a History of the Salmo River Watershed

An overview of events that have had an effect on our river ecology.

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**Pre-1807** The Sinixt Nation live in this area in a sustainable relationship with nature. Twice a year, 200–300 people of the Kalispel Tribe travel to harvest salmon from the lower Salmo(n) River. (Harvests have been calculated at over 70,000 lbs!) Their economy leaves no mark on the landscape. Sinixt peoples use the Salmo(n) River for fishing and the Salmo(n) Valley for berry harvest, hunting and as a route to the Grohman area on the Kootenay River. Historical and ethnographic sources indicate salmon and sea run steelhead were primary subsistence for First Nations people using the area. The salmon harvested include chinook (first to arrive in spring), sockeye (next to arrive in July) and coho (last to arrive in October).¹

Early accounts suggest that prior to European arrival the Salmo(n) River basin was primarily composed of (up to 70%) old-growth western red cedar and hemlock.²

**1807-1811** David Thompson, perhaps the greatest explorer of all time, is the first white man to explore this region. He travels the Kootenay River, as well as the full length of the Columbia, via the Pend d’Oreille River.¹

**1825** Fur trader Alexander Ross notes an abundance of salmon, along with other accounts of a significant salmon harvest site, at the mouth of the Pend d’Oreille River.³

**1856** The Hudson’s Bay Company capitalizes on placer gold discoveries at the mouth of the Pend d’Oreille River (onset of gold rush). Significant land clearing is done in the area—planned but uncontrolled burns provide easy access to bedrock.³ Surface drainage, overland flow, landslide activity and general hydrology are all affected.

**1857** Construction begins at Fort Pend d’Oreille, is completed in 1859 and renamed Fort Shepherd. A Sinixt settlement site located there had a population of 200–300, plus a burial ground.³

**Late 1850s** Prospectors, including many Chinese, work the Salmo(n) River and its tributaries.⁴

**1859** John W. Sullivan, of the Palliser Expedition, prospects and finds gold on the Salmo(n) River. It takes five days to reach the summit between the Salmo(n) River and the Kootenay River from the confluence of the South Salmo(n) River.⁵

**1860s** Placer mine settlement established (at Ymir) and recorded as Quartz Creek.⁶

**1863** Gold discovered on Wildhorse Creek in East Kootenays.⁴
1865  Dewdney Trail from Victoria to Wildhorse Creek is completed, going through the Salmo(n) River Watershed. John “Jolly Jack” Thornton builds a wing dam at the mouth of the Salmo(n) River. About 200 Chinese men leave Edgar Dewdney’s team and join several hundred others washing gold on the Pend d’Oreille River.4

1866  Gold is discovered on Forty-Nine and Forty-Eight Creeks—the trail goes up North Fork (Erie Creek) over to Toad Mountain.4

1867  Large numbers of prospectors come to Pend d’Oreille by boat, and some overland.7

1870  Fort Shepherd closes and then burns down in 1872,4 marking the end of the fur trade era in the West Kootenays. The loss of influence of beavers likely had a profound effect on the habitat and biodiversity of riparian and aquatic ecosystems.2 Within 60 years of the arrival of the first Europeans, the pristine ecology of the watershed has been greatly transformed to support economic development and resource extraction.

1882  William Feeney, Stagleap Ranch prospector/timber cruiser, is one of the first, if not the earliest permanent settler to the area. (personal communication -Bernarine Stedile).

1886  The Hall brothers, who were First Nations, lead a 14-man gold prospecting expedition up the Salmo(n) River and tributaries from Colville, Washington. First lode claim for silver ore is on Toad Mountain (Kootenay Bonanza Company & Silver King Mine).8

1887  30 claims staked on Toad Mountain (Silver King). The Hall brothers move the Pend d’Oreille ferry downstream to Metaline Falls. Pend d’Oreille and Salmo(n) River trails provide access to claims in Nelson area.

