Friends of the Oxbows (FOTO)

NEWSLETTER

Issue No. 19 Summer 2019

Latest Attempt by FOTO to Enhance Protection of the Oxbows

By Rick McKelvey

Friends of the Oxbows (FOTO) have been working for the last 10 years to protect and enhance the Penticton Oxbows. So far progress has been depressingly slow! In that time we have made numerous presentations to various levels of government, public service groups, special interest groups and the general public. No doubt you as one of our supporters have at one time or another been exposed to our promotions.

In spite of our efforts, basically the only thing that has happened of significance in that time is the dredging out of the Brandon Avenue oxbow by the City in September 2015. That cleanout followed the installation of a sediment interceptor on the storm drain entering the Brandon Avenue oxbow by the City as part of the implementation of the City's storm water management plan. Several other smaller interceptors were also installed on other storm drains entering the oxbows subsequently as well.

Our most recent efforts have been to work to take advantage of the recent completion of the City's Parks and Recreation Master Plan. FOTO provided input to that process, so that at least there was tacit recognition of the value of the oxbows in the plan, although the oxbows were not deemed high enough priority to actually become part of the overall plan.

At the moment the oxbows have some level of protection through the Official Community Plan and its current redraft, wherein they are recognized as Natural Areas. There is a further level of protection afforded the oxbows through them being including in what are known as Development Permit Areas. What that means is that any future development along the uplands would require a more diligent impact assessment than would be required for developments proposed elsewhere. Further, the provincial Riparian Area Regulation would also apply to future developments, which could be used to recover the riparian zone on the City's side of the oxbows up to 30m from the high water mark.

As the Parks and Recreation Master Plan recognized that there was a need for a new type of park designation that would protect important greenspaces in Penticton, Friends of the Oxbows believe there is an opportunity to have a more inclusive type of protection developed for the oxbows. To that end we made a presentation to Council in January 2019, where we explained our ideas for better protection, and ultimately enhancement of the oxbows. We believe that with more secure protection, as for example through a Natural Areas By-law, non-government organizations can be found that will be interested in helping fund clean-up and enhancement of the oxbows.

We had hoped that our presentation to Council would result in some form of endorsement by Council, and perhaps a referral to staff to look further into our proposal. That did not transpire,

however, but the idea was referred to the Parks and Recreation Advisory Committee for review. Subsequently we made a presentation to the Parks and Recreation Advisory Committee in March 2019, but we had to request a time on their agenda, it was not something Council had asked them to do. After some rather brief discussion, the Committee decided that they should recommend to Council that a Master Plan for Oxbow Conservation be developed, before any form of improved protection for the oxbows was contemplated.

At the moment we don't know if that recommendation from the Committee has been received by Council, but we have been told that the costs for such a plan would have to be included in the next round of budgeting. It is possible that budget discussions will begin as soon as August this year, but at this time we don't know the likely cost of such a planning exercise nor of the probability of the planning exercise actually getting funded any time soon.

We are concerned that an opportunity to do something significant for the oxbows is slipping by, perhaps because the powers that be do not share our concerns for those remnant wetlands, or because they feel that somehow due (and slow!) process will be the solution. We are out of ideas as to how to move things along at the moment. If any of our supporters out there have ideas we haven't tried, please let us know! In the meantime, perhaps consider putting "pen to paper" and informing Mayor and Council yourselves what you think needs to be done to protect and enhance our oxbows.

Cherry Lane Display

By Bob Anderson

Our Friends of the Oxbows (FOTO) display at Cherry Lane on May 4/19 was well received. This is the third year for a FOTO display in the Mall. Of special interest to shoppers was our new display board illustrating how residents can help FOTO preserve the Penticton oxbows. The warm spring day resulted in fewer shoppers in the mall. However, 16 people registered as new FOTO members. One visitor to Penticton was quite interested in how we originated our group. He was experiencing a situation in Oliver in part like the one we have experienced in Penticton. A few residents in Oliver are using the oxbows there as a yard waste dumping ground. Hopefully the information we provided the Oliver shopper we spoke to will enhance efforts to protect oxbows there.

