagner 2008), which led to the *Okanagan Flood Control Project and Act* in 1894 (Ernst 1999). The growing conflict between Eurocentric land ownership, water resource control, and economic exploitation continued with a disregard for fish and wildlife and Syilx water rights.

Settler populations use the word flooding always in the negative. To flood in nsyilxcen is not negative. Flood is tikt. To flood on the land - tikla?xw - is also not a negative term. Flooding is a normal part of ecosystem processes. It is cleansing.

The colonial government declared water as a public resource and property of the Crown, creating a licensing system based around “beneficial use” and “prior appropriation” (Wagner 2008). Beneficial use meant that diverted water must be used and not reserved (Sam 2008). Water rights were granted to any applicant considered for legitimate use, including irrigation and domestic use (Wagner 2008). The Syilx practise of weir fishing in streams was outlawed, which gave irrigators increased access to stream water (Ernst 1999).



Figure 6. McIntyre Dam became the upstream migration limit for salmon, constructed in 1915 for the South Okanagan Lands Irrigation District flume finished in 1920.

Riparian rights were not recognized, and licensed water diversions carried water along constructed right-of-ways to distant agricultural properties (Wagner 2008). Large irrigation infrastructure was built while ignoring riparian principles (Wagner 2008). Irrigation agriculture allowed for more settlers to prosper on smaller tracts of land, which increased the settler population density and the development of roads, railways, and industry (Wagner 2008).



Figure 7. Aerial photo of residential and agricultural development in the floodplain at Penticton in the 1940s.

Damming of the *sq'awsitk*^w for irrigation purposes began in the early 1900s (Sam 2008), creating complete barriers for salmon migration. In the 1950s, an extensive and intrusive flood control construction effort resulted in the straightening and diking of the *sq'awsitk*^w, completely severing water interactions with surrounding wetland and riparian habitats from Penticton south to Osoyoos (Wagner 2008). The dikes, dams, and removal of riparian vegetation also cut off groundwater and hyporheic interactions that moderate river temperatures in extreme seasonal conditions. These Eurocentric flood control measures took an immense toll on the fish, wildlife, and flora throughout the Okanagan Basin, as well as the social, cultural, and economic losses to the Syilx peoples due to the rapid ecosystem changes and decimation of the once prolific salmon runs (Sam 2008).



Figure 8. Historic photo comparison of Okanagan Falls (left) looking south in 1953 and in 1954 (right) after channelization (Courtesy of Penticton Museum).

Impacts of the European Colonial Ethic on Okanagan *siw̓tkʷ*

The collection of lakes throughout the Okanagan Basin creates an illusion of water abundance; however, the semi-arid region only receives between 300 mm to 450 mm of precipitation annually to the valley bottom (Summit 2002). Renewal rates for the glacially formed lakes are slow. The *klusx̓nitkʷ* renewal rate is estimated at 52.8 years (Wagner 2008). The main source of water to the lakes and *s̓q̓awsitkʷ* is snowmelt in the spring (Summit 2002), often leaving many months in between with no precipitation and drought conditions. While the illusion of water abundance attracted settlers to the area, the actual water scarcity created a desire for stronger institutionalized water regulation.



Figure 9. Historic photo of the lush *s̓q̓awsitkʷ* (Okanagan River) riparian area prior to channelization.

In the early 1800s, a natural bar existed across the *klusx̓nitkʷ* outlet, which set the low water level (Ernst 1999). The first makeshift dam was constructed across the river around 1908, and at this time it was recorded that there was a fourteen-foot difference between *túʔcin* (Skaha Lake) and *klusx̓nitkʷ* (Ernst 1999). In the low elevation areas of Penticton, a complex network of oxbows, wetlands, and riparian vegetation were diverse in nature (ONA 2024). The Syilx cared for thick riparian areas with *mulx* (cottonwood) to retain water between the lakes long after freshet (ONA 2024). Riparian vegetation was also thick around *s̓x̓ʷəx̓ʷnitkʷ* (Okanagan Falls) and the water level for the two lakes was moderated at *s̓x̓ʷəx̓ʷnitkʷ* rather than Penticton (ONA 2024).

