

2.0 INDIAN FISHERIES IN THE UPPER COLUMBIA BASIN.

In his analysis of aboriginal fishing in the Columbia Basin, Hewes (1947, 1973) states that *"aquatic environments may cut across many distinct land ecological systems and unite into a single economic system people who occupy seemingly diverse territories: he cites the Columbia River as an example"* (Walker 1967).

Historical and ethnographic sources indicate that salmon and steelhead were the principal means of subsistence for nearly all of the tribes in the Columbia River drainage, from The Dalles and Celilo Falls to Kettle Falls and even to the source of the Columbia at Columbia and Windermere Lakes in British Columbia. Indian fisheries were established on the mainstem and all of the principal tributaries, including the Deschutes, John Day, Umatilla, Walla Walla, Snake, Clearwater, Salmon, Yakima, Wenatchee, Methow, Okanogan, Sanpoil, Spokane, Pend Oreille and Kootenai Rivers.

Although they generally occupied a particular territory, the tribes were nomadic fishing, hunting and gathering societies. They followed a precise annual cycle of movement in order to exploit their environment, i.e., their movements were structured to take advantage of the arrival of salmon, the growing seasons of roots and berries, availability of game, etc. They were also adaptable. For example, Rev. Elkanah Walker (Drury 1963, 1976) records several instances when severe winters that were destructive to game resources forced the Spokanes to temporarily migrate to lower portions of the river system such as the Palouse River, Celilo Falls, and Dalles where they could intercept the earliest part of the salmon run. Apparently, this was a common occurrence for native cultures throughout the Plateau (Walker 1967 cites 13 references). Deward Walker (1967) argues convincingly that mutual cross utilization of economic (natural) resources was the rule, not the exception, by tribes of the Columbia Basin. Furthermore, the fisheries resources throughout the Columbia Basin above The Dalles were owned in common and particular geographic locations could be, and were, accessed by all of the tribes of the basin, although members of the tribe which lived in a geographic region during the entire year acted as stewards of the resource. The tribe appointed a Salmon Chief to oversee fishing operations and distribute the catch.

2.1 SPOKANE TRIBE OF WASHINGTON.

The Spokane Tribe fishing territory extended along the length of the Spokane River and its tributaries from the mouth to just upstream of Spokane Falls. The Spokane also shared fisheries on the mainstem Columbia from the mouth of the Spokane to Kettle Falls with the Sanpoil and Colville Tribes. The accompanying map of their fishing territory (Fig. 2.1) was prepared from a description of their territory adopted by the Indian Claims Commission Interlocutory Order of April 17, 1961. The following historical and ethnographic sources were also to construct the fishing territory map: Curtis (1911), Lewis (1906), Teit (1928), Ray (1936), Swindell (1942), Deutsch (1956), Roy and Walker (1961), Ruby and Brown (1970), Chalfant (1974), Walker and Lahren (1977), McDonald (1978), Masten (1979), Galm et al. (1981), Beak Consultants, Inc. (1982), Bonga (1982) and Stimson (1985).

Figure 2.1 Map of Spokane Tribe's usual and accustomed fishing territory.



SPOKANE RESERVATION: 1985

- Aboriginal Territory
- Principle Anadromous Fisheries
- Other Anadromous Fisheries
- Resident Fishery Areas

Ethnographers generally recognize three divisions of the Spokane Tribe: (1) The Lower Spokane who occupied the lower 28 miles of the Spokane River from Little Falls to the confluence with the Columbia; and on Chamokane Creek. (2) The South or Middle Spokane who lived along Latah (Hangman) Creek valley from its confluence with the Spokane River near Spokane Falls and extending about 40 miles upstream, and (3) The Upper Spokane who lived along the Little Spokane River and the Spokane River from the confluence of the Little Spokane to Spokane Falls (Curtis 1911, 1930; Teit 1928, 1930; Spier 1936; Roy and Walker 1961; Ruby and Brown 1970; Chalfant 1974; Swanton 1979; Masten 1979). The three divisions were not discrete in a political or social sense since intermarriage was a common occurrence and they mutually shared the resources of the Spokane Valley. Presently these three divisions are consolidated on the Spokane Reservation along the lower 32 miles of the Spokane River, except for some of the upper Spokane currently residing on the Coeur d'Alene Reservation. This account outlines collectively fishing activities of all three divisions.

2.1.1 Anadromous fish resources.

Salmon were found throughout the Spokane Tribe's territory. The Spokane Tribe fished for salmon principally along the Spokane River from the mouth to Spokane Falls, and also along the Columbia River to Kettle Falls. The Spokanes regularly participated in the Kettle Falls fishery. The Spokanes fished chinook for 2-3 months from June to August and spawned out chinooks, coho and steelhead for 1 month in October and November. Steelhead were also caught in March and April along with resident fish. According to historical documents the Spokanes also occasionally fished salmon downstream from the confluence of the Columbia and Spokane River as far as the Okanogan and Methow Rivers, at the confluence of the Snake and Palouse Rivers, in the Yakima/Priest Rapids area and, after motorized conveyances became available, at Celilo Falls.

Robert H. Ruby and John A. Brown (1970) in their book "*The Spokane Indians*" state:

"For centuries peoples of the Columbia Plateau had relied on salmon for the mainstay of their diet. So famous were the Spokane Indians as salmon eaters, and their river as a salmon stream that when meeting an Indian whose language was not familiar, and so communicated in sign language, the Spokane Indian made known his tribe and locality by one sign. The right hand was brought in front of the body with the palm of the hand parallel to the ground. He then wriggled his hand to represent the movement of the tail of a salmon in the act of spawning. The hand was then brought to the mouth and downward to the stomach to indicate the proper final disposition of the fish."

Lewis and Clark (1805), while encamped with the Nez Perce on the Snake River on their way down the Columbia, record that they were informed about the famous salmon fishing in the Spokane valley where tribes from all over the upper Columbia Basin and Snake and Clearwater Rivers gathered for several weeks in the summer and autumn to fish salmon.

The term Spokane (or Spokan in the original spelling) is derived from an

Indian word that refers to an important or great salmon fishing place (Teit 1930, Walker and Laren 1973, Masten 1979, Kennedy and Bouchard 1984). The Indian name for the upper band's fishing spot on the Little Spokane River is translated as salmon-trout or steelhead place, "a fish said to have been plentiful in that area and hence the tribal name" (Teit 1930).

Alexander Henry (1810) reported the Spokane "live upon vast quantities of fat, well flavored salmon which they take in their river. There are three principle fisheries in the river where salmon enough could be produced for any number of people who might trade with the natives in this quarter."

John Work (1830) reiterated, "The Spokane possess the lands on the river that bears their name from near its discharge to above the upper falls near the Awl Heart (Coeur d'Alene) country. Great numbers of salmon and steelhead trout ascend their river most seasons."

A number of ethnographers and historians (Teit 1928; Ray 1936; Masten 1979; Bonga 1982) report that salmon was the principal source of subsistence protein and calories in the Spokane annual diet, accounting for more than one-half their total food consumption, and that they were one of the tribes in the Columbia Basin most heavily dependent on salmon. The latter point is recognized by Hewes (1947; 1973) who assigns a higher per capita consumption to the Spokane Tribe than any of the tribes residing lower down along the mainstem Columbia or Snake Rivers.

In 1866 the United States attempted to enter into a treaty agreement with the Spokane Tribe that would have removed them to the Flathead Reservation in Montana. Special Agent G.A. Paige wrote to the superintendent of Indian Affairs in Washington, D.C. in a letter dated September 19, 1866 concerning the treaty negotiations, that the Spokanes "will not consent to abandoning their fisheries [on the Spokane and Columbia Rivers]", and that "the Spokanes draw at least five-eighths of their subsistence from the salmon fisheries of the Columbia River and its tributaries."

Twenty years later in another report to the Commissioner of Indian Affairs (1887) the following information was recorded about the Spokane: "From the sterility of their country little is done in the way of farming. They derive their subsistence in the main, from the salmon fisheries of the Columbia and Spokane, and from roots and berries."

2.1.1.1 The salmon fishery on the Spokane River.

The Spokane River was an important producer of both anadromous and resident fish because it contained an abundant food supply for fish (Gilbert and Evermann 1895, McDonald 1978).

Ray (1936) compiled an inventory of the Indian fishing sites along the Spokane River, and identified eleven prime fishing sites and other lesser fishing stations. Alex Sherwood, former chairman of the Spokane Tribal Council, in courtroom testimony in 1968 -- Mr. Sherwood was 73 at the time -- identified six primary sites that overlapped with Ray's (1936) observations. Walker and Lahren (1977) also identified several fishing sites along the Spokane. These sites are summarized by Bonga (1982). Identified were:

- (1) A site at the confluence of the Spokane and Columbia Rivers. It was reported by Ray that a successful trap had been built there by the Spokanes even though the River was over 100 feet wide. The Sanpoil Indians joined the Spokanes at this site in using pitch torches at night to attract salmon into traps (Ruby and Brown 1970; Bohm and Holstine 1983).
- (2) Blue Creek about 10 miles upstream from the mouth.
- (3) The Sandy Spit site, about 15 miles upstream from the mouth where the Spokane River forms an oxbow meander. At the downstream end of this meander there is a riffle area where a rock weir was constructed and salmon were speared. This site can still be seen when the level of Lake Roosevelt is drawn down in the spring. Walker and Lahren (1977) identified this site as *"the largest site of the Lower Spokane. It was admirably situated on a broad level bench and had a readily accessible water supply and canoe landing. The river at this point was of such a character that a highly successful salmon weir could be maintained throughout the salmon season, providing an abundant supply of salmon both for current consumption and drying for storage. Visitors were numerous from nearby points but also came in considerable numbers from such relatively distant points as the Nez Perce country. The village was most populous in summer, but numbered many scores of unhabitants throughout the winter."* The Spokanes also collected freshwater mussels from this site.
- (4) At Little Falls about 28 miles upstream from the mouth there were three different locations upstream and downstream from the falls used in different seasons where weirs made of stone or slanted willow poles were constructed. The Little Falls fishery may have been the most important on the River. It attracted over 1000 Indians and produced as many as 800 salmon daily. This fishery attracted Indians from other areas, including Coeur D'Alene, Kalispel, San Poil, Colville, Nez Perce and Palouse tribes. The Spokane appointed a Salmon Chief who presided over the fishery and allocated the catch (Ruby and Brown 1970; Bonga 1982).
- (5) At Chamokane Creek, about 32 miles upstream from the mouth. There was a fishery for salmon and steelhead below the falls in this stream about four miles above the mouth.
- (6) At Tum Tum, about 57 miles from the mouth, where the river is wide and shallow, the Spokanes erected a fish trap clear across the river.
- (7) At the confluence of the Spokane and Little Spokane Rivers about 60 miles upstream from the mouth of the Spokane River, the Spokanes erected weirs in both rivers. The Little Spokane was known for steelhead and the main river for salmon. This was a permanent fishing spot used in summer and fall for salmon and late winter and spring for steelhead. It produced as many as 1400 to 2000 salmon a day at the height of the

fishing season.