We are grateful to the Cherry Lane Administration and staff for continuing to provide space and equipment to facilitate FOTO in making contact with our community. Their support provides a most valuable opportunity to FOTO to garner support for the protection and enhancement of all Penticton area oxbow wetland habitat. We believe shoppers not only appreciated learning about the plight of our oxbows and how they can help, but how Cherry Lane demonstrates it is helping.

Ellis Creek update

By Lee McFadyen

Ellis creek rises in the mountains east of Penticton, tumbling down through Ellis Canyon, and ultimately flowing beside Industrial Avenue to enter the Okanagan River under a bridge on Channel Parkway.

The Ellis Creek sediment catchment basin, located just upstream from the creek's entry into Okanagan River, was bordered on the downstream end by a rock weir which prevented sediment transported from the mountains from entering the Okanagan River. The ongoing process of sediment extraction negatively impacting the creek side environment and required extensive maintenance. The weir was not passable by fish species year round. During November and December 2018, the Okanagan Nation Alliance and the Ministry of Forests, Lands, and Natural

Resource Operations successfully modified the Ellis Creek basin to rectify these issues.

Before construction began about 90 well established plants were moved to the south east side of the basin where they can mature without further disturbance.

The removal of the outlet weir has created a gradual, fish-friendly riffle pool and allows year round fish access to 4 km of potential salmon spawning habitat in Ellis Creek and the installation of a fish-passable bypass pipe enables fish passage during sediment removal. Improved access for machinery during sediment extraction allows the establishment of a permanent riparian zone.

On April 06, 2019, a work party of approximately 30 volunteers planted the disturbed soil with native riparian and dry land species. Plant selection was guided by species planted since 2013 and other native species observed at the site.

Much of the soil is very porous and has poor water holding capacity. To assist with plant survival a drip irrigation system was installed utilizing a combination of new and recycled equipment. In the past, inadequate water pressure restricted delivery to some areas. To mitigate this the new system is divided into zones controlled by ball valves. Allan Garland volunteered to work with Lee McFadyen to install the system and he now rotates water deliver to the zones on a daily basis. Allan also monitors delivery to plants and takes remedial action when needed. **THANK YOU Allan**.

The City of Penticton Parks division provides the water. We truly appreciate meeting with Geoff Sandham and Chad to discuss the sites needs and doing the infrastructure repairs needed to keep the water flowing.

The Okanagan Nation Alliance and the Ministry of Forests, Lands, and Natural Resource Operations truly appreciates the volunteers who helped plant, the City of Penticton for providing water to the site and Allan Garland for his monitoring and maintaining the irrigation system.

Lee McFadyen
Public relations (Outreach) Coordinator
Okanagan River Restoration Initiatives

The History of Water in the Okanagan

By Randy Manuel

The Okanagan River is but one part of a delicate system of the Okanagan River Basin.

In the original state the birth of the river began at Penticton winding and twisting its way down the valley and eventually joining its bigger cousin, the Columbia at Brewster Washington and thence onto the Pacific Ocean.

The way we have treated our lakes in the past (and in some cases we still do) one could call the lakes one of the biggest toilets in B.C. People swim, paraglide, windsurf, drink, irrigate lawns and agricultural land from Okanagan and Skaha Lake. Due to low inflow from the many small creeks, the 116 km (69 miles) long Okanagan gets "flushed" once every 58 years. This once pristine body of water has had its 800 foot (380 m) depth filled with coal waste from CPR steam ships (as well as their toilets !), silt from excessive logging operations, agricultural runoff, debris from recreational boating, styro foam from poorly built dock floats, and lakeside cottages septic fields. Smaller villages such as Naramata have no sewage system at all. BUT, at least over the past decades major sewage treatment systems in the valley cities have top of the line waste water treatment systems.