My qáqna? (my grandmother on my dad's side) would tell me in the spring, during the piʔs̓x̓ʷʔitkʷ (freshet), to listen to the river, not the rushing water but the rocks moving under the water. She said, this is a song that the creeks sing to the rivers and the rivers sing to the estuaries. This song lets the salmon know that the creeks are ready for their return. -caylx

The Syilx *captik*^{wl} stories tell of *sx̣ẉəx̣ẉnik*^w as a place where *senk'lip* (coyote) brought salmon from the south. Three visible rock formations at the falls signify three salmon guardians, which shows the cultural value of the place and its importance to the management of *siẉik*^w and salmon.

*The water level for the two lakes was moderated at *sx̣ẉəx̣ẉnik*^w (Okanagan Falls) rather than Penticton.*

Water was managed by the “salmon guardians”: the beaver, the muskrat, and the fisher.



The project *Fish Passage at McIntyre Dam* provided salmon access to 11.5 km of upstream important historic habitat.

sinklip BRINGING SALMON TO t'ucin (SKAHA LAKE)
Written by June Paul as per the story told orally by Richard Armstrong

sinklip (Coyote) brought salmon from the south at the *n̄x̄w̄əntk'itk'w* (Columbia River) and into the *q̄awsitk'w* (Okanagan River) in Washington and in the Okanagan Valley, British Columbia. On his journey, *sinklip* stopped at the south end of *t'ucin* (Skaha Lake) near *sx̄əx̄nitk'w* (traditional fishing camp in Okanagan Falls) and asked the *syilx* people for a wife and a home. He continued his journey to the north bringing the salmon into *t'ucin*. When he returned for his wife and a home in *sx̄əx̄nitk'w*, he discovered his given wife was impregnated by another. Coyote was very disappointed, so he put the *m̄x̄al'* (cradleboard) above the river to let everyone know that he did not receive this promise. However, to show his promise for the salmon, he placed his fishing spear above the river, across from *akspaqm̄ix* (Vaseux Lake.)

With Coyote's promise for salmon he left three rock formations at *sx̄w̄əntk'itk'w* (Okanagan Falls): *stunx* (Beaver), *s̄faʔnix* (Muskrat) and *c'ɾɾtups* (Fisher). These are the Coyote's story markers and are visible above *q̄awsitk'w* between the *n̄'ayl̄intan* (McIntyre Dam area) and *sx̄əx̄nitk'w*.

SALMON GUARDIANS at *sx̄əx̄nitk'w*

c'ɾɾtups Fisher was granted guardian of the higher lands. His responsibility is to regulate the creeks and watersheds.

stunx Beaver was granted guardian of the river. His responsibility is to build dams to regulate the water levels.

s̄faʔnix Muskrat was honored as a teacher "in the water". His responsibility is to care for the dams and vegetation in the river.

Figure 10. Photo of the *t'ucin* (Skaha Lake) outlet at *sx̣ẉəx̣ẉnik*^w (Okanagan Falls) in the early 1900s; and the brochure on the salmon guardians at Okanagan Falls.

The first dredging of the *sqawsitk^w* at *klusxənitk^w* began in 1910 (Ernst 1999). Around that time, a survey recorded a very low gradient (0.000068) slough running from the lake (Summit 2002). A steeper change in gradient was recorded 2,210 meters downstream, which then appeared to be the actual outlet of the lake. When a river is straightened, the gradient becomes steeper, and over the years, European settlers transformed this vibrant, diverse, and productive wetland area into a steeper straight canal designed for water regulation.

Rivers are not supposed to flow straight in a channel. Rivers meander back and forth, and also move up and down with pools and shallow riffles, all these parts of a river are important. Rivers are supposed to have floodplains, places to hold the piʔsɔ́ʔitk^w (spring freshet).