- (8) A fishing site at Deadman Creek, a tributary of the Little Spokane River about eight miles upstream. Ray located several other fish taking spots along the length of the Little Spokane.
- (9) At Deep Creek about 65 miles upstream from the mouth there was a minor fishing station.
- (10) Salmon escaping the Little Falls and other fisheries along the river eventually reached the big Spokane Falls. There a fishery was operated for about six weeks. Spokane Falls was, according to Sherwood, a "*kind of center fishing place.*" This fishery was controlled by the Spokane Tribe but shared equally with the Coeur d'Alene. Other tribes often visited this site to trade with the Spokane and Coeur d'Alene for their salmon. The fishing here was spread out from below the Bowl and Pitcher area to the Spokane Falls and included the mouth of Hangman Creek. The fishing was concentrated below the river bar. At that location the Spokane built a wall of loose rocks across one arm of the divided river. The Indians left a space in the rock extremity where they placed nets to capture the salmon (Ruby and Brown 1970, Bonga 1982).
- (11) A salmon fishing site located about 10 miles up Latah Creek from the mouth.

Additionally, Walker and Lahren (1977) identified five Spokane fishing sites on the mainstem Columbia from Hawk Creek, about 7 miles below the Spokane, to Hunters Creek, about 20 miles above the Spokane.

A large volume of historical information exists about the salmon and steelhead fisheries at Little Falls, the confluence of the Spokane and Little Spokane Rivers and Spokane Falls. Therefore, each will be discussed separately.

2.1.1.1.1 The Little Falls site.

Rev. Cushing Eells, a Protestant missionary who cofounded a mission on Chamokane Creek, a tributary of the Spokane River that presently forms the eastern boundary of the Spokane Indian Reservation, wrote a letter dated February 25, 1840, to the Missionary Herald, that stated:

"In June salmon began to go up the Spokane River, which passes within six miles of our house. At first a barrier was constructed near a falls [i.e., Little Falls], ten miles from this place. At that place salmon were taken only during high water, and then not in large quantities, as the barrier extended only a part of the way across the river. As the water fell another barrier was built further downstream, extended across the entire river; and when completed men, women and children made a general move to the place. If I judged correctly, I saw there at one time near 1000 persons, and the number was increasing rapidly. From four to eight hundred salmon were taken in a day weighing forty pounds apiece"

(Eells 1894).

Rev. Eells, and the co-founder of the mission Elkanah Walker, and their wives, Myra Eells and Mary Richardson Walker, remained at Chamokane from 1839 to 1848 (Drury 1963; 1976). The barrier referred to above was operated continuously during this time (water level permitting). Both the Eells and Walkers (husbands and wives) kept diaries for the entire period, and all four refer to this barrier frequently. During the salmon season the above figures are recorded consistently except for one year (1843) when the run failed to materialize and only a few thousand fish were taken. The missionaries and their wives frequently refer to the fact that it was impossible to make the Indians give up their fishing and root gathering. In fact the Indians refused to leave their fishing site at Little Falls and come up to the Chamokane mission for church services during the fishing season, a trait that was particularly frustrating for the missionaries as they had to trek down to the "barrier" on Saturday evenings to hold Sunday morning services at the fishery. The missionaries also indicated that the barrier was in operation at other times during the year, e.g., in February and March, for steelhead, resident trout, whitefish and suckers.

The following excerpts from Mary Walker's diary (Drury 1963) are fairly typical of the information the missionaries recorded:

- o July 12, 1842. *"Myself and children went with Mr. Eells to the fish weir. One would think they would never want for food to see them now. They seem not to waste any."*
- o July 6, 1846. *"Mr. Walker went to the barrier. Indians are taking several hundred salmon a day."*
- o July 26, 1846. *"Mr. Walker at the Barrier. The people so noisy he could not sleep on account of them."*

And from Rev. Walker's diary:

- o Sept. 14 to Sept. 16, 1844. At Spokane Falls on Sunday Sept. 15, *"We did not have worship till late as [the Indians] were much occupied with the fish."*

An extract from Rev. Walker's letter of March 20, 1845, which appeared in an issue of the Christian Mirror (Portland, Maine) dated March 12, 1846 related,

"It would doubtless be best for the natives if they could be kept under religious influence the whole year round but this cannot be done at present and when it will be done, if ever, looks doubtful to me. The truth is, it would not be best to change their mode of life at once and their food. But there is nothing to fear on this point. They manifest but little intention to change their mode of life. Especially at this station, but little is done at cultivating. No one appears the least disposed to settle down. The dependence of this people for animal food is fish and especially salmon. It is astonishing what numbers ascend the Columbia and its tributaries every year. Though some years they are more numerous than others. Of all that ascends, no one reaches the

sea again alive. The Indians take them at the rapids by means of weirs. Some times they have been known to take a thousand in a day. I have seen them at some rapids actually to fill the air in making attempts to pass up" (Drury 1976).

The earlier Hudson's Bay Company trappers (1807 to 1825) such as David Thompson and John Work report similar concentrations of Indians and catch rates at Little Falls. For example, on July 22, 1825 John Work wrote that the Spokanes were at their fishing barrier at Little Falls, "taking 700 to 800 salmon per day" (Elliot 1914).

Capt. Charles N. Wilkes U.S.N., a member of the United States Exploring Expedition to the Columbia Basin during the years 1838 to 1842 reported that, "Lieutenant Johnson, in company with Mr. Maxwell, proceeded up the Spokane River to visit the Mission at Chamokane. The river itself [lower 15 miles] is pretty; its waters are transparent. To judge from the number of sheds of drying salmon, it must abound with the fish. The average width of the stream was about 200 feet" (Wilkes 1845).

Field notes of cadastral surveyors provide accurate descriptions of historical and archaeological sites, the number of Indians occupying particular locations, and fishing practices. One report by L.P. Beach, who surveyed the Spokane River in 1862, states that at the fishery at Little Falls "The Indians put up at least 250 tons of dried fish during the fishing season." Exact dates and locations are given as this data was used to make the first topographic maps of the area.

Defo (1883), in a later survey of the boundary line of the Spokane Indian Reservation, described the river as "about 350 feet wide flowing over a rocky bed and has several rapids: It also abounds in salmon. Salmon are in their season and trout are abundant in its waters. Game is plentiful along the river."

Steelhead trout were also collected at the Little Falls fish weir in the late winter and spring. John Work in March of 1825 reported, "The Indians have for some time past got a good many trout from the Barrier" (Elliot 1914).

2.1.1.1.2 The Little Spokane site.

David Thompson, on the Skeetsho (Spokane) River on June 14, 1811, recorded, "On the evening of the 14th we arrived at Spokane House located at the confluence of Little Spokane and Spokane River. There were forty families of Spokane Indians (approximately 240 people) with Jacko Finley as clerk" (Kingston 1948; Elliot 1917). On August 12, 1811 Thompson camped on Deep Creek near its confluence with in the Spokane River. He met Spokane Indians from whom he obtained salmon (Elliot 1917).

George Simpson recorded in 1824 that "an abundance of salmon" could be obtained in the Spokane and Little Spokane River (Merk 1968). On Oct. 31, 1824, Simpson noted, "Saw a few Indians collecting the exhausted fish that float down on the surface of the water half dead, they are quite putrid and have scarcely strength to move out of the way of the fishermen" (Merk 1968).

On August 7, 1925, John Work (Elliot 1914) wrote that the Hudson's Bay Company had procured "4000 to 5000 pieces of salmon" for storage through the winter months at their Spokane House outpost on the Little Spokane River. On August 31 he wrote "seventy salmon were taken in our barrier [on the Little Spokane River] the Indians took 100 in this" (Elliot 1914). This was at the tail end of the salmon season. In the spring of 1826 Work, at Spokane House, reported "The Indians have for some time past got a good many [steelhead] trout from their barrier" (Elliot 1914).

David Douglas, the noted botanist who explored the Columbia Basin under the auspices of the Royal Horticulture Society, camped on the Little Spokane River on August 3 and 4, 1826 (Douglas 1914; Douglas 1836 reprinted in Hemenway 1904; Kingston 1948; Morwood 1973 and Meyers 1919). Douglas notes on August 3, 1826 that "the natives constructed a barrier across the Little Spokane, placing it at an oblique angle so that the current would not wash it away. After the traps filled with salmon, the Indians would spear them." Douglas wrote, "Seventeen hundred salmon were taken this day, now two o'clock; how many may still be in the snare I do not know. Fifteen hundred and sometimes two thousand salmon are taken in the course of a day." Douglas was trained to make scientific observations and kept extremely accurate notes. A perusal of his journal indicates that he kept quantified records.

Douglas travelled from Spokane to Kettle Falls and then back to Spokane via the Columbia. On August 20th 1826 he arrived on the Spokane River nine miles from the Columbia (i.e., Sandy Spit area), where there were "a large number of Indian lodges, being a fishing ground."

2.1.1.1.3 The Spokane Falls site.

Captain Charles Wilkes in 1814 stated that often nearly 1000 Indians were at Spokane Falls during the height of the fishing season and that fishing was carried on there from June through October (Koch 1976).

Lieutenant Grover, a member of Gov. Stevens Railroad Survey Team, wrote of his February 25, 1854 visit to the Spokanes:

"Just below the falls, where a bar divided the channel, the Indians had constructed wing walls of loose rocks across one arm, leaving a race between their extremities, in which, by means of nets, they caught salmon [steelhead] in passing. A long trestle work was also built on the bank upon which their captives were laid to dry."

In the Summer of 1864 Elizabeth Coonc, nee Fenn, was assisting her husband in hauling freight (mining equipment) from Walla Walla to Cabinet Landing on Pend Oreille Lake. She later wrote about this trip:

"Approaching the present site of the city of Spokane, we came down an Indian trail by Garden Springs and camped on the little stream west of Hangman Creek. There were no white people at Spokane at the time. My husband unhitched the mules and took them off a little distance from the wagons to pasture them. While he was gone an Indian came up to me with a fish [salmon] to sell; soon there were about a dozen Indians about me, all offering to sell me fish" (Coonc 1917).

There is evidence that the Spokane Falls fishery attracted large numbers of Indians as late as the 1880's to 1890, at which time they were forceably evicted. For example, on July 21, 1873 Rev. Spalding arrived at Spokane Falls. He followed the Spokane Indians "to their fishery" where he "baptised 334 souls."

Scott (1968) provides the following account of the fishery at Spokane Falls.

