

Stop 10 Penticton Dam & The Channel

**italics denote text on screen*

[00:04] From our noisy vantage point here at the dam at the bottom of Okanagan Lake, we're gonna have a look at a few of the hydrology features that we find. So, looking up at the mountains the ridges that we see they form the drainage divide between each of the smaller or the nested catchments that corral the water into flowing down towards Okanagan Lake. So here, for this area, for this larger drainage basin, Okanagan Lake forms for local base levels. Now, Okanagan lake is a natural feature, but it also has a man-made control structure. So, Okanagan Lake yes, it's natural lake, it's also a reservoir. So, the dam here is holding up the water level and allowing it um the one level in the lake to be controlled to suit the needs of downstream users. So, in some ways it's a flood control structure with all of the associated benefits and issues that we discussed. One of the main issues with the dam and with all the dams down the Okanagan River is that they get in the way of the salmon migration. Now we remember that the Okanagan River used to flow slightly differently, but for the purposes of maintaining the channel in a place that reduced flooding for the town of Penticton, it was channelized back in the 50s. Here we are looking down the channel slightly upstream from where it started flowing.

[01:59] There really is quite a striking difference between the flow path of the historical Okanagan River before channelization, which is on the left and after channelization, which we see here on the right. The image on the left is from Penticton Archives and it shows the Penticton [Okanagan] River as it once was meandering across its floodplain. The image on the right from google earth shows us the channelized way that the Penticton [Okanagan] River passes through Penticton today. So channelized in fact, so contained that most people that live in Penticton aren't even aware that it is a river and simply refer to it as a channel.

[02:42] This pattern continues as we travel north along the Okanagan River, or the channel as it is commonly known today, towards the place that we started this stop on our field tour at the dam at the outlet to Okanagan Lake. The river is contained very much within concrete structures. However, we can still see this evidence of the historical path of the river in the form of oxbows, three of which are pointed out here with white arrows. Oxbows are created when meander bends are cut off from the river either naturally or through artificial processes such as in this case. Now this is a story that is common throughout the Okanagan River system. In fact, approximately 50 percent of the length of the river has been lost in the last 100 years.

[03:41] *The loss in stream length led to*

[03:45] *loss of river-floodplain connection*

[03:48] *loss of riparian vegetation and instream diversity*

[03:50] *significant declines in native species*

[03:54] *and thriving exotic species*

There are currently some restoration initiatives underway to work at returning at least some portions of the river back towards its historical nature.

[04:08] Let's finish off this field stop by looking back at the comparison of the historical flow path of the Okanagan River to what we have today. We're looking here again down towards the south where the channel, or Okanagan River, drains into Skaha Lake. Looking at the image on the left we can see that even before channelization there are a number of features, floodplain features apparent around the Okanagan River.

[04:38] Here we have a natural oxbow.

[04:42] Here a group of meander scars. Now, let's have a look at a comparison and see what happened over time.

[04:49] This section, this white arrow here shows us the creation of an oxbow out of a portion of the historical river by the creation of the channel and the change of a historical oxbow into a meander scar. The real beauty of fluvial systems is that they are constantly evolving landscapes. So, what does the future hold for the Okanagan River as it passes through Penticton? Well, only time will tell, but perhaps we can hope for a return to a slightly more meandering stream. With a little more aquatic habitat so that some native species can return and thrive as they once did. While at the same time maintaining a sense of safety for the community of Penticton.