Many decades ago I recall a cryptic message scrawled on the wall of a Kelowna drinking establishment..."flush the toilet, Penticton needs the water". Well at least now the water has been treated. This though brings me to a point in that we cannot afford to flush and forget as the water will get recycled many times on the way to the

ocean. We need to look after it. Most people are unaware that we can only use the top four feet of water in Okanagan Lake. The automobile is one reason, for the floating bridge at Kelowna has a very small rise and fall of about 4 to 5 feet as it's optimum operational level or it starts to have issues with its joints and anchoring systems. Out of this top layer we must "water" a population in the valley that is rapidly reaching a half million people. Remembering that while there are dozens of reservoirs in the hills for our use, it is still water that prior to the manipulations on the creeks by humans, it is water that would have run into the lake.

Skaha lake has a flushing time of nine months due to the higher inflow from Okanagan. It is challenged somewhat with septic systems outside of the waste water treatment plants of Penticton and Okanagan Falls. A plan has been in the works for decades to bring Kaleden and the population of Skaha east side into some sort of waste water treatment process. Yet those communities use Skaha for domestic and irrigation, despite long term use of septic fields which can be subject to over loading and leaching.

We must not forget those who live down stream of Okanagan Falls who draw water from the Okanagan water basin.

In the earliest years of non indigenous use of water in the Okanagan river system, it was used as an important transportation highway. Besides canoes and rowboats early settlers built small steamboats. "Captain" Holman of Okanagan Falls in 1893 ran a small screw drive steam boat called the Miramichi. This small steam boat service advertised in the Okanagan Mining Review of October 1883 (the newspaper published for only a few weeks in Okanagan Falls before quitting the newspaper business) It is not known how long this service lasted as the inspector of steam boilers stopped its commercial use. Holman who was also owner operator of the Okanagan Hotel at the Falls got by that regulation by saying the little ship was a private ship for pleasure only. Did the passengers then donate funds to ride or ship goods on the little vessel?

None the less over the next decade or two the CPR got into steam boat service on Skaha and Okanagan Lake. Paddle wheel ships, Greenwood and Fairview plied the waters of Skaha and the river but both burned to the waterline well before 1900. This river traffic caused the first manipulation of Okanagan River by dredging out some of the sand bars and switch backs so that steam boat service could go from Okanagan Falls north to Okanagan Landing some five miles west of Vernon.

This boat service did not escape the minds of the local population, the federal government engineers and the CPR. As early as 1883 Dominion Government engineer HAMLIN reported to the Minister of Railways and Canals that a canal eighteen miles long, five feet deep and fifty feet wide with locks 150 feet long could be built joining the Okanagan drainage system (Columbia system) with the Shuswap (Fraser) drainage. This would provide a navigable canal, lake and river system from Savona on the west end of Kamloops Lake to Okanagan Falls in the south. The system was never built as the CPR in 1892 built the Shuswap and Okanagan Railway from SICAMOUS to OKANAGAN LANDING. The railway put the canal issue out of the question.

What is alarming is that this canal system was in the mid 1960' s again on the drawing boards of engineers and politicians. During the federal election campaign in 1968 the canal proposal became an issue. People protested on Eckhardt Ave. outside the Penticton High school auditorium where federal minister Ron Basford espoused his election. This time it was American interests that were pressing the Dominion government to get a diversion canal built. People needed water. California needs water and is rapidly running out. Diversion of Shuswap water into the Okanagan would then flow into the Columbia to be sent by pipe line to the thirsty agricultural fields of the Imperial valley to grow veggies for not only the Americans but for those of us who cruise the likes of Walmart, Save On Foods or Safeway looking for that cheap cabbage or tomato. All that water mingling diverse species unique to our separate waterways. What would diversion do to the salmon fishery?

We have already destroyed most of the Okanagan rivers natural state. The old river oxbows are the last memories of a once vibrant natural system that supports a wide and varied wild life ecosystem. Human activity of the last 160 years has manipulated, or rather mutilated the Okanagan water supply that is now unrecognizable from what it was when the Land of the Sylix was invaded. Today only 15% of the original wetlands survive. What will be here in 20 years if we continue to expand with total disregard for water and our oxbows? The Oxbows that are the only memory of a once vibrant river and riparian system that were the lungs for those who lived here so many centuries ago.