"In days prior to the coming of the white man to the Northwest, one of the most-traveled Indian trails was the one leading from a point near old Fort Walla Walla to the Colville Valley. This trail crossed the Spokane River near Spokane Falls. In the spring, when the salmon were running up stream, the fish were congregated by the thousands below the falls. This particular campground was a favorite rendezvous of members of many tribes that inhabited the region of the Inland Empire. The salmon could be easily speared and smoked for future use, and the native tribes took full advantage of that fact to secure an abundant supply. Even after the early settlers began to arrive, the white families were familiar with this Indian campground and often made their way there to enjoy the spring run of salmon. My father tells of paying a visit there soon after our family was located at Crescent in late 1880's. He watched the Indians spear the salmon from the rocks below the falls."

Stimson (1985) concurs,

"The whole Spokane Tribe, and often members from other tribes, would gather in June by the river the fish for salmon. Spawning salmon once swam all the way to the Spokane Falls, and catching them there with spears and nets, then cleaning and drying them for storage, was a major industry that employed hundreds, all taking orders from a Salmon Chief."

Peltier (1975) interviewed old pioneers residing in Spokane including Charles Trowbridge a long time resident who arrived in Spokane in 1889.

"Most of these people said that the salmon swam up to the main falls of the Spokane River and tried to go over them but were unsuccessful in scaling the falls. The area of Glover Stadium (around the Bowl and Pitcher) was a seething mass of struggling salmon, making it a major fishing spot. Finding that they could not jump over the falls the salmon turned south and went up Latah Creek. The area of Latah Creek close to its confluence with the Spokane River was a semi-permanent Spokane Indian campsite, because of its proximity to the fishing site. A Spokane Salmon Chief was in charge of the fishery. The Coeur d'Alene shared in this fishery."

2.1.1.2 Estimate of the minimum Indian catch of salmon on the Spokane River.

Collectively, these observations suggest that upwards of 2500 salmon a day were taken on the Little Spokane River and at Little Falls. Multiplying

this figure by a 60 day fishing season (the season actually lasted longer than 60 days) yields 150,000 salmon taken in the Indian fishery on the Spokane River system. This estimate is a minimum annual estimate since it does not include at least one other major fishery at Spokane Falls/Hangman Creek and at least eight additional sites. It also does not include the fall fishery for salmon or the late winter/early spring fishery for steelhead which were known to occur. The above estimate seems a realistic minimum when considering the observations of Livingston Stone at the Little Spokane River in 1883. Mr. Stone was conducting a fisheries survey for the U.S. Fisheries Commission. He wrote in the Annual Report of the U.S. Fisheries Commission, "*When I visited the place in July 1883, many Indians were encamped on the river bottom; but I saw no white men.*" He also reported hiring a Spokane man, L.D. Gilliam, to record the number of salmon caught. In 1882, 40,000 to 50,000 salmon were seen on drying racks on the Little Spokane River at one time. In 1883, a much poorer year, the Indian catch was estimated at about 2000 fish.

Charles Cherapkin, a Coeur d'Alene tribal member who was born in 1870, wrote a letter that was contained in a petition sent to the President of the United States on November 5, 1936. He indicated, "*When I was ten or twelve years old, the Indians fished with traps in several localities on the Spokane River from the Columbia as far as the Spokane Falls. There were five such traps. At each of these traps the Indians caught about 1000 salmon a day for a period of thirty days each year.*" This provides a similar estimate of the harvestable yield at 150,000 salmon that we calculated from other sources.

2.1.1.3 The Spokane River Indian salmon fishery: 1870-1939.

Despite the fact that they were forcefully and illegally evicted from some of their favorite fishing sites after the establishment of the Spokane Reservation, a large number of Indians continued to fish for salmon and steelhead in the Spokane until 1911 when Little Falls Dam blocked migratory fishes from the upper portions of the river. Even after this period fishing continued on the lower portion of the Spokane River until Grand Coulee Dam, constructed on the mainstem Columbia below the confluence of the Spokane, permanently blocked salmon from the upper Columbia, including the Spokane Basin, in 1939; although the Indian fishermen could be counted in the few hundreds instead of thousands. The following items expand on these points.

In the mid-1870's the Reverend H.T. Cowley moved to the Spokane area to serve the local population of Indians and non-Indians. Reverend Cowley eventually related his early life of Spokane to C.S. Kingston in a number of newspaper articles that were printed in 1916 and 1917. In one article he wrote,

"The Spokane River, with its two principal falls, furnished a large supply of salmon, the spring salmon being taken at the falls below the Lapray Bridge and the fall salmon just above the mouth of Hangman Creek and another lesser fishery on the Little Spokane. We visited the lower Spokanes at their great salmon fishery at the lower falls [i.e., Little Falls] in 1874. Spent several days at the fishery."

Mr. Cowley's daughter (Mrs. J.L. Paine) also recounted their earlier

years in the Spokane area, and commented on how the Spokane Indians relied on fish:

"Several families of Indians had combined their teepees near Pine Street and Sixth Avenue into one community lodge about 80 feet long. While father never did any hunting in the early days, we did not lack for game. The Indians would bring us venison and other game and often salmon from the River. In those days the salmon in great numbers came up the river and formed an important part of the Indian's diet. Just when they ceased coming and why I do not know" (Kingston 1919).

Mr. J.N. Glover reminisced about the Indians at Spokane Falls and Latah Creek:

"The first fall I was here, in 1873, and for several years after that, Spokane was the great rendezvous for all the Indians of this part of the country. They would come here each autumn from miles around to lay in their winters supply of dried fish. At that time salmon used to come up the river in great numbers. I have seen them so thick in the river that the rocks on the bottom would not be visible. The Indians took the fish out at a shoal near the flat at the mouth of Hangman Creek. They had traps set there and besides they would spear the fish. They would build high scaffolds of willow limbs for drying fish."

Livingston Stone (1885) wrote,

"The Spokane has always been famous as a great salmon River... Indians from all quarter assemble in the fall on this river and at the mouth of the Little Spokane to get their winters stock of salmon. On driving over to the Little Spokane (in 1883) we found a large camp of Indians there industriously engaged in putting up a salmon trap across the River. We learned from the Indians that great numbers of salmon came up to the mouth of the Little Spokane about the 1st of September... The general impression left on our minds was that a great many salmon are caught here during the entire spawning season."

Timothy J. Brooks, a Spokane Pioneer who arrived at Spokane Falls in 1882, was a teamster hauling hay for George Green at the junction of the Spokane and Little Spokane River. He said that Green attempted to settle on the point of land between the two rivers but the place was a favorite fishing spot for the Indians. *"They drove him off and he was afraid to live there"* (Oliphant 1925).

In 1883, the Rev. C. Compton Burnett and Ben Norman, proprietor of the Spokane Hotel, acquired land in the vicinity of the mouth of the Little Spokane River, on the peninsula between the Big and Little Spokane Rivers. In an interview with W.S. Lewis (1925), Mr. Norman states:

"Though the Spokane Indian Reservation had been established a short time before, the place [the Little Spokane River] was still a favorite camping ground of the Indians of different tribes. Old Indians told Mr. Norman that the place had always been a favorite

meeting place for catching and curing fish and for trade and barter by members of the different western tribes."

"The Indians evidently had used the whole of the valley, more or less at the junction of the two rivers, but the salmon drying frames and most of the teepees were on the side of the river in the vicinity of the fish traps on the Little Spokane River. The remains of one of those traps may still be traced [in 1920 when this interview was conducted]."

"The site was a great fishing place. The Indians had fish traps across both the main Spokane River and the Little Spokane River and there were fish for everyone. When I first settled there the fish were so plentiful that it was no sport to catch them. I have seen the salmon, big ones weighing many pounds, lying noses together one above another so closely were they packed in their efforts to reach the spawning grounds at the head waters of the stream. John Stevens [a Spokane Indian] was settled on part of my land but the Indian agent compelled him to move to the Indian Reservation."

Rev. P. Burnett, an Episcopalian minister and son of Rev. C. Compton Burnett, stated (in Lewis 1925),

"In the early 1880's the salmon ran thick in both the Little Spokane and Spokane Rivers. During the salmon season, although the Spokane Indian Reservation had been created and an effort was being made to force the Indians onto the reservation, the Indians still maintained fish traps across the Little Spokane River and main Spokane River. There were 25 to 35 teepees [150- 185 people] during the salmon season. Major Simms and Major O'Neal of the Colville Indian Agency made constant efforts to get the Indians to move onto the reservation and the Indian teepees and salmon traps were destroyed in an effort to force the Indians to leave the spot.

"I recall some trouble over the Indians fish traps. The Indian had a number of these traps. Some two or three were on Ben Norman's place and two or three on my fathers place. The early settlers, including the people at Spokane Falls, demanded that the Indians close their fish traps at least once a week to permit some of the fish to go upstream as their traps caught virtually every fish that came along. When the Indians refused to close their traps one day a week, a party of settlers interested in fishing, including the late J.D. Sherwood, Ben Norman, and others came to the traps and tore out two or three of them.

"Later the Indian agent tore out the remaining traps in an effort to force the Indians to quit the spot and move onto the Spokane Indian Reservation. There were so many fish in the stream during the fishing season that no one, except some of the oldtimers who actually saw the fish, would believe me if I attempted to tell you about it. The fish were actually so numerous that it was no sport whatever to catch them. The Indians caught and smoked them by the ton."

George Heron, Deputy Sheriff of Stevens County, WA, was employed as an

interpreter for the U.S. Government during the "Indian uprisings" circa 1848-1850 and is credited with playing a major role in preventing overt war. Mr. Lewis (1920) describes his character as "a man of integrity who has always been considered a valuable and estimable citizen of his community." Mr. Heron visited the fishing ground at the confluence of the Spokane and Little Spokane River on a regular basis from 1844 to 1892. In December of 1915 he related the following to W.S. Lewis (1920):

"The flat between the two rivers was a great meeting place for the Indians . . . During the summer there were from a hundred to a thousand Indians camped on the flats by the river catching and drying salmon. The principle trap was maintained in the Little Spokane a short distance above the mouth. It was made by setting up piers across the river formed of poles erected in the form of a teepee. Horizontal poles were lashed to these piers and a basket work of willows bound on them. There were two lines of these fences across the river. The upper one was tight but the lower one had frequent small gates made by lashing sticks to the upper horizontal pole and leaving them loose at the bottom, so the fish could push into the enclosure going upstream but the current could close the gate after them. The fish came into the traps in countless thousands and were speared by Indians. They were sufficient for all comers, as long as the traps were maintained in good order. The trap was torn out by the whites while Mr. Warren was agent."

After being displaced from their upriver fishing sites the Spokanes continued to fish for salmon on the reservation boundary waters at Little Falls, at the Sandy Spit and at Chamokane and Blue Creeks. A large Indian fishery existed at the Little Falls site until Little Falls Dam was built in 1911 (Ruby and Brown 1976).