1888  Porcupine and Quartz Creeks raise a gold flurry. Silver King Mines begins exploration for hard rock mines. Land is cleared up the western slopes of the watershed.
Late 1800s to early 1900s Horse logging activity harvests cedar and white pine. Many forestry operations in existence—sawmills are located on Clearwater, Lost and Erie Creeks, and in the Salmon Siding (Salmo) area.9

1890 Railway is organized to run between Fort Shepherd and Nelson. Hall Creek is a busy site of placer mining; Nelson Camp is also active.10

1892 Nelson and Fort Shepherd (N&FS) Railway is granted 10,240 acres of land per mile of laid track.4 Pend d’Oreille River placer miners rediscover gold prospects on the Salmo(n) River.4

1893 Steven Corbett’s N&FS Railway lays tracks through Salmo(n) River valley to Mountain Station in uphill Nelson, completing the last section in December. Salmon Siding is renamed Salmo when the railroad goes through the area. There are 15 placer claims on the Salmo(n) River.10 Salmon Siding (Salmo) opens largely as a lumbering operation.

Historical wetlands near Apex Creek area are impacted by railway infilling and riparian logging—a 10% loss. Permanent and ephemeral wetlands (4 ha.) lost between mouth of Hall Creek and Hall Siding, due to bank stabilization. Permanent and ephemeral wetlands (5 ha.) compromised on Barrett Creek, due to channelization. Permanent and ephemeral wetlands (2 ha.) compromised by bank stabilization and channelization of Quartz Creek. Ephemeral wetlands on east and west side of river at Hidden Creek compromised. Labyrinth Mill site ephemeral and permanent wetlands (6 ha.) compromised. Area between the Salmo River and railway lands, from Salmo to 3 km. north, historically patchy ephemeral wetlands.2

In terms of ecological and aesthetic damage, channelization is described as second only to impoundment. It contributes to loss of “habitat complexity” and related needs for fish to survive.11 Highway, railroad, private landowners and the Province of BC have channelized approximately 20% of the Salmo River from Barrett Creek to South Salmo River.2

1894 Record snow accumulation of 22 feet causes significant flooding in the region.

1895 Ymir Gold Mine is the first claim staked on Huckleberry Creek by Jerome and Joseph Petrie and Oliver Blair. From 1895 to 1970, 7,314 lbs. of gold and 24,866 lbs. of silver, as well as lead/zinc values, are produced.12 Prospecting takes place on the south side of Iron Mountain around Salmo and Erie Creek, and up Sheep and Lost Creeks.13
1896 Gold is discovered up Sheep Creek, Yellowstone Mine staked by T. Bennett. Ymir Hotel and Saloon erected.

1897 100 placer claims along the Salmo(n) River. Quartz Creek flourishes—name is changed to Ymir. Nelson’s population estimated at 3,000. Fem Mill installed on Hall Creek and Porto Rico Mine property on Barrett Creek, each consisting of a 10-stamp amalgamation mill and cyanide plant. Mills powered by wood-fired boilers—Ymir Mine uses one cord of firewood every hour of operation. Timber is cut and hauled from lower elevation, causing loss of riparian structure, likely alteration to channel morphology and corresponding loss of habitat complexity.

1898 Second Relief Mine staked; Erie Creek Camp’s population is 110. Lumbering is the main activity in Salmo; Lavin’s sawmill shuts down. (May indicate significant alteration to confluence of Erie Creek and Salmo(n) River.) Wagon road built up Sheep Creek.

1899 Sheep Creek Camp opens Yellowstone Mine. Settlement at Erie Lake grows to 200 people; settlement begins at Second Relief Mine. Watercourse of Erie Creek moved 0.5 km. to the south, infilling of wetlands, dyking and channelization. Historic inundation of floodplain lost to settlement development.

1900  Yellowstone Mine (Sheep Creek) installs a 10-stamp mill. Queen property begins production; ore is treated by amalgamation at the Yellowstone Mill. Ymir Mine builds an 80-stamp mill (largest in the British Empire at the time) and “state-of-the-art” sand leaching cyanide plant, powered by wood, steam and water, likely causing significant alteration to Huckleberry/Wildhorse (Ymir) Creek. Salmo’s population is 75 (45 men, 13 women, 17 children) Ymir Waterworks built, capable of 50,000 gal./day. Ymir Brewery and Electric Company starts. Ymir’s population estimated at 1000.

1903  Kootenay Shingle Company begins operations in Salmo. Land clearing continues to accommodate mining, prospecting and population growth.

