

- o Hydraulic mining operations in the headwaters caused the stream to be very turbid in 1942.
- o Mining activities were suspended in 1942, and in 1944 the stream was crystal clear.
- o Few small irrigation diversions of temporary construction and usually passable to fish; 4 dams of the Eastern Oregon Light and Power Company located on minor tributaries; 2 dams operated by mining and timber interests located on a tributary.
- o At one time an excellent spawning and rearing stream for salmon and steelhead. No large run of salmon has entered this stream for the 25 years prior to 1942; steelhead present when surveyed. A large steelhead run was reported in 1944.
- o Middle Fork at one time was an excellent producer of chinook and steelhead.
- o In 1942 stream bed of Middle Fork covered with silt from gold mining operations 2.5 miles above the Town of Galena, Oregon; in 1944, following 2 years of no mining activity, the water was very clear.

South Fork (1942, 1944 Surveys)

- o Enters John Day River at Dayville, Oregon, and is 36 miles long.
- o Water for domestic and irrigation purposes was diverted from the stream at RM 3, withdrawing practically the entire summer flow.
- o The diversion dam was easily passable during high water, but the diversion was unscreened.

Willow Creek (1944 Survey)

- o Enters Columbia River 11 miles above Arlington, Oregon.
- o Entire summer flow diverted for irrigation.
- o No salmon or steelhead present when surveyed.

Umatilla River (1944, 1945 Surveys)

- o Enters Columbia River at RM 300 and is 119 miles long.
- o Limiting factor concerning chinook salmon and steelhead trout was a total lack of water near the mouth at the time of year these fish migrate.

- o In the lower portion, the entire flow diverted by 15 diversions in the 50-mile section below Pendleton. The channel was dry below the lowermost diversion dam at RM 3.
- o 17 water diversions on the main Umatilla River; 15 diversions below Pendleton and 2 above.
 - canal at RM 29.7 screened by the Oregon Game Commission in 1948;
 - canal at RM 30.9 first screened in 1938; and
 - canal at RM 35.7 also screened in 1948.
- o 11 diversion dams on the main river; first permanent dams were built sometime during 1903 to 1907. These were the West Extension Canal and the Hermiston Light and Power Company dams located at RM 4 and 10, respectively. Both were of concrete construction and both have been provided with fishways since the initial construction.
- o Next 6 dams upstream were constructed of concrete for the use of flashboards and were from 4 to 8 feet high. With the flashboards in place none of these dams was passable to the upstream migration of fish.
- o Another dam was located in the city of Pendleton; concrete structure 4 feet high with a single flashboard crest and with a broken down, 5-step fishway at the south end. It was passable at all times.
- o 2 dams above Pendleton were temporary earth and rock structures that were passable at all times.
- o Large run of chinook salmon in 1914. No salmon present when surveyed.

Butter Creek (1944 Survey)

- o Enters Umatilla River at RM 13 and is 16.5 miles long.
- o Entire flow diverted for irrigation by 20 diversions and 22 dams.
- o No salmon or steelhead present when surveyed.
- o North Fork and South Fork had 5 dams and diversion each; no salmon or steelhead present when surveyed.

Birch Creek (1944 Survey)

- o Enters Umatilla River 7.5 miles below Pendleton, Oregon, and is 18 miles long.

- o Water extensively diverted for irrigation.
- o In 1948 Oregon Game Commission installed 44 fish screens on Birch and McKay creeks.
- o At RM 12 a feed canal diverts water to McKay Creek for storage in McKay Reservoir.
- o At one time an excellent steelhead stream; no salmon present when surveyed.

McKay Creek (1944 Survey)

- o Enters Umatilla River 5 miles below Pendleton, Oregon.
- o McKay Reservoir dam (1927), 157 feet high, at RM 5 formed a barrier to fish.
- o Numerous irrigation diversions were screened by the Oregon Game Commission in 1948.
- o At one time an excellent steelhead trout stream; no salmon present when surveyed.

Mecham Creek (1944 Survey)

- o Enters Umatilla River 25 miles above Pendleton, Oregon, and is 20 miles long.
- o Largest and most important tributary of the Umatilla.
- o Present values for salmon nullified by the critical water use problem in the main Umatilla River.

Walla Walla River (1935, 1936 Surveys)

- o Enters Columbia River 3 miles above Oregon-Washington stateline and is 56 miles long.
- o Flow during the summer irrigating season extremely low because of extensive diversions.
- o The river was dry 2.5 miles below Freewater bridge during the summer for 2 to 4 months, due to irrigation diversions and to absence of heavy subsoil in the area. At no time since the late 1880s has there been a flow of water through this section (known as the "Tumalum Branch") during the summer.

- o 14 dams and 16 diversions on the main river; 6 of the dams and 7 diversions were located below the "Tumalum Branch" and the others above.
- o All of the dams were passable to salmon and steelhead trout during high water stages, and only 3 were barriers during low water: the Burlingame Dam and 2 dams at the Freewater bridge. (They were not barriers because of size, but because they caused the entire flow to be diverted during the irrigation season).
- o These 3 dams plus the Milton power dam, only 1 foot high, were the only permanent structures.
- o All diversions below the "Tumalum Branch" were screened, but none above was provided with protective devices of any kind.
- o Nine Mile Dam, built in 1905 near Reese, Washington, was an effective barrier to the upstream migration and was largely responsible for the decline in runs of chinook salmon. This structure was no longer a barrier at the time of the survey, since the river had cut a channel around it.
- o At one time the river was a good producer of chinook salmon and steelhead trout, but little fisheries value at time of the survey; last chinook salmon run of any importance was reported in 1925.
- o Steelhead present when surveyed.

Touchet River (1935 Survey)

- o Enters Walla Walla River at RM 20 and is 61.5 miles long.
- o Before Nine Mile Dam was constructed on the main Walla Walla River (1905), the Touchet (as well as its tributaries the North Fork, South Fork, Wolf Creek, and Robinson Creek) had excellent runs of chinook salmon and steelhead.
- o Chinook and steelhead present when surveyed.
- o Touchet River once had the best potential fishery value of any stream in Walla Walla River system; no serious barriers to fish migration, and its diversions were mostly small.
- o 20 unscreened diversions; 15 had dams, only 6 were permanent structures.

- o None of the dams was over 3.5 feet high, except Preston-Shaeffer 6-foot mill dam located 1.5 miles above the city of Waitsburg, Washington; had an adequate fishway. Diversion at times may take the entire flow, leaving the channel dry for a distance of about 1 mile.
- o Touchet Irrigation Company diversion at RM 5 withdrew the entire stream flow during period of low water, leaving the channel below the dam virtually dry.
- o On the North Fork 8 low dams and 13 small diversions withdrew 18 cfs; one of the dams was a total barrier.
- o City of Dayton water supply dam, 2 feet in height, was the only permanent dam on the North Fork; the diversion was screened.
- o Wolf Creek had 5 small, unscreened irrigation diversions and several low, temporary diversion dams.
- o None were total barriers to fish; chinook and steelhead present when surveyed.
- o On the South Fork an impassable falls blocked the upstream passage of migratory fish at RM 21.
- o At times flow in the South Fork very low; under extreme conditions the stream may become completely dry in the lower mile.
- o South Fork had 6 small unscreened irrigation diversions and 2 small, temporary, low rock diversions dams that allowed fish passage.
- o No salmon present in the South Fork when surveyed, but it supported the largest run of steelhead trout of any stream in the Touchet River at time of survey.

Mill Creek (1935 Survey)

- o Enters Walla Walla River 6 miles below City of Walla Walla and is 33 miles long.
- o Water was taken from the stream by 12 unscreened diversions; dams were used in connection with 8 of the diversions, only 4 were permanent.
- o All dams were passable to migratory fishes with the exception of the uppermost; this dam was 12 feet high and had an ineffective fishway, blocking the upstream passage of fish.

- o 1.5 miles above Three Mile Bridge a diversion carried two-thirds of the water of Mill Creek into Yellowhawk Creek; the entire Mill Creek stream bed from this point to Walla Walla was dry in summer.
- o No salmon or steelhead present when surveyed.

Little Walla Walla River and Stone Creek (1937 Survey)

- o Enters Walla Walla River near Mission Bridge.
- o Largely a waste ditch for irrigation water.
- o All of Stone Creek tributary diverted for irrigation.

Yellowhawk Creek (1935 Survey)

- o Enters Walla Walla River 3 miles above Mission Bridge.
- o Greater part of flow obtained by diversion from Mill Creek.
- o 29 unscreened diversions; 7 dams, 3 of which are small, low structures passable without difficulty.
- o Whitney dam, 4.5 feet high, had no fishway but was easily passable at the spillway.
- o Walla Walla mill dam, 6 feet high, had an adequate fishway. Ankeny Dam, 6 feet high, with a broken down fishway, was a low water barrier.
- o Brehm Dam, 4.5 feet high, had 2 fishways, only 1 of sufficient size to be usable by large fish.
- o Entire flows of Cottonwood Creek, Reser Creek, and Russell Creek diverted for irrigation.
- o Steelhead present when surveyed.