On March 3, 1905 Congress passed legislation permitting citizens to use waters from the Spokane River (where it forms the southern boundary of the Spokane Reservation) for power production. There were several applications to build hydropower dams on the reservation portion of the Spokane River, including an application by H.C. Wilson in June, 1903 for constructing a dam at Little Falls. At this point W.H. Kunse recommended that a dam at Little Falls be placed as far above the falls as possible so as not to impinge on Indian allotments or "damage the large Indian fishery at the Falls." John Webster, BIA Agent, although recognizing that "many Spokanes assemble here [i.e., Little Falls] to fish," nevertheless approved Wilson's application. Ruby and Brown (1976) point out that Webster encouraged these activities because he hoped that the Spokane Indians would receive the "blessings of technology." Ruby and Brown concluded that Webster's wishes for the Spokanes were not fulfilled. "For many years the power of their ancestral stream, the Spokane River, or Little Falls, would be channelled away over whispering wires to white customers," while no power entered the reservation.

Claire Hunt (1937), a surveyor in Spokane County, surveyed Indian allotments on the Spokane Reservation from 1902-1909. He described the Indian fishery on the Spokane River at Little Falls in the summer of 1907:

"The trap consisted of the two barriers across the stream about 100 yards apart. The lower barrier had an opening near the center to

allow the salmon to enter. This opening was closed when it was desired to prevent the escape of the salmon. The upper barrier had no opening. The opening in the lower barrier was closed when the fish were to be taken out. Men went into the cold water naked except for loin coverings. With their hands they caught the fish and threw them out rapidly on the grassy bank. There, one of the older men whose duty it was, distributed them, one at a time, at the feet of laughing, and chattering women, who prepared the fish for drying."

The tone of this report suggests a large congregation of Indians fishing much as they had earlier times, and that they were catching a large number of salmon.

These accounts are in agreement with oral testimony from older Spokane tribal members. Dee Peone interviewed Mrs. Christine LeBrett on July 10, 1985. Mrs. LeBrett, born in 1898, and legally adopted by the Spokane Tribe in 1906, lived near the Little Falls Dam site from 1906 to 1940. She indicated that salmon formerly spawned in the mainstem Spokane in riffles located near the Sandy Spit about 10 miles below Little Falls and at Little Falls both above and below the dam. Her husband used to fish for salmon at Little Falls until Grand Coulee Dam permanently blocked the fish runs. In the spring of 1937 her husband caught a chinook salmon that weighed 64 lbs and was longer than a 4 ft long table. She had a photograph of the fish (a copy is on file at the UCUT Fisheries Center, Biology Department, Eastern Washington University). Mrs. LeBrett claimed that construction of Little Falls Dam (1911) had a severe impact on the salmon runs on the Spokane River. She stated, "*Fish came up after Little Falls Dam was built but not as many as before. In 1939 the fish runs stopped.*" Mrs. LeBrett also mentioned that the "*settlers across the river from the reservation, in particular the family of Mr. Ernest Tubbs [famous country-western singer] didn't like the Indians fishing at the sand bar [Sandy Spit site] and would ride horses across the riffles to scare the salmon away.*"

Alex Sherwood, former Chairman of the Spokane Tribal Council, testified in 1973:

"The fishery on the river carried on pretty good [after the mid and upper Spokane were moved onto the reservation in 1891]. The salmon came up to the river in full force up to the time...when the Washington Water Power Company built Little Falls Dam... When Little Falls Dam went in, it stopped the salmon from migrating up river when it was finished in 1911. The salmon carried on for quite a few years after that below the dam . . . until Coulee Dam went in and that was the end of it."

From Mr. Sherwood's testimony it is clear that Little Falls Dam totally eliminated steelhead, coho and kokanee. He stated that before the dam was constructed four kinds of salmon came up the Spokane River. From his descriptions of the size of the fish, timing of the runs and locations of their spawning areas these were chinook (summer), steelhead (fall, late winter, and spring), coho (fall run) and a kind of small silver salmon (presumably kokanee or whitefish). The steelhead, coho and kokanee (or whitefish) spawned principally in tributary streams upstream from Little Falls Dam such as Chamokane Creek and the Little Spokane River, consequently

these species declined rapidly following construction of Little Falls Dam which blocked them from their spawning sites. Chinook, which spawned in the main river channel both upstream and downstream from Little Falls, were reduced but continued to spawn below the Dam.

Mr. Sherwood stated that the Tribe was not consulted when Little Falls Dam was built and did not have anything to do with permitting the building of Little Falls. The tribe never received any compensation for the building of Little Falls Dam.

Soon after the Indians were evicted from the area between the Little Spokane River and Spokane Falls a sport fishery developed. A number of newspaper articles published in Spokane newspapers, circa 1900, indicate that the Spokane River was widely recognized as a sport fishery. For example, in an article in the Spokesman Review in 1903, A.C. Ware noted that Spokane drew sport fishermen from all over the United States and Europe in the early 1900's. Ware states, "*salmon can be got in the Spokane River below town. Specimens caught within an hours walk have weighed 50 pounds.*" Ware also indicated that Steelhead, resident rainbow trout reaching 10 to 15 pounds, cutthroat trout and mountain trout (i.e., mountain whitefish) were also caught in large numbers. ✓

Gilbert and Evermann (1895) in a report to the U.S. Fish Commission wrote: "*The steelhead is an abundant fish in the larger streams of the Columbia Basin, especially about Spokane. Several fine examples of this fish were taken by Mr. B.A. Bean in September 1892 near Spokane by trolling a spoon.*"

Although, salmon were at a low point in their cycle of abundance in 1893 (Gilbert and Evermann 1895; see Sections 4.1 and 4.4 for additional details) there were apparently enough to provide for an Indian subsistence fishery and a sport fishery. Gilbert and Evermann (1895) also reported that steelhead were as abundant as formerly.

Articles written in local Spokane Newspapers confirm Gilbert and Evermann's observation regarding steelhead.

- o Spokesman Review. February 17, 1894: "*Salmon [steelhead] are coming up the streams in good numbers, and the fishing in the Little Spokane is said to be excellent. The Spokane River is too high for successful fishing.*"
- o Spokesmen Review. February 15, 1896: "*Salmon [steelhead] are said to be coming up the river in great numbers. One man caught 10 at the mouth of the Little Spokane Thursday, and a small boy exhibited a couple of fine ones on the streets yesterday.*"
- o Spokesmen Review. February 10, 1898: "*Salmon [steelhead] are running freely in the Spokane River and streams which afford good spawning grounds (Feb.10, 1898), and are being taken in good quantity: season closes on March 10. Whitefish are also abundant weighing from 1/2 to 2 lbs. with the average just under 1 lb.*"

There are also indicators that the decline in salmon reported in the 1880's and 1890's might have been temporary (see Sections 4.1 and 4.4 for additional details), such as reports from the sport fishery at the Little Spokane and the Indian fishery at Little Falls. For example, the following item is taken from an article in the Spokane Chronicle in August 1895:

"F.E. Buchanan (fishing just below the Bowl and Pitcher near the City of Spokane Falls) yesterday established a record for fish catching that will be hard to break. In company with another young man he landed seven salmon, the smallest of which weighed 25 pounds and the largest at 45 pounds. He found it necessary to hire a rancher to bring their harvest of over 200 pounds to the city in a wagon."

From the Spokesman Review, September 21, 1900:

"A 50 pound and a 52 pound Chinook were taken by hook and line at the mouth of the Little Spokane River [in September, 1900]."

Also from the Spokesman Review on September 16, 1900: *"With the opening of the last half of the salmon season, Spokane anglers are proceeding to the mouth of the Little Spokane River. Heavy numbers of fish have not yet arrived but the outlook is for a successful season because the Indian fishermen fishing below (at Little Falls) report the fishing is good."*

In 1909 *"the Anderson Boys, just prior to the first dam at Little Falls, caught 11 steelhead at the confluence of Spokane and Little Spokane Rivers"* (McDonald 1978). An accompanying photograph showed the stringer of these fish. The species was identified by counting the number of anal fin rays of the fish in the photograph. The fish are 8 to 25 pounds. Another photograph shows 20 different chinook salmon caught.

2.1.1.4 The salmon fishery at Kettle Falls.

In their history of Stevens County, WA, Bohm and Holstine (1983) provide a succinct summary of the Kettle Falls site:

"Kettle Falls -- this important fishery appears to have been continuously occupied for almost 9,000 years. The oldest artifacts date to 7000 B.C. and include projectile points, chopping and puncturing tools, net sinkers and fragments of smoking pipes. During the period from 2400 to 1200 B.C. the site experienced a pronounced increase in human activity. This is reflected in a significantly greater number of artifacts such as fish [principally salmon] bones. The presence of obsidian used in tool making also appeared at that time, suggesting that the occupants of Kettle Falls traded with Native peoples in other areas of Northwest."

The following description of the Kettle Falls fishery is by Chance (1973):

"Here the salmon were taken in great numbers from mid June to mid September. Some authorities (Ray 1932; Bancroft 1883) have claimed that Kettle Falls was the second largest fishery on the Columbia,

ranking next to the Dalles/Celilo Falls. In view of the distance of the fall from the Pacific Ocean, about 630 miles, this is perhaps surprising; but I have not found anything to seriously dispute these claims."

The Kettle Falls fishery was under the control of the Colville Tribe. However, large numbers of people from other tribes including the San Poil, Lakes, Spokane, Kalispel, Kootenai, Coeur d'Alene and Nez Perce shared in the fishery. For example, Heron and Kittson (1831) reported tribes trading [furs for beads and other trade goods] at Fort Colville (Kettle Falls) during the salmon run of 1830 included San Poil, Spokane, Kalispel, Kootenai and Coeur d'Alene. Historical records indicate that from 1000 to 2400 Indians gathered at Kettle Falls each year during the fishing season. The principle communal fishing site was directed by a Colville Chief who each day also distributed an equal share of the catch to each Indian family that was present. In addition to this communal fishing site, members at individual tribes speared salmon at selected locations. Ray (1936) identified 37 locations in the vicinity of Kettle Falls where Indians fished for salmon.

That outlying tribes such as the Spokane, Kalispels, Kootenai, Coeur d'Alene and San Poil gathered at Kettle Falls for the primary purpose of participating and sharing in a subsistence fishery as opposed to trading or visiting is abundantly clear. Chance (1973) reported: *"Not a single source has been located which mentions a trading transaction. This is surprising in view of the surveillance by the Fort Colville traders for 46 years."* Kennedy (1975) stated that the Spokane Tribe had a traditional fishing camp on the east side of Kettle Falls that was recognized by other tribes.

In 1810 David Thompson named Kettle Falls, Ilth-koy-ape Falls, a contraction of two Salish words that mean basket net, on account of the unique practice of catching salmon in a basket trap as they attempted to leap the Falls (Elliot 1918). Thompson also described long sheds of about twenty to sixty feet long for drying salmon (Elliot 1918; Glover 1962). Thompson described the fishery in the following passage:

"The arrival of the salmon throughout this River is hailed with dances and many ceremonies [First Salmon Ceremony] which I was five days too late to see; and therefore cannot say what they are; but deep attention is paid by them to what they believe will keep the salmon about them. For this purpose the beach of the river is kept very clean, no part whatever of the salmon is allowed to touch the river after it is brought to shore, the scales and the bowels are all cleaned on the land a few yards from the river, for experience has taught them the delicate perceptions of the fish. Even a dog going in the edge of the water, causes the salmon dash down the current, and they do not return until the next day."