Meadowlark Nature Festival Tour

By Bob Anderson

The Friends of the Oxbow's Meadowlark Oxbow tour was held on Monday May 20th, 2019. While cloudy, and threatening rain, it turned out to be a great day for this walking tour. This year, our sixth year participating in Meadowlark Festival, the tour was led by historian Randy Manuel, Penticton's former Museum Curator. The thirteen participants, mostly residents of Penticton, learned about the tremendous asset the old Okanagan River was to the residents of this fledgling community. With many photos and maps Randy illustrated what life was like in the early days.

With the original Okanagan River abandoned when the River Channel was excavated in 1953, all that remains are the remnants, now called The Oxbows. With over 90% of the area's wetlands destroyed in the last one hundred years, the need to preserve the oxbows and the habitats they provide was stressed. The results of the efforts of the Friends of the Oxbows was discussed and Illustrated with one of our successes, a visit to the reclaimed Brandon Avenue Oxbow. The need for public support of the oxbows was encouraged. The tour was well received with many positive comments made.

Okanagan River Restoration Initiative (ORRI)

Extracted By Ray Halladay, Chair, FOTO

The information below was extracted from the 2019 annual report of the **Okanagan River Restoration Initiative** (ORRI). Excerpts provided here are with the approval of the author Natasha Lukey and ORRI Chair Karilyn Alex. We include it in this edition of the Friends of the Oxbow (FOTO) newsletter to update the knowledge of our members and our other followers about the outstanding achievements of the ORRI. We believe the ORRI efforts compliment FOTO's undertakings to protect and enhance oxbow riparian and aquatic habitats throughout the area between Okanagan and Skaha Lakes. (FOTO is a member of the ORRI Steering Committee).

Penticton Channel Spawning Bed No. 4
Construction Works
Prepared by: **Natasha Lukey**, M.E.S.
Okanagan Nation Alliance (ONA), Fisheries Department
Reviewed by: **Karilyn Alex**, ONA
Prepared for: ORRI Steering Committee
PRCC Committee June 2019

Excerpts from:
ONA Fisheries Department Final Report
ORRI Spawning Bed No.4 - Construction Report
May 2019

Executive Summary

The Okanagan River Restoration Initiative (ORRI) commenced in 2000 to restore the channelized ḳawsitkʷ (Okanagan River) to more natural conditions and regain the habitat quality and quantity lost through channelization. The ORRI is a collaborative ecosystem-based approach sponsored by the **Canadian Okanagan Basin Technical Working Group** (COBTWG), represented by **B.C. Ministry of Forests, Lands, Natural Resource Operations, & Rural Development** (FLNRORD), **Okanagan Nation Alliance** (ONA), and **Fisheries and Oceans Canada** (DFO). **ORRI is guided by a Steering Committee, and involves several Canadian and American partners and funding contributors.**

The restoration of salmon spawning habitat in the Penticton Channel, from kłusxənitkʷ (Okanagan Lake) to ḳawst'ik'ʷt (Skaha Lake), **was identified by COBTWG as a high river habitat priority because**:

* Traditional Ecological Knowledge (TEK) asserts, **"the river channel (in Penticton), used to be rich in fish; Steelhead, Coho, Sockeye and King (Chinook) Salmon"** (Ernst, 2000).

*** Permanent fish passage, restored in 2014 at the Skaha Lake Control Dam**, re-established salmon access to the Penticton Channel section of ḳawsitkʷ (Okanagan River).

* **Salmon spawning habitat is extremely limited and degraded in the Penticton Channel**.

Conceptual designs and preliminary hydraulic (HEC-RAS) modeling were prepared in 2012 for native fish habitat restoration in the north half of the Penticton Channel. **Spawning Beds No. 1 – 3 were constructed between the Okanagan Lake Control Dam and the Golf Course Bridge in 2014 & 2015**, providing 12,980 m2 high quality salmon spawning habitat with 10 boulder clusters for enhanced rearing habitat. **Final stages of the conceptual design commenced in the fall of 2018 and include:**

*** Spawning Bed No. 4 construction**: **a nature-like feature especially designed for optimizing spawning conditions for** sc̓win (**Sockeye Salmon**) and kəkni (**Kokanee**):

o 5,520 m2 total kəkni (**Kokanee**) **spawning area** (1,650 metric tonnes (MT) gravel placement);

o 6,250 m2 total sc̓win (**Sockeye**) **spawning area** (2,180 metric tonnes (MT) gravel placement),

*** Existing 1986 Kokanee Bed** (FLNRORD): 665 metric tonnes of gravel placed over 3,430 m2.

*** Enhanced rearing habitat**: 71 boulders, placed in 15 clusters, located at various points between the north Hwy 97 Bridge and the golf course bridge, for spəqʷlic (**Burbot**) and **juvenile salmonids**.