Confining the *sqawsitk^w* to an orderly, controlled flow allowed settler resource managers to measure the river discharge, and the earliest discharge records at Penticton started in 1921 (Summit 2002). Damming the *klusxənitk^w* outlet also allowed settler resource managers to record the *klusxənitk^w* lake surface level. The dam at the *klusxənitk^w* outlet was reconstructed several times through the early 1900s with the current structure completed in 1958 as part of the *Okanagan Lake Regulation System* (Symonds 2000).



Figure 11. *klusxənitk^w* (Okanagan Lake) south of Naramata 1910 (Naramata Museum 2015.001.026)

Okanagan Lake levels once changed a lot more than now. The lake had space to breathe. It was healthy, it was normal, it is not normal to not change.

A comparison of the controlled or regulated lake levels versus hypothetical unregulated lake levels (Figure 12; Summit 2002) on *klusxənitk^w* shows that the *klusxənitk^w* outlet dam works to confine the range of water levels on the lake. Prior to the dam, *klusxənitk^w* and *úʔcin* could range 2.5 to 2.7 meters, which has now been greatly reduced (ONA 2024). The *klusxənitk^w* outlet dam actively lowers the high-water level during spring freshet and raises the level during the preceding summer and fall months. This demonstrates how the physical confinement of the lake is compounded with the ongoing effort to confine the seasonal range of natural *siwłk^w* movement.

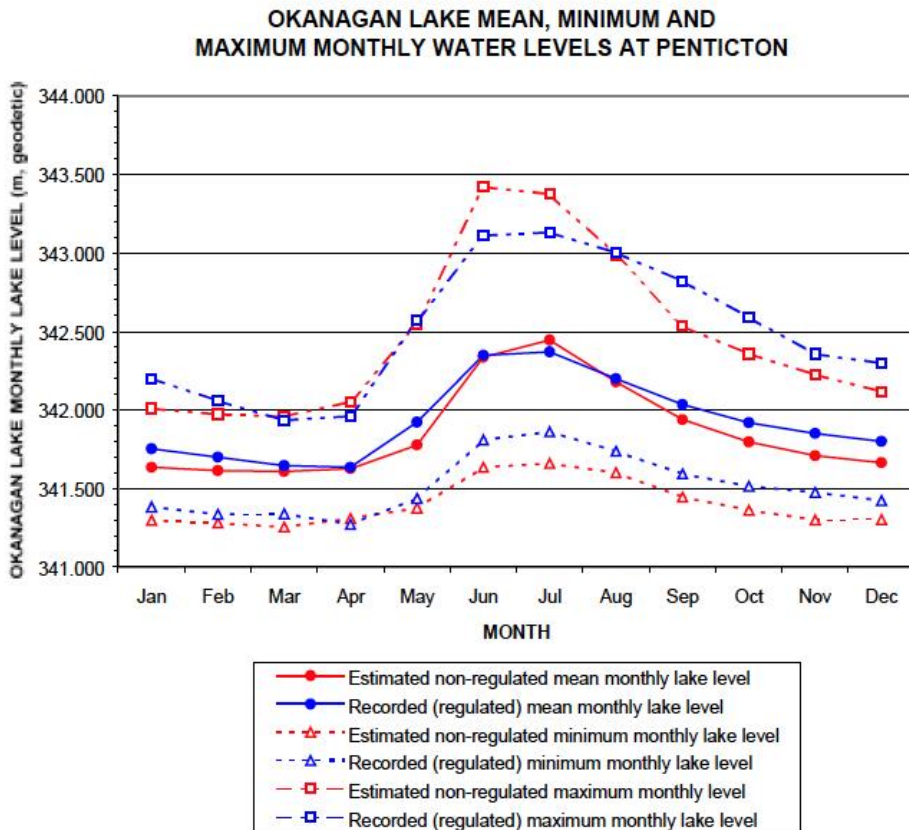


Figure 12. Comparison of recorded lake levels to modeled unregulated lake levels by month for *klusxənitk^w* (Summit 2002).

Similarly, the same comparison of the discharge in *s'qawsitk^w* at Penticton (Figure 13) highlights drastic changes in the seasonal hydrograph of the river (Summit 2002). The river flow is artificially raised in late winter and early spring but reduced during the natural freshet flood season. This demonstrates again the imbalance caused by the European colonial effort to control the river, not only through physical confinement with dikes and dams, but also the pre-emptive and planned shifting of seasonal conditions.