1903-1905  Memoir of D.H. Norcross, manager, Hunter V Mine: “From 1903–1905 we lived at the Hunter V Mine at Ymir. The mine was at about 5,000 ft. elevation and connected to the train by tram. From here an excellent view was obtained of the Salmon River Valley, and I still remember seeing the Great Northern Railway trains looking like tiny toys working their way up and down the valley. Also the Ymir mill, Wilcox mill, Porto Rico and Fern mills were all operating and the tailings entering the river had a result that it appeared as a white ribbon in the distance.”

NOTE: At one time there were 11 stamp mills located in the Salmo(n) River Watershed—the river was said to carry waste and be coloured from these for decades.

1906  J. Waldbesen develops lead ore Emerald Mine/Jersey property (evolves to CanEx Mine) 11 km. southeast of Salmo. CanEx Mine tailings now cover 3–4 ha. historic wetlands (some patches still exist). From 1949 to 1970, Jersey produces 6.4 million tons ore—115,000 tons lead, 263,000 tons zinc and 21,500 kg. silver.

1907  HB Mine, staked by Horton, Billings, Benson & Ross, is the first mine to hire women. First optioned by Cominco in 1911 (which still owns the mineral rights and is
still obligated to monitor the tailing ponds). The HB Mine produces 6,656,101 tons of ore, recovering: 29,425,521 gm. silver, 49,511,536 kg. lead, 260,431,646 kg. zinc, 2,019,586 kg. cadmium, 105,412 kg. copper and 6,159 gm. gold.\(^{21}\)

1908  
Queen Group of Sheep Creek (four claims) eventually erects a 50 tons ore/day mill in 1935, which runs continuously till closing in 1951. The Queen property produces 653,165 tons of ore, recovering: 9,453,383 gm. (21,101 lbs.) gold, 3,121,527 gm. (6,968 lbs.) silver, 7,769 kg. lead and 3,063 kg. zinc.\(^{22}\)

1909  
Ymir Mine slows production, fading from attention as a big producer. Tailings are known to sit directly on the southwest bank of Wildhorse Creek and the Salmo(n) River. Kootenay Belle begins production via a four-stamp mill.\(^{13,23}\)

1912  
Salmo Hotel is erected. In Alaska, Mount Katami erupts—an ash cloud settles on the Kootenays four days later. Relief Mine stops operation.\(^{23}\)

1913  
Yankee Girl Mine (located by J.H. Graham, D.E. Grobe and D. McLeod on October 30, 1899) begins production in earnest after years of start/stop, owner/operator changes and becomes a stalwart of the region.\(^{23}\)

1914  
Last year of mining at the Silver King Mine. Placer operation set up on Sheep Creek to recover gold; tailings from Queen Group Mines are deposited directly into the creek from Yellowstone Mill. Significant factors of turbidity and suspended solids are present in Sheep Creek, along with many other toxic compounds.

1915  
Motherlode Mine runs steadily from 1906, producing 61,336 tons of ore. It consists of a 100-ton stamp cyanide mill erected on Sheep Creek, able to process 125 tons ore/day—the first of its kind in BC.\(^{24}\) All mines/mills generate tailings that may source contaminates to rivers.

1916  
Sheep Creek production ends due to fixed gold prices and production costs. Sheep Creek town site remains active until WWII.

1919  
Iron Mountain Ltd. completes concentrator mill on Emerald property and produces 1,100 tons of galena. Fire at Second Relief Mine destroys 40-stamp mill, flotation separator and the camp.

1920  
Ymir’s population reduced to 300.

1922  
Nugget Mine discovered in 1907, produces 21,409 oz. of gold and 4,836 oz. of silver from 36,665 tons of ore. The Sheep Creek Mining Camp, worked by the Ender-sby family and others, ranks as the sixth largest gold producer in BC’s history, producing 727,000 oz. of gold from 1,744,000 tons of ore.\(^{25}\)

1924-1930  
Brook trout (108,227 fry and eyed egg) 6,000 eyed egg cutthroat trout stocked into Salmo(n) River and its tributaries.\(^{26}\)
1926 Large forest fire in upper Salmo(n) Valley destroys forest not yet cut by Porto Rico Timber. Sawyer and logger Frank Rotter arrives in Salmo from Washington State, and becomes a major landowner and prominent local businessman. He owns the mill located at Sheep Creek and old road (1937–1974), and is the contractor involved in significant channelization and alteration of the Salmo River using a D9 dozer and other equipment instream.