The spearing of the salmon at the Fall was committed to one Man for the public good. The third day we were here, a spearman in going to the Fall with his spear came close to the bleached skull of a dog. This polluted his spear; he returned to his shed, informed them of the accident, and to prevent the fish going away he must purify himself and his spear. I looked upon a part of the precautions of the natives as so much superstition, yet I found they were not so; one of my men, after picking the bone of a horse about 10:00 am

carelessly threw it into the river. Instantly the salmon near us dashed down the current and did not return until the afternoon.

"It is a firm belief of the natives of this river, that of the myriads of salmon that annually leave the salt water ocean and enter fresh water rivers, not one ever returns alive to the sea; they all proceed to their respective spawning places, accomplish this, and soon after (a few weeks) die of exhaustion. That such is the case of those who come to, and beyond these falls there can be no doubt, as after the spawning season the shores are covered with them, besides all that are carried away by the stream. It does not appear that they take any nourishment after they leave the sea as their stomachs are always empty. Whatever the history and the habits of the salmon may be, they form the principal support of all the natives of the river. The dogs that with impunity eat all other fish die when they eat raw salmon but when cooked the dogs eat it with safety."

This passage of Thompson's was selected because it illustrates how careful many of these early observers were in their descriptions of the Indian fishery. For example, Thompson's observations of humans, dogs, and horses in the water repelling salmon was proven in 1953 during a study to test the effects of some chemicals in blocking the upstream migration of salmon. Brett and Mackinnon (1953) measured the upstream progress of salmon migrating through a fish ladder in relation to a variety of odorous substances poured in upstream. Water that had been in contact with mammalian skin (e.g., bear paw, human hand rinse) acted as a strong repellent, causing the salmon to move back down the ladder and not reenter for a period of several hours. Biochemical studies demonstrated that the repellent effect is owing to l-serine in mammalian skin, i.e., purified l-serine elicited a typical alarm reaction (Idler et al. 1961).

In another instance, when Thompson recorded that dogs die when they eat raw salmon but not cooked salmon he was again right on the mark. He was referring to the so called "salmon poisoning disease", which is caused by the trematode (flake) parasite *Nanophyetus salmincola*. This parasite passes through several larval stages in its life cycle. The cercaria larva attaches to salmon as an intermediate host and encysts on the internal organs. Dogs and some other mammals eat raw salmon, causing the cyst to rupture, releasing adult flukes. The adult flukes carry the pathogen *Neorickettsia helminthoeca* which is highly fatal to canines. Cooking destroys the parasite (reviewed by Olsen 1974).

In 1824, George Simpson journeyed to Kettle Falls where he concluded a verbal agreement with an old Colville Chief who gave the Hudson's Bay Company enough land for a post. The chief reserved the area around Kettle Falls fishery as necessary for the survival of his people, remarking that the strangers, who appeared to him able to get their food out of stones [the Chief was referring here to planting of crops], could manage to live very well without fish (Lewis 1925, Oliphant 1925, Bohm and Holstine 1983).

John Work, visited Kettle Falls on August 6, 1826. He wrote,

"visited the falls today, where the Indians are fishing. They are now taking about 1000 salmon daily. They have a kind of basket 10

ft long, 3 wide and 4 deep of a square form suspended at a cascade in the fall where water rushes over a rock. The salmon in attempting to ascend the fall leap and fall into the basket. When the basket is full the fish are taken out. A few fish are also taken with scoop net and speared" (Elliot 1915).

"Wanderings of an Artist Among the Indians of North America" is an autobiographical journal that chronicles the travels of one of Canada's most important artists, Paul Kane, through the Columbia Basin from 1846-1848. Kane writes that at Kettle Falls,

"The salmon commence their ascent on about July 15 and continue to arrive for two months; in fact there is one continuous body of them. The chief told me he had caught as many as 1700 salmon per day, weighing on the average of 30 lbs. each. The daily average for the chief is 400 fish. For the first month only the chief fishes, then the fishery is opened up to the other members of the tribe (about 500 people). Salmon were taken with spears and dipnets. An ordinary spearsman will take easily as many as 200 in a day."

Kane noted that six miles below Kettle Falls was another fishery. In addition, dead fish *"in such vast numbers as to poison the atmosphere"* were seen. Kane also noted large numbers of salmon drying in sheds along the Spokane River. Excellent, accurate descriptions of landforms, (e.g., Palouse Falls) suggests that he was a good observer and reporter.

Kane also remarks, *"infinitely greater numbers of salmon could be readily taken here, if it were desired; but, as the chief considerably remarked to me, if he were to take all that came up, there would be none left for the Indians on the upper part of the river; so that they content themselves with supplying their own wants."* David Thompson had actually provided the earliest reference to this peculiar practice of allowing a great many fish to escape upriver at the beginning of the run (Glover 1962; Chance 1973). Archibald McDonald (1841) also complained of this "waste."

In another instance, at Kettle Falls, Elkanah Walker recorded in a letter to the Board of Missionaries dated September 12, 1839 (Drury 1976):

"It is astonishing the number of salmon which ascend the Columbia yearly and the quantity taken by the Indians. Salmon are one of the great means of subsistence. It is not uncommon for them to take a thousand in a day weighing 20 pounds each on the average. It is interesting sight to see them pass a rapid. The number was so great that there were hundreds constantly out of the water."

Father Pierre DeSmet, a Jesuit missionary, visited Kettle Falls for 13 days in July and August of 1845 in the company of Kootenai Indians. He noted that a Salmon Chief still directed the fishery and doled out an equal share of the catch to each party present. He recorded: *"Eight to nine hundred savages were assembled there for the salmon fishery [including Kettle Falls, San Poil, Spokanes, Kootenai, and Kalispel],"* DeSmet wrote,

"An enormous basket was fastened to a projecting rock. Seven or eight times a day these baskets were examined each time they were found to contain about 250 salmon. The Indians, meanwhile, were

seen on every projecting rock spearing fish."

DeSmet reported to L.H. Morgan (1881) that the share which fell to him, after being split, scarified and dried on scaffolds, loaded 30 pack mules (Morgan 1881, Chittenden and Richardson 1904, Yerbury 1975, Walker 1985)! Assuming that a pack mule could carry about 100 pounds of dried salmon, DeSmet's total take was likely in excess of 3000 pounds of dried salmon (perhaps 4500 pounds of fresh salmon). Considering he spent 13 days there this would average 231 pounds a day of dried salmon or 346 pounds of fresh salmon/day. This seems reasonable when considering that 8 baskets x 250 salmon/basket x 18.5 lbs average weight for upriver chinook salmon totals 37,000 lbs of fresh salmon caught per day. Assuming that salmon ascended Kettle Falls for about 45 or 60 days per year, between 90,000 and 120,000 salmon were caught annually at Kettle Falls, and this figure does not include those speared by individual fishermen.

Captin Charles Wilkes (1845) a member of the U.S. Exploring Expedition conducted in 1843, writes about Kettle Falls,

"the number of Indians actually resident at the falls is 150, but during the height of the fishing season there are often nearly a thousand" [including tribes belonging to the Colville Confederated Tribes, Spokanes, Kalispels, Kootenai and Coeur d'Alene]. The fishing apparatus consists of a large wicker basket, supported by long poles inserted into it and fixed in the rocks. [The basket was built with a backstop to keep the salmon from leaping over them] which the fish, in attempting to jump the falls, strike, and are thrown back into the basket. This basket, during the fishing season, is raised three times a day, and at each haul, not unfrequently, contain 300 fine fish. A division of these takes place at sunset each day, under the direction of the Chief man of the village, and to each family is allotted the number it may be entitled to: not only the resident Indians, but all who may be there fishing, or by accident, are equally included in the distribution. In September and October the salmon still claim their attention: although they are after having deposited their roes emaciated and about to perish, yet they are dried for their winter consumption."

The yield of the Kettle Falls fishery was estimated by Craig and Hacker (1940) at about 600,000 pounds. This was computed from Wilkes' (1845) information that as many as 900 salmon might be taken in 24 hours from the main basket. Craig and Hacker estimated that a sixty-day salmon season with an average of 500 fish caught per day weighing an average of twenty pounds would have given a season's yield of 600,000 pounds of fish. However, Chance

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1. The fact that the odyssey of DeSmet's mules is not mentioned in Winther's (1943) treatment of "famous pack animals of the Pacific Northwest" is clearly an oversight by the author. The sin of omission, although unforgivable, is understandable considering that the author was more interested in pyrotechnic aspects of these beasts of burden in negotiating treacherous mountain defiles, toting a hundred pounds of dynamite or nitroglycerine on their backs. The author was also enamoured with camels. Small wonder then that a pack of ordinary mules carrying "a bunch of smelly fish" received no billing in his report, (Winther, O.O. 1943. Pack Animal Transportation in the Pacific Northwest. Pacific N.W. Quarterly 34(2):131-146.)

(1973) argued that John Work (1830) estimated the average weight to be only sixteen pounds. Chance contended that Works figures are more reliable since he had charge of rationing them to his men.

Jacob Meyers (1912 cited in Chance 1973), "who had observed the scene since 1869, claimed that the main basket yielded between 1000 and 1500 fish per day. Using Meyers' lower estimate, multiplying it by 16 pounds, and extending this result to 30 days (i.e., the number of peak run days instead of the entire season) gives a yield of some 480,000 pounds of fish." This figure could realistically have been doubled because of the run at Kettle Falls was strong for the entire 60 days period according to all historical sources. Since there were other traps and also other means of taking salmon, Chance (1973) concluded that both Craig and Hacker's estimate and his own were too low.

Reports by members of Gov. Stevens Pacific Railroad survey team provide a similar picture of the Kettle Falls fishery in 1853-1854 (Suckley 1855, Stevens 1855, Gibbs 1855, Arnold 1855). For example, Isaac I. Stevens, Governor and Superintendent of Indian Affairs, Washington Territory, in a letter to the Commissioner of Indian Affairs dated Sept. 16, 1854 stated, "the fishery at Kettle Falls is one of the most important on the river, and the arrangement of the Indian in the shape of drying scaffolds and storehouses are on a corresponding scale. They take the fish by suspending immense baskets upon poles beneath the traps, into which the salmon spring."

In 1853, Dr. George Suckley declared that the Indians at Kettle Falls annually "kill hundreds of thousands of these fish (salmon) by spearing them. The Indians sow a little wheat and plant some potatoes but their principal subsistence is salmon." Suckley also reported, "the number of souls in this band [Colville/Kettle Falls Indians] is about 350. During the summer season the Indians from all the surrounding country congregate at the place to catch salmon. There are then about 1000 Indians at the Falls." Tribes present during Suckley's visit included Colville, Sanpoil, Spokanes and Kalispels.