*** Adaptive management work at Spawning Bed No. 3:** 790 metric tonnes placed in previously identified deficient locations (details reported in Alex 2019).

Spawning Bed No. 4 works occurred between August 13th – September 12th, 2018. Sixty-nine mussels (including 4 **Rocky Mountain Ridged**) were relocated prior to works. Additional fish and wildlife salvage were not required. Works adhered to the approved Environmental Protection Plan and no significant temporary or lasting negative environmental incidences occurred.

A few thousand kəkni (Kokanee) and sc̓win **(Sockeye) were observed spawning over the beds following construction** and Froude numbers were within preferred salmonid ranges at all redds surveyed. **The project main next steps are**:

*** Monitor aquatic, vegetation, and fish and wildlife responses** to the restoration works.

* **Update and calibrate the hydraulic model** for all spawning beds at high flows.

* **Irrigate indigenous plantings and manage introduced invasive vegetation at planted areas**.

* **Enhance the riparian habitat and increase channel** shading by further bank re-vegetation.

*** Install permanent information signage on-site and potentially a public viewing platform/bench**.

*** Organize public visits of the restored site**, especially during sc̓win (Sockeye) spawning.

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1. Background on the Okanagan River Restoration Initiative (ORRI)

1.1 Significance of the ɋawsitkʷ (Okanagan River)

The ɋawsitkʷ (Okanagan River) is incredibly significant to the Columbia watershed. **The Canadian portion of the ɋawsitkʷ (Okanagan River) supports multiple fish species, several of which are threatened or endangered in Canada and the United States** (COSEWIC 2018, FWS 2018), including:

*the **majority of the total sćwin (Sockeye;** *Oncorhynchus nerka*) production in the nx̌ʷəntkʷitkʷ (Columbia River),

*__remnant runs of Upper Columbia qwəyqwəyʕaćaʔ__ (**Steelhead**; *O. mykiss*),

*__naturally spawning summer/fall ntitiyx__ (**Chinook**; *O. tshawytscha*), and

*__resident xwuminaʔ__ (**Rainbow Trout**; *O. mykiss*), kəkni **(Kokanee**; *O. nerka*), **Mountain Whitefish** (*P. williamsoni*) and **13 other indigenous fish species** (Basok 2000, NPCC 2004).

Approximately 30 % of B.C.'s Blue and Red-listed wildlife species occur in the Okanagan (BC CDC 2019). and Species At Risk reliant on the ɋawsitkʷ (Culturally significant Okanagan River)'s ecosystem include xʔaʔłqʔilʔṁ (**Yellow-breasted Chat**; *Icteria virens*), sniṅaʔ (**Western Screech Owl**; *Megascops kennicotti*), ncʕacʕayna (**Blotched Tiger Salamander**; *Ambystoma mavortium melanostictum*), p'əskʷaqs (**Great Basin Spadefoot**; *Spea intermontana*), and the **Rocky Mountain Ridged Mussel** (*Gonidea angulata*) (COSEWIC 2018).

1.2 Need for Restoration

The ɋawsitkʷ (Okanagan River) is listed as one of the most endangered rivers in British Columbia (ORC 2008) and the Upper Columbia area is considered the highest priority area for recovery efforts according to National Marine Fisheries Service (NPCC 2004). Channelization in the 1950s disconnected the river from its floodplains, wetlands, and hyporheic flows, reducing the river system's ability to;

* filter water and provide clean, secure water sources,
* moderate effects of droughts, floods, climate change, and erosion (temperature and water quality),
* annually store water and moderate spring freshet and low-flow summer flows (temperature and water quality),
* provide critical resources for fish, wildlife, and people,
* offer recreation and learning opportunities,
* provide essential fish and wildlife habitat, and
* contribute to the removal and storage of greenhouse gases.