**OKANAGAN RIVER MEAN, MINIMUM AND
MAXIMUM MONTHLY DISCHARGE AT PENTICTON**

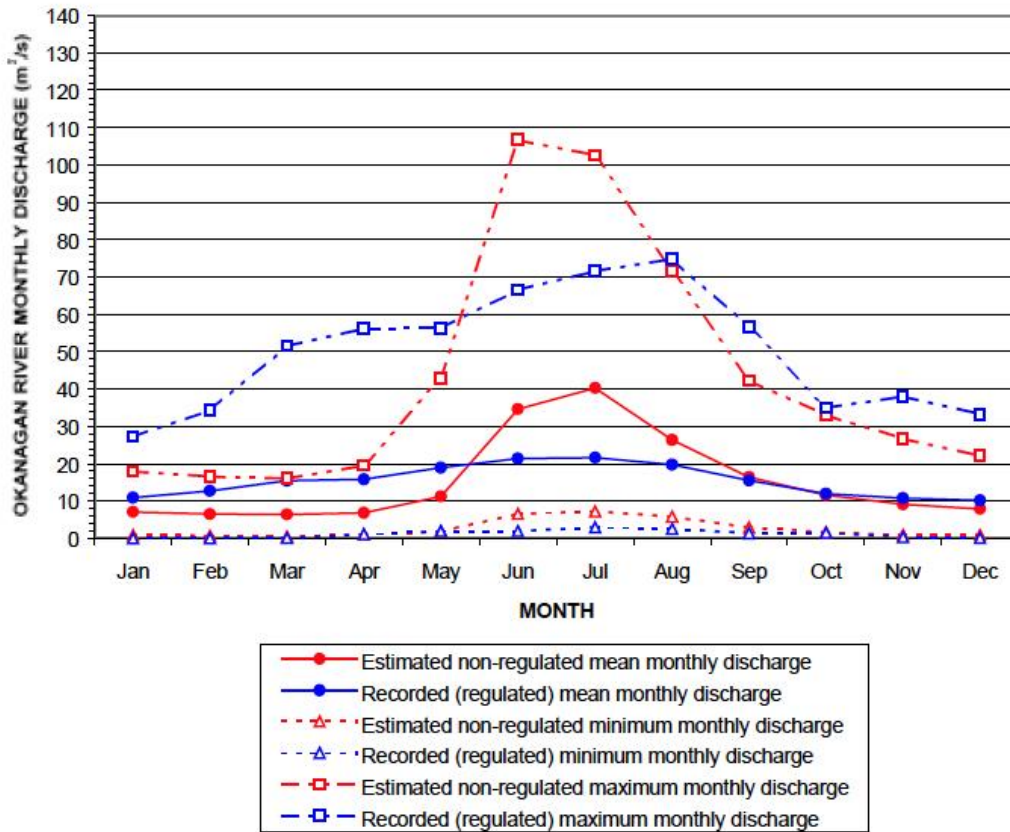


Figure 13. Comparison of recorded river flows to modeled unregulated flows by month for *sq̓awsitk*^w at Penticton (Summit 2002).

Freezing conditions were frequent on *klusxənitk*^w and *túʔcin* in the early half of the 1900s and late 1800s (ONA 2024). The *klusxənitk*^w froze-over completely about once every ten years until the 1950s, with partial freeze-over winters common until 1957 (ONA 2024). *klusxənitk*^w fully froze in 1892-93, 1907-08, 1915-16, 1928-29, 1948, 1949-50. As well, the lake was partially frozen in 1867, 1889-90, 1900, 1913, 1920, 1922, 1930, 1951, 1954, 1957 based on dated photos. The lake has not frozen over since 1957. While the change in freezing winter conditions may not be directly attributed to the Eurocentric landscape changes, the effects of these climate changes may be amplified by the loss of resilience in the natural systems throughout the Okanagan.

The large lakes of the Okanagan froze often. In the winter you could travel across the lake and in the spring ice-fishing for burbot fishing was a community event.