In 1860, the United States and Canada conducted a joint survey of the international boundary. Dr. Lord, naturalist with the Boundary Commission Survey, reported seeing hundreds of the larger salmon in the air at the same time, leaping or attempting leap the Kettle Falls (Ballie-Grohman 1900).

By the 1860's the Indians apparently began to trade salmon to settlers moving into the area. Louise Pellisier (1937), born at Meyers Falls (near Kettle Falls) in 1852, wrote,

"Fish, wild game and pork were the principal items of meat foods. The Indians would pickle their salmon and pork in barrels for winter use. There were lots and lots of fish in Kettle Falls. They put large wicker baskets below the falls and raised them up three times a day always filled with fish. We would trade flour, etc. to the Indians for fish. We often got two or three big salmon from them for these articles."

2.1.1.5 Estimate of the minimum Indian catch of salmon at Kettle Falls.

The figures of the daily Indian catch at Kettle Falls in the first years after white contact and before significant development occurred in the Columbia Basin provided by different observers are remarkably consistent. These are summarized in Table 2.1.

The average catch per day at Kettle Falls for the communal fisheries was about 1000 fish. This figure does not include the numerous ancillary fisheries located nearby Kettle Falls nor the fish caught by individual spearsmen so, conceivably, it could be doubled to about 2000 fish. Most of the reports above suggest that the peak of the run lasted for approximately 60 days. Multiplied by the average daily catch the annual harvest would be 60 fish if the 1000 figure is used or 120,000 fish if the 2000 figure is used. To be conservative in providing for a minimal estimate of the catch an average of these two values, or 90,000 fish will be used. This number seems reasonable, if low considering that Suckley (1855) reported that the Kettle Falls Fishery produced "*hundreds of thousands*" of fish annually. This figure also does not include a late winter/early spring fishery for steelhead that was utilized principally by members of the Colville tribe.

2.1.1.6 The Kettle Falls fishery: 1870-1939.

Indian Agent Paige (1866) wrote in a letter to the Commissioner of Indian Affairs, "*Kettle Falls in the immediate vicinity of the old Fort Colville trading post, is one of the most productive salmon fisheries in the Territory, and is the resort of many hundred indians during the fishing season.*"

According to Sister Maria Raufler, O.P. (1966), the Catholic missionaries took advantage of the salmon fishing seasons in order to meet a majority of tribal members at their fishing centers. She describes preparations for a trip conducted in the summer of 1870 by Father Joset. Father Joset, stationed at Colville stated, in 1870 "*In less than two months the fishery [at Kettle Falls] gave them salmon more than they needed to live on the whole year, and the fishery cost them very little work. Every evening the distribution was made,*" and "*The Colville Indians are salmon eaters... In their fisheries, the Indians in five or six weeks would catch more than needed for the whole year.*"

Winans (1870) reported that the salmon chief "distributes the salmon among his own and the different tribes of Indians [including San Poil, Spokane, Kalispel, Kootenai, Coeur d'Alene and Nez Perce] that assemble at Kettle Falls for the purpose of catching their winter's supply." Winans indicated that the catch was about 1000-1200 salmon a day.

Nancy Winecoop (1937) a pioneer woman, born in 1865, whose father was an immigrant who moved to the Spokane country in about 1860 and who observed the Kettle Falls fishery stated that from about 1870 to 1880 "*At the time the salmon were running my mother would take us to Kettle Falls. She took a couple of barrels and filled them with salted salmon, then she dried large quantities. All year we had salmon to eat.*"

Table 2.1 Estimates of daily salmon catch in the Indian fishery at Kettle Falls.

<u>Observer (year)</u>	<u>Estimated daily salmon catch</u>
John Work (1830)	1000
Elkanah Walker (1839)	1000
Paul Kane (1847)	400 ¹
Father DeSmet (1845)	1750-2000 ²
Charles Wilkes (1843)	900
George Suckley (1853)	"hundreds of thousands annually"
Jacob Meyers (1912)	1000-1500 ³
Average	1010

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1. Kane reported that the chief caught as many as 1700 in a day. The 400 figure is only the communal catch and does not include the catch of individual spearsman. Each spearsman took as many as 200/day according to Kane.
 2. The 1750 figure was used for calculating the average.
 3. The 1000 figure was used for calculating the average.

Angus McDonald (cited in Howay et al. 1907) in charge of the Fort Colville trading post at Kettle Falls from 1852 to 1872, and wrote,

"Salmon as heavy as one hundred pounds have been caught in those falls. Indians gathered from all over the Upper Columbia Basin to fish here. Salmon are taken by basket and spear. The basket is a vessel made of stout hazel or birch osier hung over the lower edge of the falls by a rope. The fish that fail in their leaps are cast back and fall by scores into the ever open basket. One basket has caught a thousand salmon in a day this way. When the basket is full two men descend through the drenching cold foam into the basket and club the fish in the head and throw them on the bank. About 15 minutes of that shivering spray is all they could stand and then a new relay of fresh men take their places."

A member of the Colville Tribe (name not discernable) in an affidavit dated 8 May 1930 said that from 1864 to 1888 from an average of 1500 to 2200 Indians fished at Kettle Falls, including those from the San Poil, Spokane, Coeur d'Alene, Kalispel and Kootenai Tribes.

Gilbert and Evermann (1895) report that the salmon run at Kettle Falls began to decline in about 1878 until there were hardly any by 1882. They cite,

"George E. Meyers and Jacob A. Meyers lived at Kettle Falls for 23 years and are quite familiar with the falls and their relation to the salmon. From them we obtained the following information. Up to 1878 salmon were very abundant in this part of the Columbia; 'millions were seen ascending the falls every season.' The run would begin in June and continue until October, the biggest run in the last half of August. The run toward the end of June was also large. Salmon formerly spawned in great numbers just below Kettle Falls. The spawning beds were in gravel bottom just above a riffle. A great many spawned in the Colville River just below Meyers Falls, about three miles upstream from the mouth. Salmon still enter the Colville River and spawn on the gravel beds below Meyer Falls but they are very rare."

Unfortunately, Gilbert and Evermann do not indicate the magnitude of the decline or whether it was a temporary or permanent. In any case the Indians continued to gather in large numbers at Kettle Falls for fishing well into the 20th century.

Verne Ray (1972) who started his anthropological field research of the Colville Tribe in 1928, recalled that *"activities of tribal members of the Colville confederated tribes in connection with salmon, steelhead and sturgeon fishing apply equally so far (to 1928) into the 20th century"* (Ray 1972). A First Salmon Ceremony was still practiced. Indians from other localities such as the Spokanes and Kalispels still visited the Kettle Falls fishery. *"Only with the coming of Grand Coulee Dam in the late thirties was there a change."*

Sidney Wurzburg, a white pioneer, reported that when he was a boy (1910-1920), *"Indians from all around came to Kettle Falls during the salmon fishing season. There was Kettle Indians, Colvilles, and Spokanes and maybe*

more tribes" (Peltier 1975).

Phillip Andrew, a Colville Indian born in 1854 in an affidavit dated 31 May 1930, stated that when he was a boy (1860's), Colvilles and neighboring tribes "sometimes numbering as high as 3100" fished for salmon at Kettle Falls and that "all the adults received fish from the traps. Through my observation I say definitely that an average of three salmon from this catch were given to each adult during each day's fishing to the best of my knowledge." This observation is echoed by Peter Paul, a Colville Indian born in 1849, in an affidavit dated June 23, 1930.

James Bernard, former Chief of the Lake and Colville tribes, born on August 1, 1860 in a deposition recorded at the Colville Agency, Nespelem WA on June 25, 1930 stated of the fishery at Kettle Falls circa 1885:

"There would be over a thousand families of Indians there then. Each family got its share of fish from the baskets, besides what they caught for themselves with spear and gaff hook -- some families got as high as 15 fish a day. Each family would put up fish for years food -- 250 to 500 dried fish per family. The Indians then traded salmon to the white settlers and Hudson's Bay people for tobacco, flour and powder."

"I compute the value of the surplus salmon from our fisheries used in trade or barter at about one thousand pounds of dried fish a year per family. About two thousand pounds of dried fish were kept by each family for its own food--the average weight of a dried salmon was about ten pounds-- four pieces each weighing about 2.5 to 3 pounds. The fish varied in size, the average of the big salmon was about 50 pounds--some freshly caught fish weighed 60 to 70 pounds or more."

"Comparatively few salmon come up the Columbia River to Kettle Falls now [1930] sometimes we get five or six fish a day in the baskets for all the Indians of all the tribes--one day we got 30 fish--some days we get none. Before the whites destroyed the salmon fishing, 300 to 400 fish a day were caught in the baskets at Kettle Falls, besides the hundreds caught with spears and gaff hooks. Some Indians used to catch 20 to 30 salmon a day by themselves that way. Now a person may fish all day with a spear and never get a fish."

On October 19, 1938 a survey was made in the main Columbia River below Kettle Falls, Washington to observe spawning chinook salmon. Five separate spawning areas were discovered. Observations and counts made of fish on the spawning grounds by a Washington Department of Fisheries employee and confirmation by a second employee (Chapman 1943), estimated 800 - 1000 chinook spawning in this two miles of stream. Only a small percentage of the spawning fish could be seen clearly so these counts should be treated as minimal. Previously salmon had not been reported spawning in the main Columbia. It was assumed the main river, at least in Washington served only as a migratory channel and that spawning was carried on in the tributaries. Indians reported that spawning in the mainstem was a usual occurrence and that in former years when the salmon were more abundant they used to spear them extensively on these spawning grounds (Chapman 1943).

In an article published in the Spokesman Review August 4, 1925 entitled "Thousands see fish leap the falls," another "attraction" of interest was the spearing of salmon by the Indians. The article stated that, "Every year at this time Indians gather at the falls to spear salmon." According to the Kettle Falls Chamber of Commerce the number of visitors coming to view the salmon was "rapidly increasing each year, many of them coming from several hundred miles away." Other articles published in newspapers indicate tourism at Kettle Falls continued at high levels right up to the time Grand Coulee stopped the salmon runs.

One way to think about this is in terms of what this level of tourism meant to the local Kettle Falls economy (both Indian and white) and to the regional economy of eastern Washington, i.e., increased tourism was one way in which salmon were important to local residents besides the subsistence it provided for the Indians. An important point to consider in this context is that the reported level of tourism occurred (and was increasing every year) at the 1925 salmon run size! Since tourism provided money for subsistence it is reasonable that it be taken into account in calculating losses.