1927 Second Relief Mine revives production for galena using diamond drilling. Oscarson Mining Company builds a 75-ton 15-stamp mill that uses elemental mercury in an amalgamation gold extraction process.

1928 Kootenay Shingle Company ceases operations; this may signify loss of economic production or timber resources following a forest fire. Consolidated Mining & Smelting takes 12,000 tons of ore from Hunter V Mine. Emerald Mine renews gold production.

1929 Operations suspended at Second Relief and Arlington mines. Reno Gold Mine installs a 25 ton/day cyanide processing plant. Yankee Girl ceases production. If dates of the Yankee Girl operation are correct, the tailings pile has been a point source of contaminants directly into the Salmo River for more than 75 years.

1930s The Sheep Creek town site, located at the confluence of Waldie Creek, is estimated at 111 houses. The town site is partially built on tailings. Today, a forest recreation site exists near the old town site location, along with several relics of concentrator mills. Sheep Creek experienced extensive alteration over the course of area mine production.

1931 West Kootenay Power strings 63kv #7 line, providing electricity to Ymir and Salmo.

1931-1934 Rainbow trout (25,000 fingerlings) stocked into Salmo(n) River and tributaries. Stocking since the 1920s may indicate a conscious effort to revive the fishery resource. The impact of stocking on resident species is unknown.

1932-1933 Motherlode Mill is reconditioned to ball mill to treat Reno ore. Accounts suggest that tailings are washed directly into Sheep Creek. Reno Mill is destroyed by fire.

1934 Great BC Forest Fire burns Iron Mountain and Reno Mines surface plants. Crownsnest Pass road (942 miles) completed between Medicine Hat and Vancouver, providing easier access to the Salmo(n) River Valley. The last known ocean salmon is caught near
Nelson at Slocan Pools. This signifies an extreme shift in the ecology of the entire watershed based on the nutrient recycling capacity of anadromous fish after spawning.

1935 Cyanide processing plant is added to Second Relief Mill, and is in operation until 1948.

1936-1953 Rainbow trout (461,000 fry; 370,000 eyed egg) stocked into Salmo River and its tributaries.26

1939 Forest fire rips through Beaver Creek Valley near Fruitvale. Emerald Mine produces 200 tons/day of tungsten ore during WWII.

1940 Dundee Mine ore is treated by a 50-ton concentrator at 1,000 m. elevation on the north side of Oscar Creek. An estimated 360,000 tons of waste material is produced. Dundee and Yankee Girl amalgamated.29

1940-1941 Kokanee (170,000 eyed egg) stocked into Salmo River and its tributaries.26

1940-1942 Brook trout (80,000 eggs) stocked into Salmo River and its tributaries. Expansion of the forest industry results in construction of road networks farther into hills. This signifies changes in runoff, sedimentation, creek crossing and functional riparian habitat.

1940-1950s Construction of Albeni Falls Dam and Box Canyon Dam in the US.
The Kalispel Tribe contends that dams caused shift in fishery resources to a greater portion of non-sport fish—squawfish (now known as northern pike minnow), perch and sucker. Loss to resident rainbow trout fishery.

**1941**  
Great Northern Railway suspends passenger service between Nelson and Fort Shepherd.

**1942**  
Grand Coulee Dam construction is completed, permanently blocking salmon runs. This is the era of Boundary Water Commission and flood control efforts on the Kootenay River at Grohman and Granite.

**1945-1949**  
Brook trout (50,000 eyed eggs) stocked into Salmo River and its tributaries.

**1946**  
Salmo incorporates as a village.

**1948**  
Great flooding in BC, causing extensive damage along the Columbia River from Trail to Oregon. Also presumed to have caused damage to channel morphology and hydrology in the Salmo River Watershed.

**1949**  
Spruce beetle infestation in the southern Kootenays. May signify loss of forest health in the region due to significant alteration, fire suppression, and shift in ecology and species composition. CanEx ceases milling tungsten at Emerald Mine and converts to concentrate lead and zinc.

**1950**  
Clearcut logging as a practice starts in earnest in Canada in the 1950s. Impacts include increased road building, runoff alteration, increased water temperatures, quicker snowmelt and rainfall run-off (freshet) leading to “flashier” more turbid high water events.
1951   HB Mine and Camp constructs a 1,000 ton/day concentrator close to the confluence of Sheep and Aspen Creeks. Consolidated Mining and Smelting (CM&S) initiates construction of Waneta Dam.