Figure 14. Aerial view of the north end of Okanagan Lake in 1949 showing both arms of frozen lake (Vernon Museum 9244).

The impacts of the European settler ethic extended throughout the entire Okanagan Basin. Prior to settler influence, wetland and riparian ecosystems connected the river to the floodplain and created diverse ecosystems south of Penticton and *sx̣ẉəx̣ẉniḳẉ* (Wagner 2008). The mosaic of wetlands, arid grasslands, and Ponderosa forests created important habitat for a unique collection of flora and fauna (Wagner 2008). The dam at the *akspaqṃix* (Vaseux Lake) outlet was constructed in 1920 and rebuilt in 1950 (Ernst 1999). The dam was a complete migration barrier for salmon and was built with a total disregard to fish habitat and Syilx rights despite the correspondence from the Syilx to the settler governments of that time (Ernst 1999). Again, with the supposed control of *sq̣awsiṭḳẉ*, settler culture overtook the riparian and floodplain areas prone to flooding and established infrastructure for arbitrary land value and Eurocentric economic benefit throughout the valley.

The European colonial water management policies created a trophic cascade of negative effects to biotic life forms throughout the Okanagan ecosystems (Sam 2008). This historic and ongoing environmental damage significantly altered the way the Syilx could access the land and resources (Sam 2008). On the Penticton Indian Band reserve, species integral to the wetland and riparian ecosystems were wiped out including salmon, beaver, muskrat, mariposa lily, watercress, and wild

rhubarb (Sam 2008). In 2007, the Provincial Ministry of the Environment reported that 30% of the province's red-listed wildlife species were in the Okanagan region (Sam 2008). The region also had 46% percent of the province's blue-listed species (Sam 2008). In 2002, the *sq'awsitk*^w was designated as one of the most endangered rivers in Canada (Wagner 2008).

This scenario of the European colonial ethic altering ecosystems in opposition to Indigenous environmental ethics is not confined to the Okanagan region (Wagner 2008). However, the situation in the Okanagan demonstrates a clear difference between the two societal principles. The Syilx peoples managed for thousands of years with customary laws of knowledge-gathering (*capitk*^w) and diverse community decision-making (*enowkinwixw*) specific to the Okanagan region in a relationship of cyclical regeneration with *tmix*^w. The recent European colonial ethic, a hierarchical, centralized authority model based around ownership and control, has created a system of environmental imbalances for economic gain. This historic and ongoing disruption is demonstrated by the:

- physical confinement of the *klusxənitk*^w and *sq'awsitk*^w;
- decimation of riparian and wetland habitats;
- shift in seasonal timing of water conditions;
- endangered fish and wildlife species; and
- denial of Syilx to resources and rights.

Colonial practises dominate North American societies to this day showing that colonization is not just an event that occurred between past European settlers and Indigenous peoples (Wagner 2008). However, despite growing environmental concerns related to the effects of global colonial expansion such as rampant urban sprawl and climate change (Wagner 2008), the Syilx have spearheaded many decisions and actions that progress towards a renewed relationship of regeneration (Machin 2023).

k^wu scúnma?stm i? siwłk^w k^wu k^wcəck^wact ul qm̓qam̓t.

Our sacred water teaches us that we have great strength to transform the highest mountain while being gentle, soft, and flexible (Syilx water declaration).

Navigating between transitory colonial institutions and arbitrary boundaries, the Syilx have worked to reintroduce salmon in the *sq'awsitk*^w all the way to *klusxənitk*^w. Numerous dike setback projects have reflooded wetland and riparian areas. The restoration of aquatic habitat and salmon populations in the Okanagan has also led to the recognition of Syilx management and fishing rights (Machin 2023). The enhancement of salmon plays an important role to help revitalize Syilx culture and language (Machin 2023, ONA 2022). Through a collective responsibility between the Syilx and settler society (Sam 2008) based on technical questions instead of policy issues (Machin 2023), steps are slowly being taken to reverse the impacts of the European colonial ethic of control and domination over land and *siwłk*^w.

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