Birch Creek (1937)

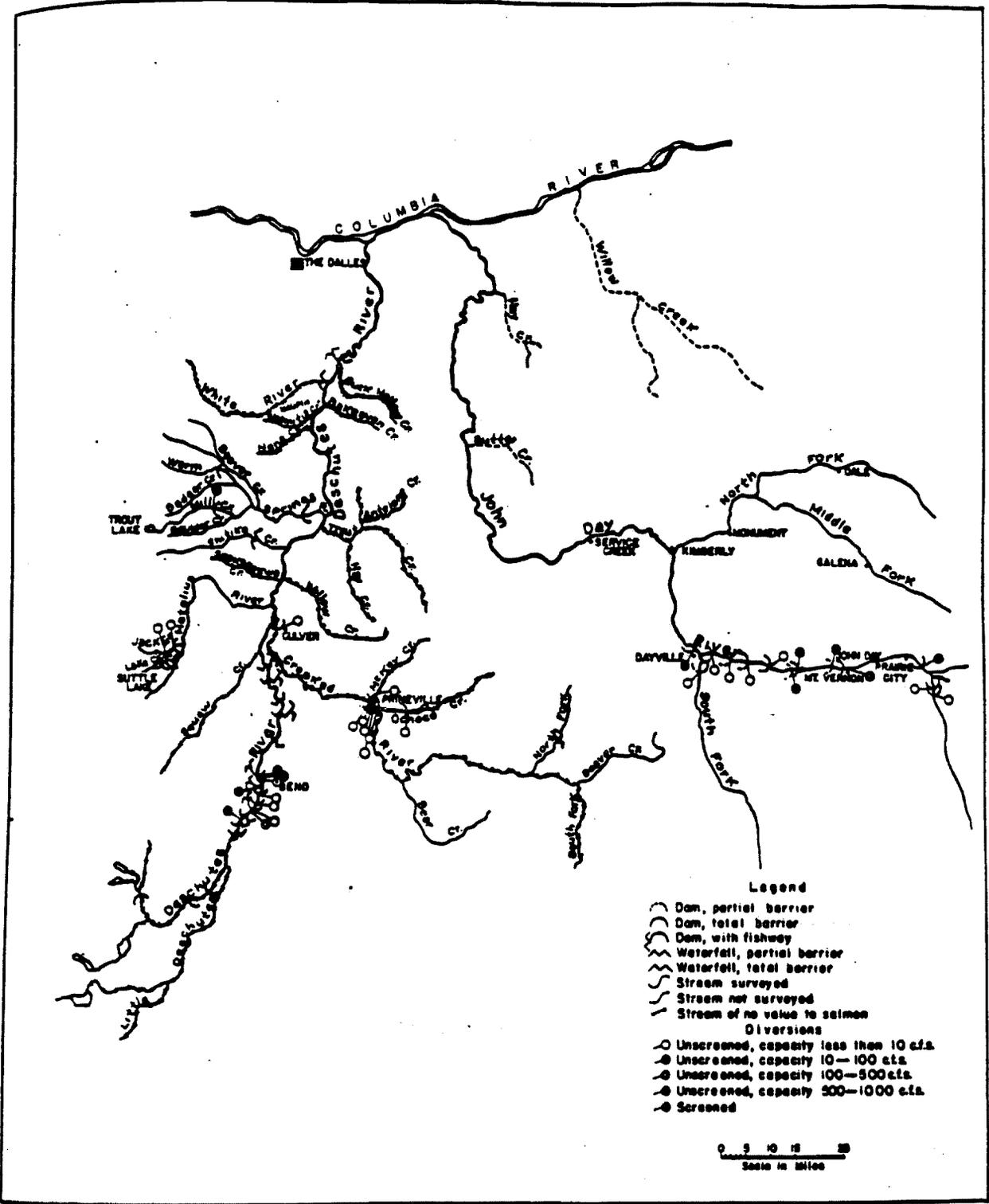
- o Enters Walla Walla River at Oregon-Washington state line.
- o Almost dry during the summer.
- o No salmon or steelhead present when surveyed.

North Fork Walla Walla River (1935, 1936 Surveys)

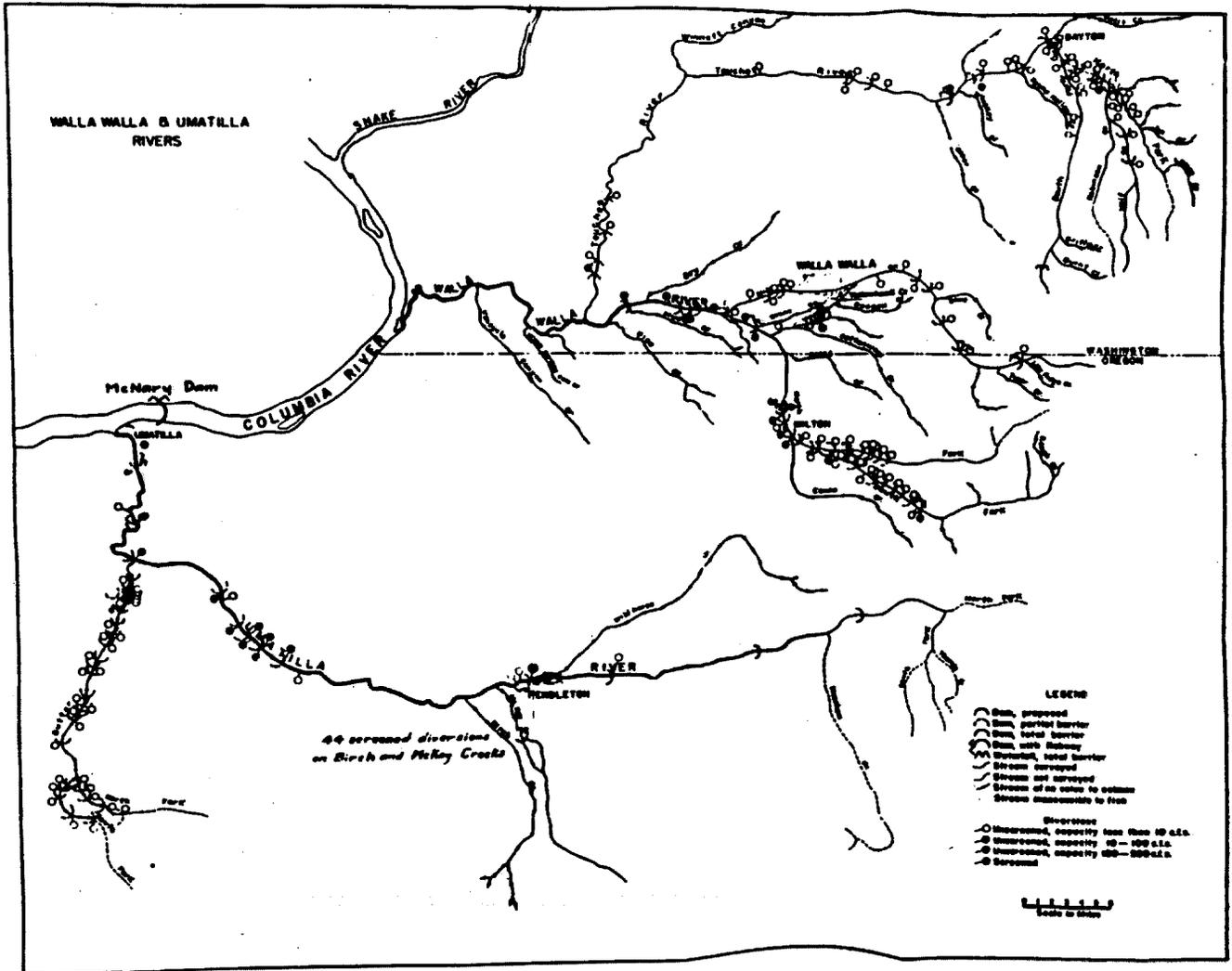
- o Enters Walla Walla River at RM 56 and is 17 miles long.
- o From RM 0 to 4 were 9 small unscreened irrigation diversions with small, temporary dams; easily passable to fish during high water stages, but 4 may be barriers during low water.
- o Steelhead present when surveyed.

South Fork Walla Walla Rivers (1935, 1936 Surveys)

- o Enters Walla Walla River at RM 56 and is 24 miles long.
- o 16 irrigation and 2 power diversions in lower 8-mile section; none were screened.
- o 8 temporary and 2 permanent dams, each 4 feet high, connected with the power diversions.
- o Lowermost power dam operated by Milton Power Company at RM 0.5; no fishway, but was a barrier to fish only during low water stages; unscreened diversion carried about 70 cfs.
- o Second power dam, owned by the Pacific Power and Light Company, was the uppermost structure on the stream; adequate fishway was passable at all times; unscreened diversion carried 80 to 100 cfs.
- o Spring run of steelhead present when surveyed. No salmon seen since 1925. Existing conditions on the main Walla Walla River were largely responsible.