2.1.2 Estimate of anadromous fish consumption by the Spokane Tribe

Hewes (1947, 1973) estimated the average annual per capita consumption for the Columbia Plateau Tribes at 300-365 pounds and for the Spokane Tribe at 500 pounds based on caloric and protein requirements, the caloric value of salmon flesh, and the assumption that half of the annual protein and caloric requirements was provided by salmon. This figure seems reasonable in view of the information presented about (1) the extent of the salmon fishery on the Spokane River and Kettle Falls and (2) the dependence of the Spokane Tribe on salmon. Walker (1967) improved on Hewes calculation by basing the per capita consumption figures on historical observations of Indian catch. The median annual, per capita consumption of salmonids for the Columbia Plateau Tribes derived by Walker was 575 pounds. This would convert to 950 pounds for Spokane per capita consumption if the same ratio of Spokane consumption to average per capita consumption for the Plateau tribes that Hewes estimated is used. Notice that Hewes 500 pound figure and not Walker's 950 pound figure for annual pre capita consumption will be used for this calculation despite the fact that Walker's figures provide a more accurate picture of the catch since they were derived from observed records of catch. This was done intentionally to introduce an element of conservative bias in providing for a minimum estimate of the catch.

Schalk (1985) pointed out that the above figures were for the caloric value of salmon flesh in the ocean. Since salmon lose calories as they migrate upstream tribes living upriver would actually have to take more fish than tribes living downriver to obtain an equivalent amount of calories. He takes this into account by computing a "migration calorie loss factor" as the ratio of the entire length of the Columbia River to the distance from the mouth of a particular tribes territory. For the Spokane Tribe the migration calorie loss factor was 0.64. Schalk also suggested that it would be appropriate to adjust the figure using a waste loss factor (for portions of the fish not consumed) of 0.8 to obtain the gross weight. Hewes estimate of 500 pounds was adjusted by dividing by 0.64 and 0.8 to yield a per capita consumption of 976 pounds of salmon. Population estimates for the Spokane Tribe at the time of white contact were estimated by various sources and are

presented in Table 2.2. For the purpose of this calculation, the Mooney figure of 1400 will be used, again to provide a conservative estimate. More recent figures, arrived at independently by Boyd (1985) and Walker (1985) put the Spokanes population in 1780 at 3,055 and 2500 respectively.

Multiplying the population of 1400 by the adjusted per capita consumption (976 pounds) yields 1,366,400 pounds of salmon consumed annually by the Spokane Tribe. Assuming that the bulk of the fish were chinook salmon and the average weight of chinook salmon is 18.5 pounds (Beiningen 1976), the total number of salmon harvested annually was 73,800. In view of the conservative numbers used in this calculation, this represents a minimum estimate of the catch. If Walker's (1985) estimate of 2500 for the population is used, 2,440,000 pounds or 131,900 fish were harvested annually by the Spokane tribe.

Salmon, however, was not limited to being only a food item for the Spokanes. Salmon was also used as a trade item. Dried salmon was frequently taken by the Spokanes to the plains east of the Rocky Mountains where they would trade it for buffalo robes (Bonga 1982). Lt. William Abercrombie, on a trip into the Spokane district on Aug 13, 1877 reported that at the mouth of Hangman Creek, "*The [Spokane and Coeur d'Alene] Indians here carried on a brisk trade with the tribes of Montana, exchanging fish for buffalo robes*" (Gaston 1925). The calculation of 73,800 to 131,900 fish does not take this use of fish into account.

Finally, their fisheries formed a focal point in the lives of the Spokane people. A rich cultural heritage with important religious and ceremonial aspects (e.g., First Salmon Ceremony, Ruby and Brown 1970; Walker and Lahren 1977; Stimson 1985) developed around their fisheries. The social values of their society venerated older members of the tribe with the experience (education) and knowledge to become the Salmon Chiefs at their fishing sites, and their children learned to respect and honor these elder citizens. Walker and Lahren (1977) in their "*Anthropological Guide For The Coulee Dam National Recreation Area*" prepared for The National Park Service recounted the Indian myth about the origin of the salmon, and then proceed to describe the First Salmon Ceremony as practiced by the tribes residing in the Upper Columbia Basin by pointing out the correspondence between the myth and various rituals performed in the ceremony such as the methods of capturing and preparing the fish. These cultural losses could be considered "intangible" because they are difficult to quantify in comparison to subsistence losses and, therefore, are not included in this analysis. Nevertheless, it should be recognized that cultural loss was not intangible to members of the Spokane Tribe.

2.1.3 Resident fishery resources.

In addition to their anadromous fisheries, the Spokane tribe depended upon resident trout, whitefish, sturgeon, and suckers for their subsistence. A number of fur traders and the missionaries relate that weirs were constructed to trap resident fish in the winter and spring months in tributaries of the Spokane River. The Little Spokane River, Chamokane Creek and Blue Creek are identified as some of the more important sites. The Chamokane missionaries, Walker and Eells (Drury 1963, 1976) make reference to the resident trout fishery in Chamokane Creek, as does Alex Sherwood's

Table 2.2. Estimates of the population of the Spokane Tribe.

<u>Source (date)</u>	<u>Population estimate(for year)</u>	
Mooney (1928)	1400	(1780)
Teit (1930)	2500	(1780)
Stevens (1856)	1100	(1856)
Anastasio (1972)	1300	(1805)
Work (1829)	704	(1829)
Boyd (1985)	3055	(1780)
Walker (1985)	2500	(1780)

testimony. Additionally, the weirs at Little Falls were maintained throughout the winter, and were also used to catch the spring sucker run (Ruby and Brown 1970; Bonga 1982). Ross Cox overwintered at Spokane house in 1814 in the company of Spokane Indians. He reported that in February, *"immense quantities of carp [i.e., suckers] were taken in the Spokane River above its junction with [Hangman Creek], and a few weeks later the trout came in great abundance."* J.G. Cooper (1855), naturalist on Gov. I.I. Stevens Railroad Survey Expedition, in the company of Lt. R. Saxton, travelled from along the Spokane River from the mouth to Spokane in August 1854 and recorded the following comment on the resident fishery: *"Up to this point we have had an abundance of fine salmon; but the falls of the Spokane arrest their progress beyond. An abundance of trout, almost equal to the salmon compensate for their loss."*

In August 1877, Lt. Abercrombie fishing in the riffles just above Havermale Island (Spokane Falls) *"caught four or five hundred big fish -- salmon trout [unable to determine from the description if these were steelhead or a species of resident trout] Mr. Glover called them. As fast as we dropped in a hook baited with a grasshopper we would catch a big trout. In fact, the greatest part of the work was catching the grasshopper."*

Bean (1894), a member of the U.S. Fish Commission Survey conducted in 1894, confirms that;

"Whitefish were very abundant in the Spokane and Little Spokane Rivers and large numbers were observed. In the Spokane River at the city of Spokane Falls large numbers could be seen from the city bridges. They would lie close to the bottom keeping in the shade of the bridges."

Gilbert and Everman (1895) report; *"In the Little Spokane River cutthroat trout and whitefish were abundant. Large whitefish were seen at the dam at the mill Darts Mill where Indians were spearing them with fair success."* McDonald (1978) reports that large trout, weighing two to four pounds were frequently caught in the portion from Little Falls to the Bowl and Pitcher by Indians and whites. For example, McDonald states,

"The Spokane River was known world wide, as one of the finest trout rivers in the world...In the 1890's a group of four sport fishermen from Spokane fishing at the LaPray Bridge (near the present day Long Lake Dam) returned to the city with 250 fine trout."

In another instance, Mr. McDonald shows a picture of a stringer of 40 trout (1 to 1.5 lb) caught by the Anderson boys near the Little Spokane River in 1909.

2.1.3.1 Estimate of Resident Fish consumption by the Spokane Tribe.

The Spokanes depended principally on their salmon fishery for their livelihood. It formed the most important part of their summer activities and they laid in a supply that they cached for winter use. The majority of resident fishing was done in the winter months to augment their diet of dried salmon. This suggests that resident fish were relatively less important than salmon in terms of the number of fish and pounds of fish harvested. However,

the Spokanes were opportunistic in their taking of resident fish by capturing them in traps during migration periods. At certain times, e.g., during the trout, whitefish and sucker runs they had the potential for harvesting a considerable number of resident fish. This is particularly true of the sucker run which occurred from mid March to mid May at Little Falls. This run occurs at a time of year when the supply of salmon pemmican was running low and was undoubtedly fished heavily. Nelson et al. (1985) point out that shortly after Grand Coulee Dam was built cyprinids (carp) replaced catostomids (suckers).

In view of the information presented in this section, and taking into account Hewes (1947, 1973) estimate that the Spokane annually consumed 500 lbs of salmon per capita, and that the Spokanes were dependent on salmon for approximately nine months a year, it would seem feasible to calculate the number of pounds of resident fish used per capita by dividing Hewes estimate of salmon consumption by 3. This yields 167 pounds per capita. Multiplying 167 lbs/capita by the population of 1400 at the time of contact (Mooney 1928) provides a figure for total consumption of resident fish at 233,800 pounds. Assuming that the catch was comprised of 35% resident trout weighing 3 lbs, 30% whitefish weighing 2.5 lbs, and 35% suckers weighing 3 lbs, this catch converts to 27,277 resident trout, 28,056 whitefish and 27,277 suckers per year.