The ɋawsitkʷ (Okanagan River) ecosystem is highly fragmented (Figure 1);

* 16 % (4.9 km) of the river remains in a natural or semi-natural state (2.8 km and 2.1 km, respectively),
* 84 % (30.4 km) of the river is channelized, straightened, narrowed, and diked (Bull 1999, NPCC 2004),
* the entire river length has been reduced by 50% (Bull et al. 2000), and
* **90 % of associated riparian and wetland habitat is lost** (Bull et al., 2000; Lea 2008).degradation and fragmentation of the river system has impacted aquatic habitat and fish;
* meanders, pool/riffle sequences, and rearing habitat are greatly reduced,
* sćwin (**Sockeye**) egg to fry survival is only half as successful in the channelized section as it is in the natural section (Long 2004),
* juvenile xwuminaʔ (**Rainbow Trout**) are observed in the natural section but not in the channelized section (Matthews 2005 & 2006), and
* ntitiyx (**Chinook**) only spawn at areas along the channelized ɋawsitkʷ (Okanagan River) which were part of the historic river bed (Phillips et al. 2005)

In addition to the works completed on the Okanagan River between an oxbow restoration south of Oliver to the Penticton Channel as already mentioned, an Ad hoc Committee of the ORRI have, all but completed the enhancement of the remnant Okanagan River oxbow at the mouth of Ellis Creek in Penticton. That work has facilitated improved access and improved habitats for fish and a variety of

other wildlife. At the same time the work has improved access to the basin for removal of sediments…a requirement of its function as part of the original federal/Provincial channelization of the Okanagan River while minimizing future impacts on riparian habitats in the basin. As next steps to the Ellis Sediment Basin improvement, the Steering Committee is investigating feasiblity of expanding and further improving the riparian buffer along Ellis Creek's sediment basin.

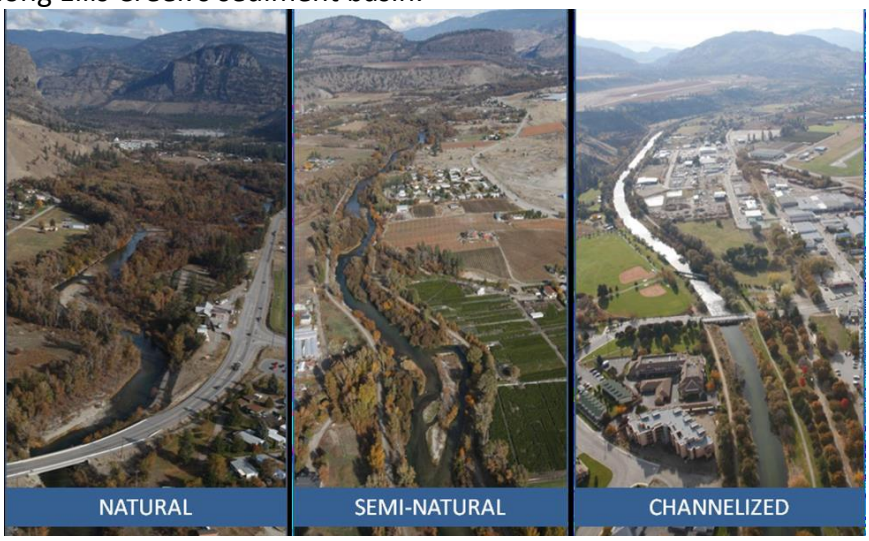

Figure 1. Three states of ḵawsitkʷ (Okanagan River)

Our Website http://pentictonoxbows.ca/ is generously sponsored by:

and

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Oxbow sightings (photos by Rick McKelvey)

Spotted Sandpiper

Greater Yellowlegs

Green-winged Teal

Northern Shoveler

Song Sparrow

Water Smartweed (also know as: Water knotweed – Polygonum amphibian)