Deschutes and John Day river basins



Walla Walla and Umatilla river basins

AREA 3: COLUMBIA RIVER BETWEEN ITS CONFLUENCE WITH THE SNAKE RIVER AND CHIEF JOSEPH DAM

Columbia River (1946 Survey)

- o 210 miles long in area surveyed from Snake River to confluence of Okanogan River.
- o Most tributaries were subject to intermittent flows due to diversion of water for irrigation purposes.
- o 87-foot McNary or Umatilla Dam was under construction at time of survey at RM 292; fish ladders were planned.
- o At Priest Rapids at RM 396, the Pacific Power and Light Company operated a power plant; no barrier dam, with water diverted by a small wing dam; two fixed-bladed power wheels were operated.
- o Two dams on the main Columbia at time of survey and a third under construction; Rock Island Dam was built by the Puget Sound Power and Light Company in 1934 at RM 452; it was a 22 to 33-foot barrier to migratory fish, but had 3 satisfactory fishways.
- o Fish counting stations were operated at Rock Island Dam by the Fish and Wildlife Service to provide information on fish entering the section of the river above the Yakima River and below Grand Coulee Dam.
- o Relatively small runs of fish remained in the Columbia River above Rock Island in years prior to the building of Grand Coulee Dam.
- o No great losses to the runs could be attributed to the salvage operations and transferring of the stocks to hatcheries and streams below Grand Coulee after 1939 under the Grand Coulee Fish Salvage Program of the Fish and Wildlife Service.
- o From 1939 to 1943 all adult salmon were trapped at Rock Island Dam and placed in the Wenatchee, Entiat, Methow and Okanogan rivers, which enter the main Columbia River below Grand Coulee.
- o In addition to being a migration route of anadromous fish, a relatively important spawning area.
- o Spring, summer, fall chinook salmon present when surveyed.

Rock Creek, Pine Creek, and Alder Creek (1937 Survey)

- o 20 to 30 miles long.
- o Steelhead present when surveyed.

Yakima River (1936 to 1947, Various Surveys)

- o Enters Columbia River at RM 335 and is 198 miles long.
- o Prior to settlement and development, this river system was unquestionably a tremendous fish producer, owing to the extensive spawning and rearing areas for chinook, coho, and sockeye salmon, as well as steelhead trout.
- o Construction of irrigation dams made large sections of spawning area inaccessible and resulted in the extermination of the sockeye salmon populations.
- o All of the major and many of the minor diversions had been screened by late 1940s.
- o As late as 1936, survey parties found only 8 diversions screened out of 40 examined on the main Yakima River. Since then the Washington State Fisheries Department, aided by the Works Progress Administration, has undertaken an effective screening program. The Fish and Wildlife Service has screened government-constructed diversions.
- o Another problem in conserving salmon of this area involved the fishing activities of the Indians, who speared, netted and snagged many of the fish concentrated in the shallow waters below dams and fish ladder entrances, as at the Richland, Prosser, Sunnyside, and Wapato dams on the Yakima River.
- o At the time of the survey, the 47-mile reach from Ellensburg to Easton Dam contained most frequently used spawning areas of the entire river; Easton Dam was upstream limit of anadromous fish migration in the Yakima River.
- o Main hazard to fish life in upper section was reduction in river flow, owing to storage of water in reservoirs.
- o Area above Easton Dam was virtually unused by salmon or steelhead although dam was provided with fish ladder.
- o Construction of Roza Dam at RM 115 in 1940 allowed counts on escapement to the upper Yakima:

- Spring chinook counts in years 1940 to 1947 were 1,001, 239, 521, 689, 242, 447, 989, and 2,645, respectively.
- Fall runs in 1944 and 1947 were 51 chinook and 774 coho salmon, and 29 chinook and 1,943 coho salmon, respectively.
- o 45 individual dams and diversions on the main Yakima River were identified; of these, 25 of 35 diversions were screened (many in 1938), and 7 of the 10 dams had fish ladders or similar devices.
 - Richland Diversion Dam at RM 18 was a low water barrier at time of survey, 2 fish ladders installed later.
 - 2 diversion ditches at dam with total capacity of 625 cfs were screened in 1938.
 - Diversion ditches at RM 38 and 40; one screened in 1938.
 - 8-foot Prosser Power dam at RM 45; 3-step fish ladder built in 1930 effective at high water levels.
 - Canal at dam had battery of huge rotary screens; an underground bypass returned fish to river.
 - Ditch at RM 79; 3 ditches at RM 83 were screened, 1 in 1938.
 - 8-foot Sunnyside Dam at RM 88 was built in 1906-1907 by the Bureau of Reclamation and equipped with 3 fishways.
 - Canal at Sunnyside Dam with 1,250 cfs capacity was unprotected for 20 years; probably more fish entered the canal and perished than in any other diversion from the Yakima River. In 1929/1930 electric fish screens were installed, in 1935 a battery of 8 rotary screens installed, in 1939 these were rebuilt and improved.
 - Canal 0.5 miles above Sunnyside Dam was unprotected before 1930 when electric fish screen was installed, later replaced by bar screen.
 - 9-foot Wapato Diversion Dam at RM 91 was built in 1917; fish ladder built in 1930, second ladder installed later.
 - Canal at dam unscreened prior to 1929 when electric fish screen installed; in 1939, 19 rotary screens installed.
 - 3 ditches about RM 99 had rotary screens.

- Ditch 2 miles above Selah, Washington, was screened in 1938.
- Pomona Dam (only remnants were left at that time of survey) at RM 106 was built to store water to float logs to saw mills.
- Canal at RM 108 was screened in 1938.
- 20-foot Roza Dam at RM 115 had fish ladder and was built in 1940.
- Canal at dam had capacity of 2,200 cfs and was equipped with a rotary drum screen.
- 2 ditches about RM 134 were screened.
- Ditch at RM 135 was unscreened.
- 2 ditches about RM 139 were screened, 1 in 1938.
- Ditch at RM 144 with 612 cfs capacity was unscreened at time of survey.
- Ellensburg Dam at RM 144 was low water barrier to fish.
- Canal at dam was screened in 1939.
- Mills Power Dam at RM 146 was possible low water barrier.
- 2 canals at RM 148 were screened, 1 in 1938.
- 2 ditches about RM 150 were screened in 1938 and 1941.
- Ditch at RM 158 was supplied by 25-foot high paddle-wheel dipper, did not require screening.
- 3 ditches about RM 163 were screened.
- 60-foot Easton Dam at RM 186 was built in 1929; 20-pool fish ladder not very effective; dam was sometimes a barrier to fish.
- Canal at dam was screened and diverted 1,300 cfs after 1937.
- 70-foot Lake Keechelus High Control Dam at RM 198 was impassable to fish; reservoir storage first began in a crib dam 1906 and was completely filled in 1920.

Satus Creek (1935 Survey)

- o Enters Yakima River at RM 60 and is 50 miles long.
- o 7 unscreened irrigation diversions and 5 dams.
 - Indian Service Dam at RM 9.5 was usually passable to fish; irrigation canal was unscreened.
 - Irrigation canal at RM 11 was unscreened.
 - Unscreened irrigation canal at RM 12.5.
 - Unscreened irrigation canal at RM 13 above a 2-foot dam that might have been a low water barrier.
 - 2 unscreened irrigation ditches about RM 26.5.
 - Unscreened irrigation ditch at RM 30; 2.5-foot diversion dam was a low water barrier.
- o Steelhead and salmon reported prior to 1910; few, if any present when surveyed.
- o Impassable 15-foot falls at RM 14 on Logy Creek.

Toppenish Creek (1937 Survey)

- o Enters Yakima River at RM 68 and is 60 miles long.
- o 4-foot irrigation dam at RM 35; during summer entire flow was diverted.
- o Small run of steelhead reported; little value to salmon at time of survey.

Ahtanum Creek (1935 Survey)

- o Enters Yakima River at RM 94 and is 21.5 miles long.
- o Formerly had good runs of salmon and steelhead; few chinook present when surveyed.
- o Mainstem channel had 23 irrigation diversions; many had low earth, rock, or board dams, but no fishways were barriers at low water stages. The only screened diversion was Indian Service Diversion Canal, screened in 1929.
- o 3.5-foot concrete dam at RM 17.