1953   CM&S completes Waneta Dam on the Pend d’Oreille River (500 m. upstream of Columbia River). Salmo River Watershed drainage and fish populations are completely isolated. CM&S completes a concentrator mill at HB Mine.

1958   CanEx shuts down Emerald Mine and mill.

1960s   Fishery kill limits on the Salmo River are 15 fish a day.

1963   CanEx constructs “Car Body Runs”—car bodies cabled side to side to prevent tailings from eroding into the river. By 2006, this protection had rotted out; Streamkeepers/Fortis and the Columbia Basin Fish & Wildlife Compensation Program partner together to construct bank stabilization/fish enhancement structures.

1966   Cominco Ltd., formerly known as CM&S, shuts down HB Mine operations.

1967 to Present   Pluto Darkwoods Forestry Ltd., owned by the Wurttemberg royal family of Germany, buys extensive land holdings (136,000 acres) in the upper eastern end of the Salmo River Watershed. Other German princes buy up land in the area as well. Significant industrial logging starts in the high country.

1970   Sheep Creek waste piles from the Queen, Motherlode and Yellowstone Mines are shipped to Cominco’s smelter in Trail for silica extraction.

1971   Canadian Exploration Ltd. (CanEx) ceases operations at Jersey Mine. Two 4+ ha. tailings remain close to the shore of the Salmo River.

1972   Flooding occurs due to above average snow pack. Second highest maximum daily flow at 351 cm/second.

1973   Jersey town site is auctioned off piecemeal and mine reclaimed.

1974   Frank Rotter sells Sheep Creek Mill to Idaho Forest Products. Mr. Rotter dies the following year.

1978   HB Mine and Camp closes.

1979   Seven Mile Dam is completed (reservoir >1,000 acres). Lower several km. of Salmo River is transformed into a reservoir, leading to increased water temperatures and extreme changes in aquatic biodiversity (increased non-sport fish), and alteration to the hydrological regime.
1980s  Several more tailings piles are shipped to Cominco’s smelter at Trail.

1988  Seven Mile Reservoir reaches full pool.

1994  Report by Klohn Crippen of Second Relief Mine tailings (mercury contamination) considers contamination conditions typical of abandoned mine sites throughout the Kootenay region. Private land logging in Porcupine Creek does not recognize Mountain Caribou habitat. Clear cutting causes a shift in hydrology, increased sediment deposition and overland runoff.31

1998  The Salmo Watershed Streamkeepers Society (SWSS) incorporates and begins working to increase aquatic ecosystem health in the Salmo River Watershed and the Columbia River Basin.

2000  The Ministry of the Environment conducts water and sediment sampling of Yankee Girl tailings. Sections of the tailings pond flood seasonally during freshet, leading to contaminant flushing into the Salmo River. Elevated levels of cadmium, arsenic, iron, manganese and zinc all exceed provincial Water Quality Guidelines.31

2003  DFO “Inspector’s Direction” engages Ministry of Agriculture and Lands Contaminated Sites Branch to “stabilize tailing and prevent deleterious substances from entering the Salmo River at Yankee Girl tailings site.” Work to proceed in 2006–2008 to complete containment and partial treatment of this site.

2003-2005  Reports are prepared by URS Canada and SNC-Lavlin Morrow Environmental regarding restoration of Yankee Girl tailings.

2006  SWSS, in partnership with the Columbia Kootenay Fisheries Renewal Partnership, completes The Salmo River Watershed-based Fish Sustainability Plan. This multi-stakeholder initiative, funded by Columbia Basin Trust, includes industry, politicians, government agencies, landowners and community groups. SWSS works in partnership with stakeholders and others to research data gaps relating to aquatic ecosystem health and, with the Plan in hand, is moving toward restoration and other activities.33

2008 ⬤  Pluto Darkwoods Forestry Ltd. change forestry operations to meet conservation objectives as determined by the new owners, the Nature Conservancy of Canada.

Respect river health and water purity by maintaining a 30 metre no development buffer.

We’re All Downstream.

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NOTE: Some information for this story pole of the Salmo River Watershed was adopted from the timeline on the Crowsnest Highway website: http://www.crowsnest-highway.ca/timeline.php