- o Hatton Channel (10 miles long) had 33 unscreened diversions and several low dams; dam 200 yards above return was a definite barrier to fish.
- o Bachelor Creek Cannel (17 miles long) had 38 unscreened diversions and several low diversion dams, 1 of which was 2 miles upstream and a low water barrier.
- o North Fork of Ahtanum Creek (20 miles long) had 5 unscreened diversion, and a 4-foot diversion dam that was a low water barrier at RM 1.5.
- o South Fork of Ahtanum Creek (13 miles long) had 6 unscreened diversions, 2 above small brush dams.

Naches River (1935, 1936 Surveys)

- o Enters Yakima River at RM 101 and is 51 miles long.
- o Spring and summer chinook and steelhead entered the Naches and upper tributaries to spawn at the time of the survey.
- o Only natural obstruction to fish was an 8-foot cascade at RM 45; main obstacles to fish were shallow or dry sections at height of irrigation season, flashboards and downstream aprons at several of the diversion dams, and superior attractions at 1 or 2 diversion returns.
- o 37 diversions (25 screened) and two dams (both with fishways) were identified on the river; most screening occurred in 1938.
 - Ditch at RM 2 was screened in 1938.
 - Ditch at RM 3 was screened in 1938; gravel and rock dam shunted most of the water of lower Cowiche Creek into this canal.
 - Dam with a fishway at RM 3.5 was a barrier to fish during irrigation season; ditch was screened in 1938.
 - Canal at dam was screened with fine mesh panel screens.
 - 2 ditches about RM 6 were screened.
 - 3 ditches about RM 7; 2 were unscreened.
 - 2 ditches about RM 8 were screened, 1 in 1938.
 - Rip-rap wing dam at RM 9.5 with 5 diversions screened in 1938.

- Ditch at RM 10.5 was screened.
- Ditch at RM 11 was screened in 1938.
- Canal at RM 16; 565 cfs capacity for power and irrigation; first protected by electric screen in 1930, battery of rotary screens installed in 1938.
- Canal at RM 17 was screened in 1938.
- Yakima Water Works Dam at RM 18 had a series of concrete abutments 3 to 5 feet high that had a provision for the use of flashboards; a fishway was provided.
- Canal 20 feet above the dam; a small concrete wing shunted debris away from the canal; downstream migrating fish also shunted out into the stream and few fish make the reverse turn back into the canal mouth, but continue on either over the low dam or through the fishway.
- 3 ditches about RM 22 were not screened.
- 2 ditches about RM 24 were screened.
- 2 ditches about RM 26 were screened.
- Ditch at RM 29 above an 80-foot long log wing dam was screened in 1938.
- 2 ditches about RM 30; 1 was screened.
- 2 ditches about RM 31; 1 was screened in 1938.
- 3 ditches at RM 34 to 37; 2 were screened.
- o Cowiche Creek had 9 unscreened diversions, each above a 1 to 3-foot high dam that diverted all or nearly all of the stream flow at that point; South Fork had 5 unscreened irrigation diversions that used almost all of its water.
- o Tieton River had 8 diversions (5 screened) and 3 dams:
 - Tieton Irrigation Dam at RM 14 had no fishway and was a barrier at low water.
 - Rimrock Dam, completed in 1925 at RM 22, was a total barrier to fish.

- 53-foot Clear Creek Reservoir dam on the North Fork was completed in 1918.
- Irrigation diversion at RM 0.25, 0.33, 1.8, 2.5, 3.3, 4, 5.5, and 14; only the diversion at RM 14 was screened at the time of the survey.
- o Rattlesnake Creek had 4 diversions at RM 0.25, .9, 1.2, and 4.3 miles upstream (1 screened) and an 8-foot fall at RM 16 was a low water barrier; small numbers of chinook reported to sometimes enter stream.
- o Bumping River had log jam at RM 13.7 that was a low water barrier; impassable 4 to 5-foot storage dam at RM 16.3; most fish could pass out of the lake into the stream through a conduit without injury.
- o American River had no dams or diversions; series of cascades at RM 14 were low water barrier; excellent chinook salmon producer in the past, fair at time of survey.

Wenas Creek (1937 Survey)

- o Enters Yakima River at RM 106 and is 30 miles long.
- o 60-foot reservoir control dam at RM 12 was total barrier to fish; stream often dry in summer.
- o Formerly had good salmon and coho runs; no runs present when surveyed.

Umptanum Creek (1936 Survey)

- o Enters Yakima River at RM 121 and is 16 miles long.
- o Impassable 35-foot fall at RM 7.6; unscreened irrigation ditch at RM 8.
- o Coho salmon formerly reported before Pomona Dam built on the Yakima.

Wilson Creek (1936 Survey)

- o Enters Yakima River at RM 131.
- o Thoroughly used for irrigation.
- o No salmon or steelhead present when surveyed.

Manastash Creek (1936 Survey)

- o Enters Yakima River at Ellensburg, Washington, and is 29 miles long.
- o 44 unscreened irrigation diversions in lower 11 miles; nearly half had diversion dams.
- o Inaccessible due to irrigation facilities on lower courses.

Taneum Creek (1936 Survey)

- o Enters Yakima River at RM 148 and is 12 miles long.
- o Inaccessible due to irrigation demands and numerous low dams.
- o Before completion of Taneum Canal in 1910, stream supported a good run of coho salmon; no runs reported for many years prior to survey.
- o 5 unscreened diversion ditches at RM 1.5, 2, 2.5, 5.2, and 6.5; 3-foot concrete dam at RM 2.
- o 25-foot falls on South Fork was total barrier at RM 3.5.

Swauk Creek (1936 Survey)

- o Enters Yakima River at RM 153 and is 20 miles long.
- o 12 small unscreened irrigation ditches; 11 had dams that would be barriers at very low water.
- o No salmon present when surveyed.

Teanaway River (1936 Survey)

- o Enters Yakima River at RM 159 and is 11.5 miles long.
- o Good runs of salmon prior to 1904, logging companies operated on stream 1905 to 1916.
- o 9 screened irrigation ditches and 3 low dams that were low water barriers.
- o On North Fork low dam at RM 0.25 diverted entire flow during periods of low water; 3 other low dams; several log jams and beaver dams; 6 screened diversions.
- o Impassable 20-foot falls and log jam on Bear Creek tributary of Stafford Creek.

- o 4 unscreened irrigation diversions with dams on Middle Fork; low water barriers; no salmon runs reported since 1916.
- o Impassable 15-foot fall at RM 7.3 and 3 small unscreened irrigation ditches with dams on lower 3 miles of West Fork.

Cle Elum River (1941 Survey)

- o Enters Yakima River at RM 169 and is 33 miles long.
- o 135-foot Cle Elum Lake dam at RM 8 was completed by the U.S. Bureau of Reclamation in 1933 for irrigation purposes; no fishway.
- o Low rubble dam below reservoir had panel screen.

Big Creek (1935 Survey)

- o Enters Yakima River at RM 178 and is 10 miles long.
- o Used extensively for irrigation.
- o Steelhead present when surveyed.

Kachess River (1935 Survey)

- o Enters Yakima River at RM 187 (above Easton Dam).
- o Impassable storage dam at outlet of Kachess Lake (RM 1.5); crib dam installed at lake outlet in 1905, replaced in 1911 by 63-foot, earth-fill dam built by the Bureau of Reclamation.
- o Good run of sockeye salmon entered the lake until blocked by dam construction.

Cabin Creek (1937 Survey)

- o Enters Yakima River at RM 189 (above Easton Dam); water supply for town of Easton diverted from this stream.
- o No salmon present when surveyed.

Crab Creek (1937 Survey)

- o Enters Columbia River at RM 422.
- o No value to salmon or steelhead at time of survey due to irrigation use.

Quilomene Creek, Tekison Creek, Tarpiscan Creek, Colockum Creek, Stemilt Creek, and Squillchuck Creek (1937 Survey)

- o No value to salmon or steelhead because of intermittent flows due to irrigation diversions.

Wenatchee River (1935 to 1947, Various Surveys)

- o Enters Columbia River at Wenatchee, Washington, and is 55 miles long.
- o Wenatchee and Okanogan River watersheds were the major producing areas of sockeye salmon in the Columbia system at the time of the survey; plentiful steelhead and spring chinook present when surveyed. Summer chinook had difficulty passing Dryden and Tumwater Dams; former large runs of coho salmon greatly depleted at time of survey.
- o Most diversions were screened beginning about 1930.
- o Gunn Irrigation Dam and diversion at RM 6 with capacity of 40 cfs was screened in 1938.
- o Ditch at RM 12 had a capacity of 25 cfs and was screened.
- o Ditch at RM 16.5 diverted 4 cfs and was screened.
- o Dryden Dam at RM 17 has always been a serious obstruction to upstream passage of anadromous fish. Dam was once equipped with small wood fishways that were replaced with a concrete pool-type fishway in 1947. Diversion of water was for power and irrigation purposes; intervening reach of river was nearly dry at low water flows.
- o Canal at Dryden Dam had capacity of 1,375 cfs. In 1935 the only protective device was an ineffective electric fish screen; thereafter, a battery of 7 rotary screens was installed.
- o Old lumber mill dam in the Wenatchee River at Leavenworth (RM 24) was at least a partial barrier to fish for many years, although it was equipped with some semblance of a fish ladder. This dam was removed in 1933 or 1934. Fishways were later constructed at the two remaining dams on the Wenatchee.
- o Canal constructed in 1940 at RM 25, intake was screened.

- o Tumwater Power Plant at RM 28; the power diversion, which was screened, operated a low speed turbine and was returned through the tailrace to the river at this point. The flow in the intervening river channel becomes very low at certain water stages, and at such times this section was a definite hazard and a partial barrier to the upstream migration of fish.
- o Tumwater Power Dam had a drop of about 15 feet onto a wide downstream apron; fish passage was provided by a multiple entrance ladder.

Mission Creek (1935, 1936 Survey)

- o Enters Wenatchee River at RM 12.5 and is 19 miles long.
- o In 1936 the lower 5 miles were polluted with household and barnyard sewage and garbage.
- o 13 unscreened irrigation diversions and 3 low dams; stream usually almost dry and of no value to salmon; few steelhead reported in spring.
- o On Sand Creek a log jam at RM .25 and a fall at RM 2.25 were both barriers to fish at low water.
- o On East Fork numerous beaver dams formed low water barriers and mud and sand in stream bed limited available spawning area; no value to salmon, small run of spring steelhead at time of survey.

Peshastin Creek (1935 Survey)

- o Enters Wenatchee River at RM 21 and is 18 miles long.
- o 3 low dams located at RM 2, 2.5, and 6 were barriers during irrigation.
- o 7 wing dams and 9 irrigation diversions, of which 5 had been screened. Chinook fingerlings observed in 1944, and in 1945 a few spring chinooks were seen spawning. Fair runs of steelhead trout observed in 1944 and 1945; in 1946 and 1947 no salmon or steelhead were found.
- o On Ingalls Creek an impassable 40-foot falls at RM 6.5 and a low dam at RM .75 diverted 28 cfs to a small electric power plant.

Chumstick Creek (1935 Survey)

- o Enters Wenatchee River at RM 24 and is 13 miles long.

- o 13 unscreened irrigation diversions, 3 with dams that were considered barriers during low water periods; first dam was located about RM 2.
- o At times during summer entire flow was diverted and stream bed was nearly dry; steelhead in spring and fall chinook present when surveyed.
- o On Engle Creek 11 irrigation diversions, all unscreened, left the stream dry during most summers; small dam at RM .75 was a barrier at low water stages; impassable 15-foot Parkins Dam at RM 6; little possible value to salmon or steelhead at time of survey.

Icicle Creek (1935 Survey)

- o Enters Wenatchee River near RM 24 and is 26 miles long.
- o Leavenworth Hatchery built in 1940 at RM 2.5. Few coho salmon and fair runs of steelhead trout, chinook and sockeye salmon up to the hatchery at the time of the survey.
- o Irrigation diversion at RM 4 screened in 1938.
- o Irrigation and water supply dam at RM 5 was barrier during irrigation season; irrigation ditch intake screened in 1938.
- o Town of Leavenworth water supply intake near dam was screened.
- o Impassable 5 to 15-foot falls at RM 24.

Chiwaukum Creek (1935 Survey)

- o Enters Wenatchee River at RM 38 and is over 11 miles long.
- o 5 diversions: 3 being unscreened irrigation diversions, a screened diversion to a state trout hatchery, and the other a screened diversion to a CCC camp no longer in use.
- o Series of impassable falls at RM 4.5.
- o No salmon and few steelhead present when surveyed.

Beaver Creek (1937 Survey)

- o Enters Wenatchee River at RM 48 and is 5 miles long.
- o Largely used for local irrigation, became almost dry late in summer.

- o Of no value to salmon.

Chiwawa River (1935 Survey)

- o Enters Wenatchee River at RM 50 and is 27 miles long.
- o Only diversion was RM 3.5, with capacity of 40 cfs for irrigation.
- o No salmon reported for 20 years prior to survey.
- o 3 log jams in lower 3 miles of Chickamin Creek may be barrier at low water.
- o No migratory fish present when surveyed.

Fish Lake Stream

- o Enters Wenatchee River at RM 53 and is 1 mile long.
- o Numerous beaver dams prevented the migration of fish up or down the outlet stream; stream may become dry in late summer.
- o No anadromous fish present when surveyed.

Nason Creek (1935 to 1947, various surveys)

- o Enters Wenatchee River at RM 55 and is 25 miles long.
- o Once had large runs of chinook, coho and steelhead. Between 1939 and 1944 Grand Coulee fish maintenance project maintained a weir just above the mouth and transplanted adult chinook and steelhead from Rock Island Dam into the stream.
- o Gaynor Falls at RM 15 was 12 feet high and a barrier to salmon; doubtful that steelhead could pass at high water.
- o On Whitepine Creek 18 to 20 feet high falls at RM 1.5 were an impassable barrier.

Lake Wenatchee

- o Headwater of Wenatchee River at RM 55.
- o One of few remaining accessible rearing areas for sockeye salmon in the Columbia River system.

- o Grand Coulee fish maintenance project transferred adult sockeye salmon from Rock Island traps into Lake Wenatchee from 1939 to 1943, the largest yearly transfer being 13,000 fish in 1943; in September 1947, 46 spawning sockeye and 10 redds were found on a small gravel area in the lake.
- o A few chinook salmon were placed in the lake in 1939; in 1943, 900 were planted.
- o Little Wenatchee River enters upper end of Lake Wenatchee and is 20 miles long. The stream dropped approximately 100 feet at RM 6 and the cascades and falls were believed to be a total barrier to the upstream passage of fish; impassable 30-foot falls at RM 15.
- o Little Wenatchee River was valuable as a spawning area for sockeye salmon; largest run in the 20 years before the Grand Coulee transplantation project was begun amounted to 412 observed spawners in 1935. In 1948 a total of 4,255 sockeye were taken from the Little Wenatchee River for hatchery purposes.
- o White River enters Lake Wenatchee and is 27 miles long; large runs of sockeye and chinook salmon entered the White River in the early days, but were depleted to a few hundred fish by 1935. In 1948 it was estimated that nearly 10,000 sockeye spawned in White River.
- o At RM 13 of White River was impassable 25-foot falls.
- o 8-foot falls located at RM 4 of the North Fork of White River believed to be a barrier to salmon.

Entiat River (1935 to 1947 Surveys)

- o Enters Columbia River at RM 483 and is 52 miles long.
- o Large runs of chinook salmon and steelhead trout that entered the Entiat in the early days had been practically exterminated by 1925 due principally to the construction of small dams and the diversion of water; last good run prior to survey was in 1904.
- o In 1898 a dam with an ineffective fish ladder forming a partial barrier to salmon was built at saw mill site at RM 1. A new dam was built which entirely obstructed the passage of fish upstream; this dam was later removed, but others were installed which continued to obstruct the passage of fish.

- o A power dam 4 feet in height was constructed by the Puget Sound Power and Light Company on the Entiat about RM 3; it was provided with a fishway in 1939. Dam formed a barrier because of diversion of flow to power plant (and later for irrigation) 1 mile downstream; river channel was impassable to low water stages.
- o The 8-foot high Kellogg Mill Dam was built in 1913 at RM 3 and was a barrier to fish except at flood stages. The dam continued to bar the passage of fish until an opening was blasted through the structure by sportsmen in 1932.
- o In 1941 the Entiat hatchery was constructed at Packwood Springs, approximately at RM 7.
- o Harris Mill Dam at RM 11 was constructed in 1930. This dam, 13.5 feet high, was provided with an ineffective fishway in 1931; better fishway was constructed in 1939. Entire structure was washed out in the flood of 1948.
- o Dams that formerly obstructed the passage of migratory fish had been removed or provided with fishways by late 1940s.
- o Of at least 19 irrigation diversions, 18 had been provided with fish screens at the time of the survey.
- o Fish Tail Falls at RM 28 appeared to be a barrier during low water stages.
- o Entiat Falls at RM 33 was 10 feet high and a barrier to fish; several additional 8 to 10-foot falls farther upstream.

Mad River (1935 to 1947, Various Surveys)

- o Enters Entiat River at RM 11 and is 25 miles long; formerly principal steelhead trout producer in Entiat River system.
- o Passage of migratory fish was greatly restricted for many years by the Harris Mill Dam on the main Entiat.
- o Log dam about RM 0.6 supplied unscreened irrigation diversion ditch.
- o Plank dam 3 feet high at RM 1 supplied a screened pipeline leading to the Harris lumber mill dam. Both dams were obstructions to fish at low water stages.

North Fork of Entiat River (1935 to 1947, Various Surveys)

- o Enters Entiat River at RM 34 and is 10 miles long.
- o Blocked 600 yards above mouth by 3 falls 10, 18 and 30 feet high.
- o No salmon and some steelhead present when surveyed.

Chelan River (1935 Survey)

- o Enters Columbia River at RM 503 and is 4 miles long.
- o No salmon or steelhead present when surveyed, due to steep gradients and intermittent flow resulting from diversion of water to power plant.

Antoine Creek (1936, 1937 Survey)

- o Enters Columbia River 2.5 miles below Azwell, Washington.
- o Entire flow diverted near mouth of irrigation; 1-mile reach dry at time of survey.

Methow River (1934, 1935, and 1938 Surveys)

- o Enters Columbia River at Pateros, Washington, and is 71.5 miles long.
- o Formerly supported large runs of chinook and coho salmon and steelhead trout.
- o Fair spring run of steelhead trout and small spring and summer runs of chinook salmon present when surveyed.
- o From 1899 through 1914 a hatchery was operated at Twisp (RM 38) by the State of Washington and the Okanogan County Game Commission. This hatchery collected up to 2 million coho salmon eggs and about 70,000 chinook eggs annually.
- o In 1915 the Washington Water Power Company constructed a dam at Pateros, near the mouth of the river, which was not provided with fishways. Since the dam was impassable, no fish could reach the hatchery. Therefore, it was moved downstream to the dam site. Silver salmon eggs were taken at this new location, although in smaller numbers than previously, and in addition 2 to 4 million steelhead eggs were taken annually. Practically no chinook salmon eggs were handled by the hatchery during this time, as the run had been virtually exterminated.

- o Egg taking was discontinued in 1921; attempts were made from 1926 to 1931 to introduce fall chinook salmon from other hatcheries.
- o By 1930, when the power dam at Pateros had been removed, the run of coho salmon had all but disappeared, and the run of steelhead was very small.
- o In 1935, a few spring chinook salmon were seen in the main Methow and some of its tributaries.
- o Many open irrigation diversions resulted in the death of thousands of young migrants annually, which was pointed out by the Washington State Commissioner of fisheries as early as 1902.
- o Diversion dams, which were often impassable during low water stages, seriously hindered fish migration.
- o Prior to the Grand Coulee fish maintenance project, some diversions in the Methow watershed had been screened and the power dam had been removed. Methow was not included in the fisheries transplantation program until 1941, as the screening program was still under way; in 1941 a program of annual liberations of artificially propagated chinook salmon and steelhead trout was begun in Methow River.
- o Although the water of the Methow River was used extensively for irrigation at the time of the survey, it was still an important, usable stream, both as a spawning and rearing area and as a migration route between the Columbia River and the numerous tributaries of the Methow River system.
- o 2 Diversion dams on the main Methow River were sometimes impassable to migrating fish during low flow; Bolinger Dam, at RM 12, and the Methow Valley Canal Company irrigation diversion dam at RM 43.
- o 3 other dams were passable at time of survey.
 - Parkinson irrigation dam at RM 24.
 - Foghorn irrigation and power dam at RM 49 had fishway installed in 1942.
 - Little Wetzel irrigation diversion dam at RM 54.
- o In August 1935 there were 26 irrigation diversions on the main Methow withdrawing a total flow of more than 500 cfs; none were screened at the time of the survey; by 1938 the Washington State Fisheries Department had succeeded in screening the important diversions.

- o In 1946 the Winthrop hatchery trapped 1,074 chinook.

Gold Creek (1937 Survey)

- o Enters Methow River at RM 20 and is 8 miles long.
- o 3 beaver dams might be impassable at low water stages.
- o 4 irrigation diversions between 1,015 and 4,120 yards above the mouth, no fish protective devices.
- o Entire stream flow diverted for irrigation during late summer and early fall; considered to be of no present or potential value to migratory fish.

Twisp River (1935 Survey).

- o Enters Methow River at RM 38 and is 27 miles long.
- o Migratory fish able to ascend practically to headwaters during most of the year; however, during late summer and early fall when the water was being used for irrigation, Airy Ditch, about RM 0.5, took the entire flow and limited the use of the stream to the early runs of steelhead trout and chinook salmon.
- o 18 irrigation diversions with aggregate withdrawal in August 1935 of 115 cfs; most major water diversions were screened.
- o In earlier years great numbers of salmon used the spawning area in this stream and its tributaries; however, the many dams and formerly unscreened diversions in both the Twisp and the main Methow Rivers caused such unfavorable conditions that the only populations of migratory fish still using the stream when the runs were intercepted at Rock Island Dam in 1939 were a few early run spring chinook salmon and lesser numbers of steelhead trout.
- o Impassable falls about 1 mile above the mouth of War Creek made it of little value to migratory fish.

Chewack River (1935 Survey)

- o Enters Methow River at RM 48 and is 40 miles long.
- o Excellent producing area for chinook salmon in the early days.
- o Steelhead trout runs persisted until runs were intercepted at Rock Island on the main Columbia River in 1939.

- o Former dams and unscreened diversions on the main Methow River played a major part in the depletion of these runs.
- o Passable to salmon in the lower 32.5 miles up to Chewack Falls.
- o Fulton irrigation diversion dam at RM .7 was a barrier to migratory fish at low water stages.
- o Chewack irrigation diversion dam at RM 7 was a low water barrier to fish.
- o Of the 5 irrigation diversions, none were screened at the time of the survey, but all of the large permanent diversions later were screened by the Washington State Department of Fisheries; total amount of water diverted at the time of the survey was about 150 cfs.
- o Big Boulder Creek had 20-foot impassable falls at RM 1; little possible value to salmon or steelhead.
- o 2 impassable beaver dams were within 500 yards of the mouth of Eightmile Creek; 3-foot dam at RM 2.5 with 2 diversions (1 screened); several impassable beaver dams between RM.5 and 2.
- o Impassable beaver dams above and below the mouth render Twentymile Creek entirely inaccessible to migratory fish; impassable 25-foot falls at RM 1.
- o Rock slide and log jam 4 feet and 40 feet long formed a total barrier to migratory fish at RM 6 on Lake Creek; storage dam 2 feet high at the outlet of Black Lake was a barrier to migratory fish at low water stages; no salmon or steelhead present when surveyed.

Wolf Creek (1937 Survey)

- o Enters Methow River at RM 50.5 and is 13 miles long.
- o Most flow diverted through a flume into Patterson Lake; stream entirely dry at its confluence with Methow River except at spring runoff; no value to salmon or steelhead.

Goat Creek (1937 Survey)

- o Enters Methow River at RM 60 and is 13 miles long.
- o Several diversions for farm irrigation took the entire flow during the summer and early fall.
- o No salmon or steelhead present when surveyed.

Early Winters Creek (1935 Survey)

- o Enters Methow River at RM 64 and is 18 miles long.
- o Falls 20 feet high at RM 7 impassable except possibly to steelhead at high water stages.
- o 2 unscreened irrigation diversions in the lower part of the stream.
- o On Cedar Creek 3 impassable falls, 20, 45, and 30 feet, located at RM 2.
- o No salmon or steelhead present when surveyed.

Lost River (1935 Survey)

- o Enters Methow River at RM 70 and is 22 miles long.
- o At RM 7 impassable rock slide 20 feet high; high impassable falls at RM 12.
- o At one time heavily populated with chinook salmon. Indians from surrounding regions formerly went to Lost River to obtain their winter supply of fish.
- o Impassable power dam built at Pateros on Methow River in 1915 resulted in the virtual extermination of the runs into Lost River.
- o On Eureka Creek at RM .75 an impassable 35-foot falls.

West Fork, Methow River (1935 Survey)

- o Enters Methow River at RM 71.5 and is 17 miles long.
- o 1 irrigation diversion at RM .5 was not screened at time of survey.
- o 2 falls 11 feet and 8 feet high at RM 9 were impassable to migratory fish, with the possible exception of steelheads at high water.
- o At RM 10 a log jam 20 feet high formed a total barrier to fish.

Swamp Creek (1937 Survey)

- o Enters Columbia River between Methow and Okanogan Rivers and is 12 miles long; intermittent.
- o No salmon or steelhead present when surveyed.

Okanogan River (1934 and 1936 Survey)

- o Enters Columbia River near Brewster, Washington, and is 120 miles long.
- o Sockeye and chinook inhabited this river system at the time of the survey; steelhead trout used lower portion of the river to a limited extent.
- o Okanogan River was an important Indian fishing ground; as late as 1931 the natives built brush fishing weirs across the lower part of the river near Monse, Washington, trapping practically all adult salmon going upstream.
- o In Canada, large numbers of sockeye were taken by the natives on the spawning grounds.
- o Depletion of the large early-day runs of both chinook and sockeye salmon must be attributed to a combination of over-exploitation by the commercial fishery in the lower Columbia and the destructive Indian fishery.
- o A counting weir operated at the Oroville mill dam from 1935 to 1937; resultant counts were 264 sockeye in 1935, 895 in 1936, and 2,162 in 1937; no significant number of chinook passed.
- o From 1939 to 1943, anadromous fish which entered the Okanogan were trapped at Rock Island Dam; sockeye were hauled by tank truck to Lake Osoyoos, and chinook placed in other stream systems.
- o In late 1940s the Okanogan River had the greatest available, and potentially available, habitat for sockeye salmon in the entire Columbia River System; sockeye used Lake Osoyoos and some 8 miles of the river immediately above the lake for rearing and spawning area.
- o Lake Osoyoos (RM 80) was originally one of the chief producers of sockeye salmon in the Columbia River system.
- o Summer water temperatures were extremely high, reaching the high 70s below Lake Osoyoos.
- o Considerable amount of water withdrawn by means of pumps between the mouth and Lake Osoyoos; intakes of pumps were all screened.
- o Zosel Mill Dam built in 1927 at Oroville was about 4 feet high and provided with an improved fishway.

- o Diversion dam 8 miles above Oliver, British Columbia, and below Lake Vaseaux was the upper terminus of fish migrations at the time of the survey; dam was about 6 feet high and a total barrier to fish. Dam once was provided with an ineffective fishway; dam diverts about 170 cfs of water into an unscreened canal for irrigation purposes.
- o Below Lake Skaha was a cascade-type falls about 30 feet high which appeared to be a barrier to fish.
- o Low impassable dam at the outlet of Lake Okanogan (RM 120) had no fishway.
- o Towns of Okanogan, Omak, Tonasket, and Oroville all discharged raw sewage into the river.

Chiliwist Creek and Loup Loup Creek (1936 Survey)

- o Enters Okanogan River at RM 14.5 and 16; entirely diverted for irrigation.

Salmon Creek (1936 Surveys)

- o Enter Okanogan River at RM 25 and is 25 miles long.
- o Conconully Reservoir Dam at RM 16 was a total barrier to fish; dam was completed by the Bureau of Reclamation in 1916 to store water for the irrigation season.
- o Similar smaller dam located on a tributary a short distance above the Conconully Dam and practically the entire flow was impounded.
- o Before the completion of the irrigation project, Salmon Creek supported a large run of chinook; no salmon or steelhead present when surveyed.

Omak Creek (1937 Survey)

- o Enters Okanogan River at RM 31.5 and is 25 miles long.
- o An impassable 16-foot lumber mill dam at RM 0.75.
- o 2 unscreened irrigation ditches; in late summer the lowermost ditch, 400 yards above the mouth, withdrew the entire flow remaining in the stream bed at that point.
- o St. Mary's Mission diversion dam at RM 5.75 was 5 feet high.

- o Chinook salmon and steelhead trout formerly spawned in small numbers up to the mill dam; little value to salmon or steelhead at time of survey.

Bonaparte Creek (1936 Survey)

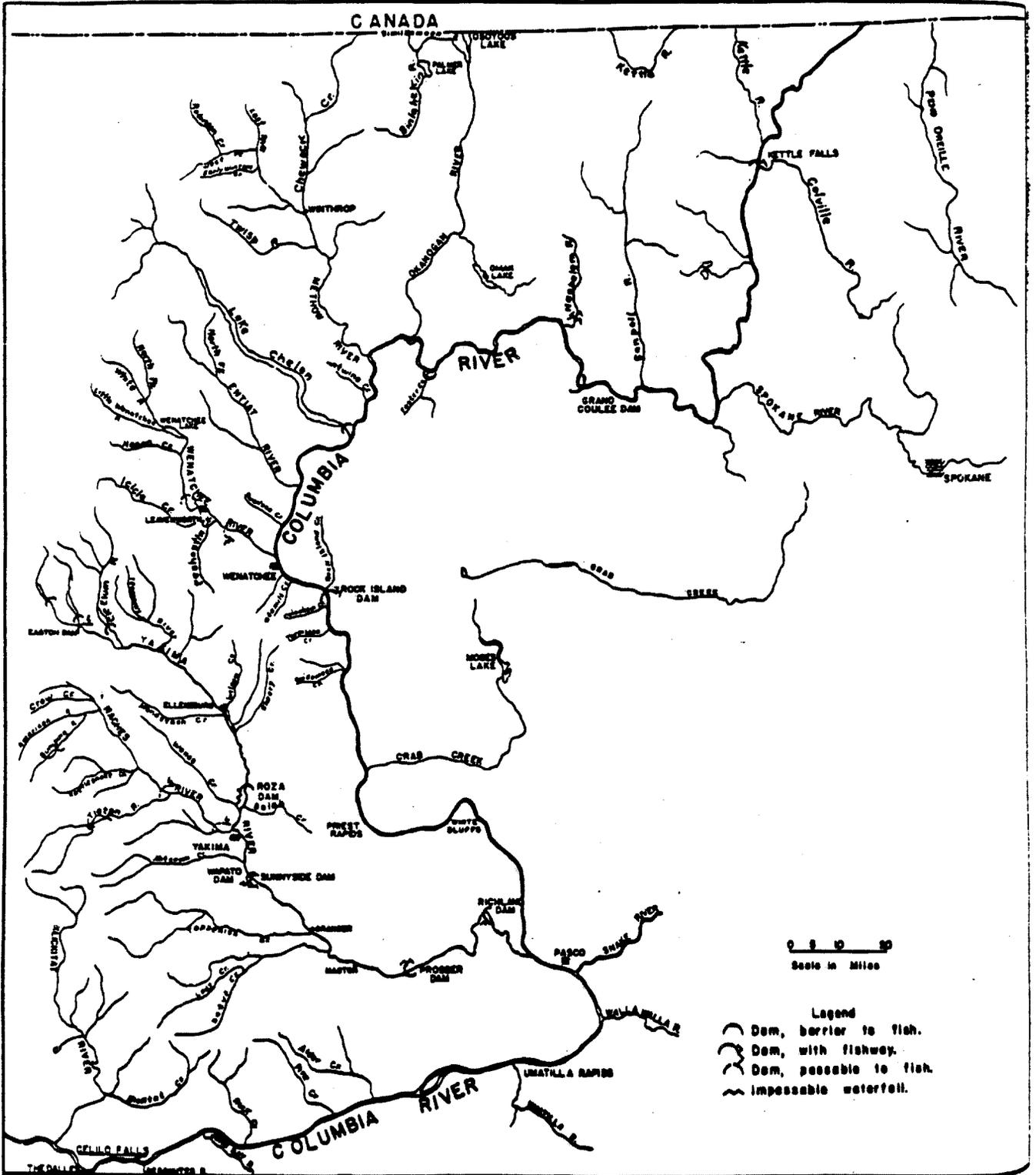
- o Enters Okanogan River at RM 55.5 and is 25 miles long.
- o Entire flow used for irrigation at time of survey.

Similkameen River (1936 Survey)

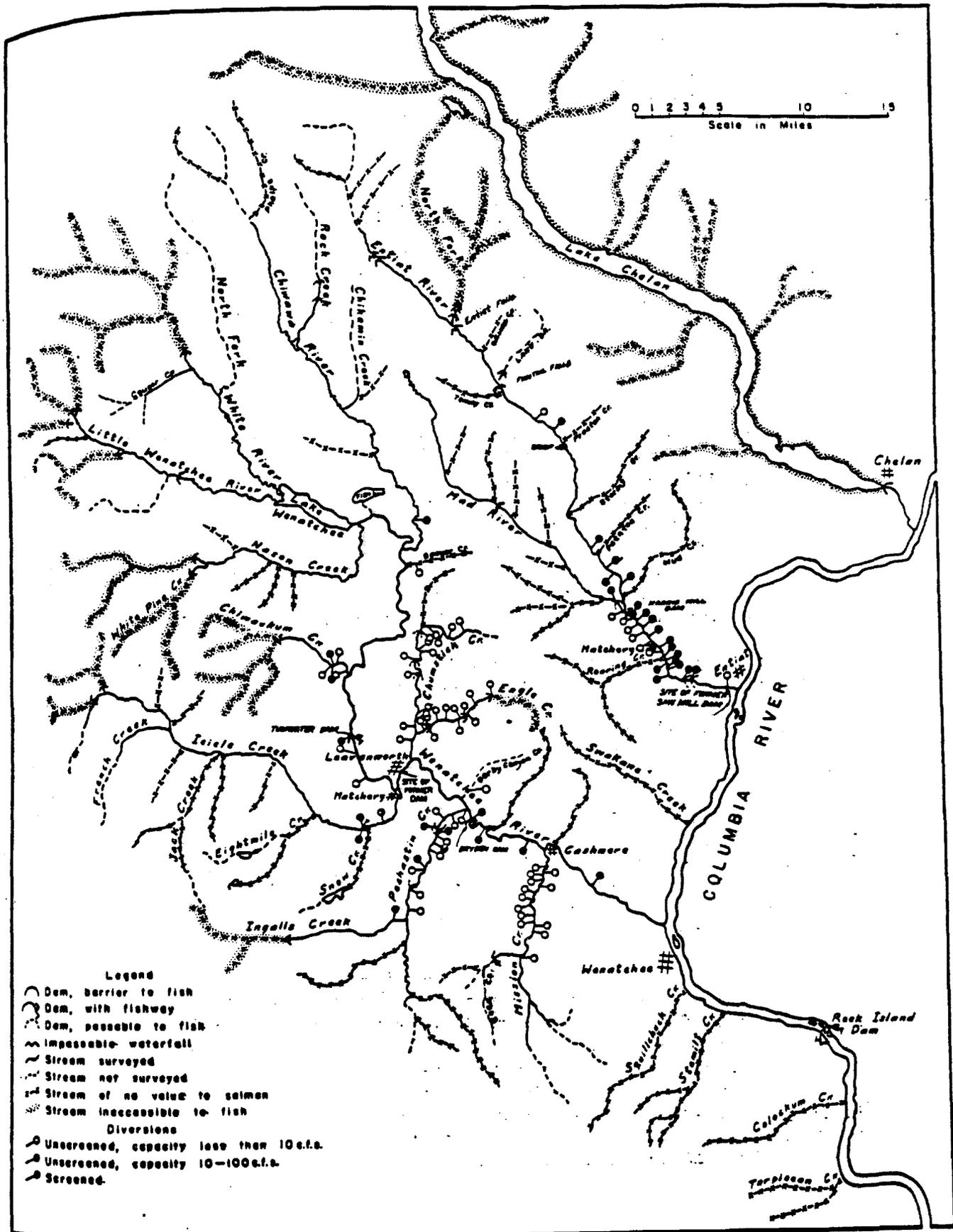
- o Enters Okanogan River at RM 75.
- o Impassable power dam 65 feet high 100 yards above the falls.
- o 1 large water diversion in the canyon above the power dam withdrew more than 100 cfs for irrigation and was unscreened.
- o Summer water temperatures high in the lower section (71°F).
- o 15-foot falls at RM 6 was at least a barrier at low water.
- o 6-mile stream section from the mouth to the falls and power plant supported a small run of chinook prior to 1939.
- o In 1936 about 500 sockeye found in the stream, all of them having died without spawning.
- o Since the cessation of fish trapping at Rock Island Dam in 1943, a few chinook and sockeye again have entered the stream.
- o Large gold mine at RM 10; catch-basin designed to hold cyanide waste production had been long since filled, with a subsequent overflow directly into the river; samples of river water taken as far as 9 miles downstream from the mine were found to contain a cyanide compound.
- o Sinlahekin River lost greater part of flow to unscreened irrigation diversions during summer months.

Foster Creek (1937 Survey)

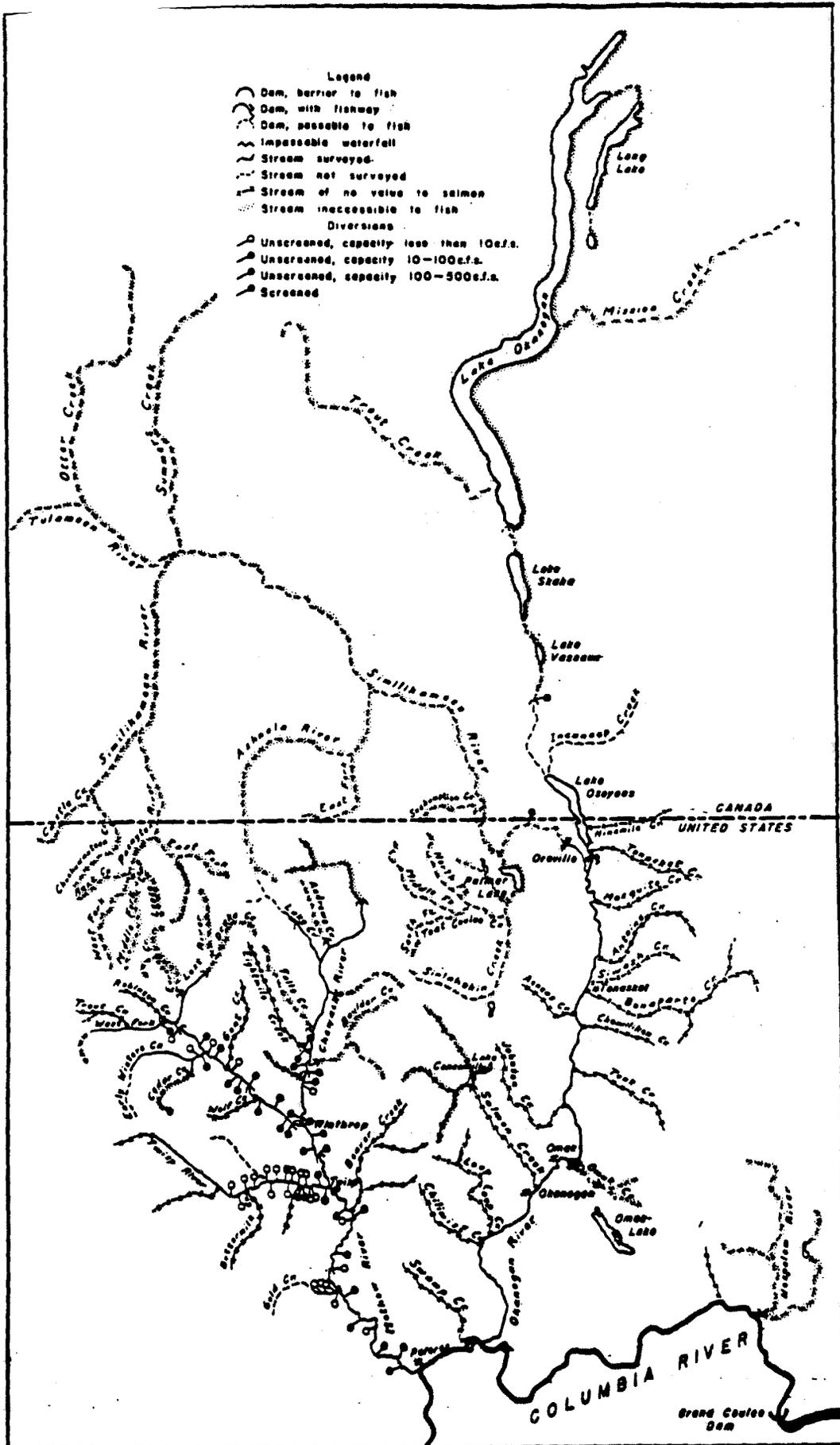
- o Enters Columbia River at RM 555 and is over 10 miles long.
- o All flow diverted in summer.
- o No salmon or steelhead present when surveyed.



Yakima, Wenatchee, Entiat, Chelan, Methow, Okanogan, Sanpoil, Spokane and Colville river basins



Wenatchee and Entiat river basins



Methow and Okanogan river basins

AREA 4: COLUMBIA RIVER ABOVE CHIEF JOSEPH DAM

San Poil River

- o Formerly supported good runs of chinook salmon; decline was evident around 1890; good run in 1918.

Spokane River

- o Salmon formerly ascended to impassable falls near Spokane. In 1883, estimated Indian catch of 2,000 fish.
- o In Spokane River below the falls large numbers of fish were present prior to 1882 but had declined since, until by 1894 the numbers were very few, although steelhead still occurred in considerable numbers.
- o In 1889 the Monroe Street Dam was constructed by Washington Water Power at Spokane Falls.
- o The Nine Mile Falls Dam was completed in 1908. This dam was constructed by a railway and power company. Washington Water Power acquired the facility in 1925.
- o In 1910 the Little Falls Dam was built at RM 27; dam was 60 to 70 feet high, had a fishway. The dam was owned by Washington Water Power Company, which in the same year built the 60-foot Nine Mile Falls Dam some 19 miles farther upstream.
- o Impassable 175-foot Long Lake Dam was built in 1915 4 miles above the Little Falls Dam. Mitigation was provided for fish losses.
- o By 1918 the chinook, coho, and steelhead runs had practically disappeared from the river.

Colville River

- o Salmon runs formerly ascended to Meyers Falls, about 4 miles above the river mouth, but the 80-foot lower fall and the 26-foot upper fall presented an impassable barrier to fish.
- o Salmon formerly spawned in the river below the falls prior to 1878, but were apparently scarce by 1890.

Kettle River

- o Smelters are reported to have run slag into this river and killed off many fish at times, but a few persisted until the building of Grand Coulee Dam.