2.2 COEUR D'ALENE TRIBE OF IDAHO.

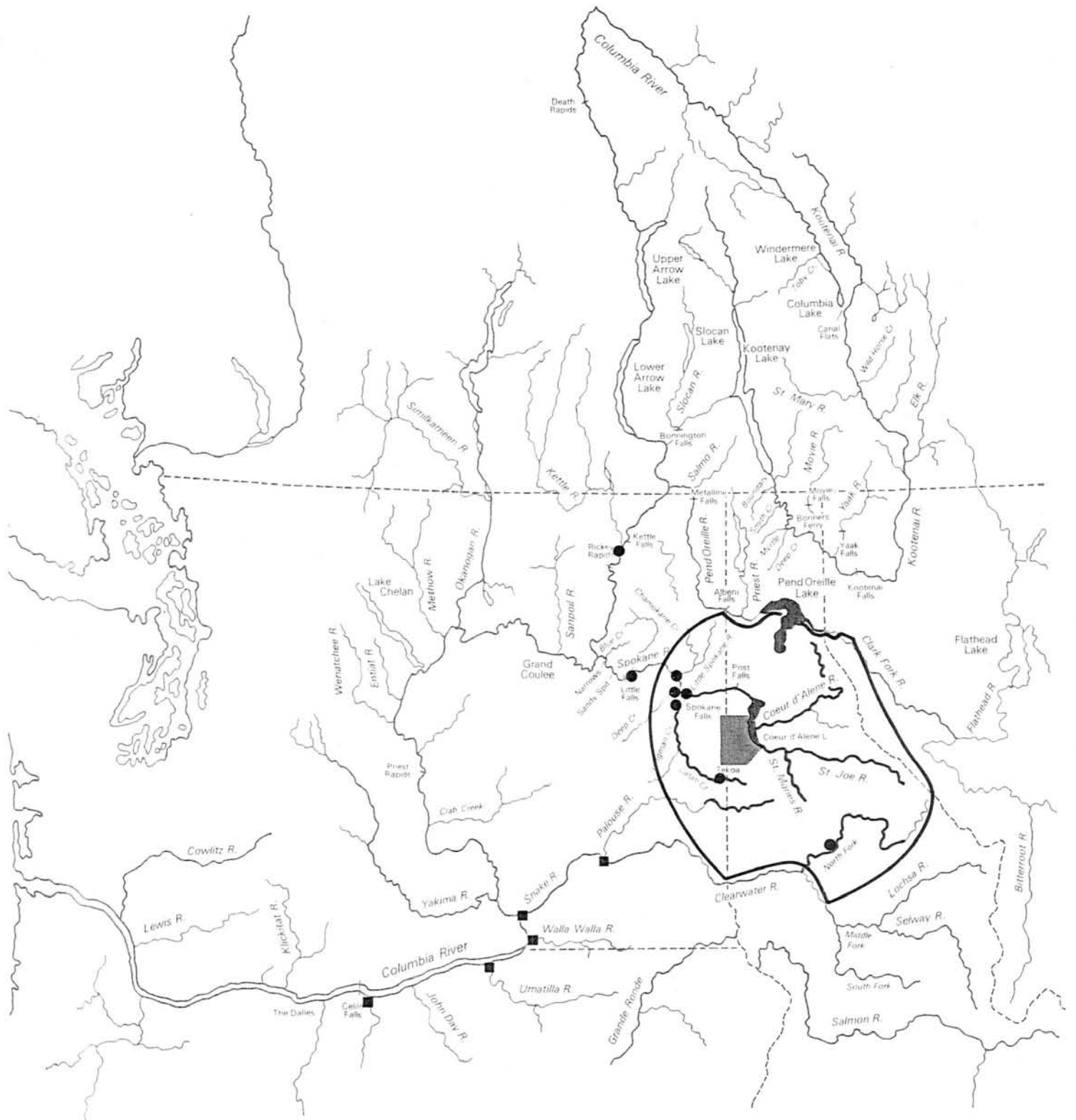
The Coeur d'Alene Tribe fishing territory extended from the North Fork of the Clearwater River on the southern margin to Lake Pend Oreille and the Clark Fork River on the north, and included Coeur d'Alene Lake and its major tributaries -- the Coeur d'Alene, St. Joe and St. Maries Rivers -- the upper portion of the Spokane River to Spokane Falls, Latah (Hangman) Creek, and the headwaters of the Palouse River (Fig. 2.2). The following sources were used to compile the Coeur d'Alene fishing territory map: DeSmet (in Chittenden and Richardson 1904); Lewis (1901); Curtis (1911); Teit (1928, 1930); Spier (1936); Ray (1936, 1939); Swindell (1942); Point (1967); Chalfant (1974); Peltier (1975); Walker (1971, 1978) and Bonga (1979).

The Coeur d'Alene tribe is generally subdivided by anthropologists into three discrete bands which were found respectively on: (1) the Spokane River and northern portion of Coeur d'Alene Lake; (2) the southern section of Coeur d'Alene Lake around the St. Joe River and on Latah Creek near Tekoa, WA; and (3) the Coeur d'Alene River. Currently, all three bands, as well as a portion of the upper Spokane band, are currently consolidated on the Coeur d'Alene Reservation located on the southern portion of Coeur d'Alene Lake, Idaho. This account outlines collectively the fishing activities of all three Coeur d'Alene bands.

2.2.1 Anadromous fish resources.

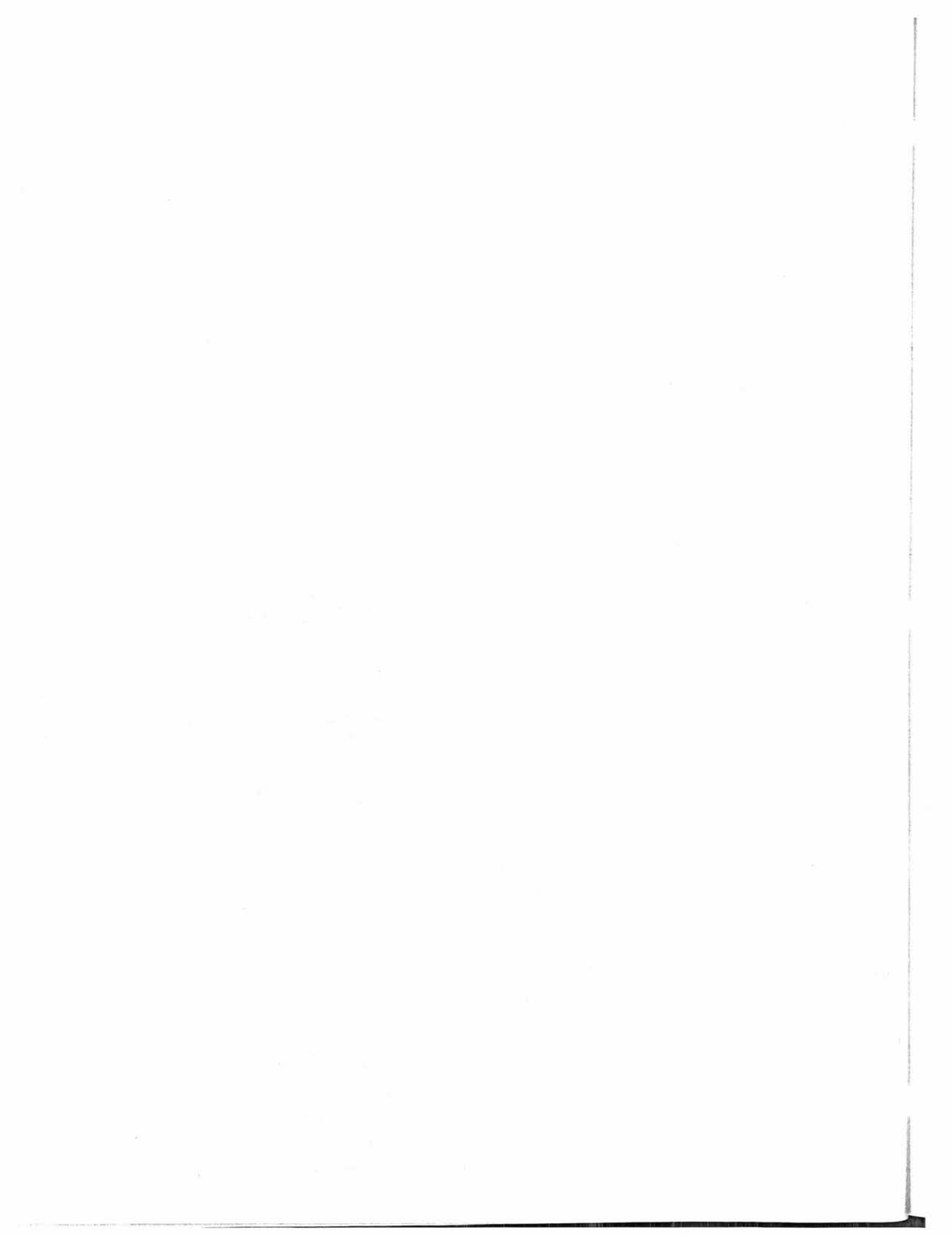
The Coeur d'Alene aboriginal territory extended at least as far west as Spokane Falls, a salmon fishery that they shared with the Spokane Tribe (see section 2.1.1.1. for details). According to Lt. John Wilkes (1845), a member of Gov. Stevens' railroad survey team, and Teit (1928), the Coeur d'Alene and Spokane tribes had a myth about how the deity Coyote had demanded a wife of

Figure 2.2 Map of Coeur d'Alene Tribe's usual and accustomed fishing territory.



COEUR D'ALENE RESERVATION: 1985

- Aboriginal Territory
- Principle Anadromous Fisheries
- Other Anadromous Fisheries
- Resident Fishery Areas



both the Spokane and Coeur d'Alene Tribes. The Spokanes complied with Coyote's request so Coyote "promised that salmon should be abundant and for this purpose raised the rapids at Little Falls" (Wilkes 1845). In contrast, the Coeur d'Alenes refused Coyotes request "whereupon he formed Spokane Falls which have ever since prevented salmon from ascending to their territory" (Wilkes 1845). However, Gilbert and Evermann (1895) describe the question of salmon formerly passing over the falls as being unsettled, even though the majority opinion was that they did not, because some local residents claimed they did pass the falls. Gilbert and Everman stated that the only thing that was certain was that the salmon could not pass the falls after the first dam was built at this site. The first dam on the Spokane River was built in 1889 at the Spokane Falls. Fulton and Laird, (unpublished manuscript, no date) state:

"Some say that chinook salmon and steelhead trout migrated over several falls in this river and eventually reach Coeur d'Alene Lake. The best known opinion is that the falls in the city of Spokane was a block to the salmon. At any rate, the dams superimposed on these falls permanently obstructed the fish at the city of Spokane as early as 1889."

Two Coeur d'Alene tribal members indicated that steelhead formerly passed Spokane Falls and were caught in February and March at Post Falls (Coeur d'Alene Tribal Fisheries Questionnaire 1984). Corroboration of this claim comes from a long-time resident pioneer who published a history of the Spokane River from the 1890's to 1970 (McDonald 1978). Mr. McDonald asserts, "It is known that the salmon were able to get over the falls at Spokane; at least up until the first dam was constructed, and to continue on to Coeur d'Alene Lake and all its tributaries." Scott (1968) reports that salmon "congregated by the thousands below Spokane Falls, awaiting an opportunity to push their way over the falls into the river above and from there into Lake Coeur d'Alene and its tributary streams." Scott furthermore states that his father watched salmon trying to leap Spokane Falls and that, "Some [salmon] got through the seething torrent, others were destined for disappointment."

This viewpoint is consistent with Gov. Isaac Stevens comment of October 17, 1853, at a rapid approximately one mile below the falls of the Coeur d'Alene River, i.e., upstream from Coeur d'Alene Lake near the Cataldo Mission. Stevens wrote, "There is a small [Coeur d'Alene] Indian village here, and the Indians were engaged in catching salmon." It is possible that Stevens could have witnessed a land-locked kokanee salmon fishery as opposed to an anadromous fishery at this site. However, according to Idaho Department of Fish and Game Records at Coeur d'Alene and Boise, kokanee are not native to the Coeur d'Alene system and were not introduced in Lake Coeur d'Alene until well into the 20th century. Peltier (1975) also reports that the Coeur d'Alene tribe fished for salmon trout [steelhead] that ran heavily in the Spokane River close to where it flowed from Coeur d'Alene Lake.

Collectively, these observations suggest that at least a few salmon and steelhead made it past Spokane Falls prior to the time the Monroe Street Dam was built in 1889. We have examined Spokane Falls, which fall in a stepwise fashion with large pools between steps and is, in fact, really more like a series of cascades. We believe that, although difficult, passage over these falls would be possible for salmon. The maximum height a salmon would have to leap would be approximately twelve to fifteen feet, which is well within

their range. Since the water falls through a cascade, there must also necessarily be a horizontal component to the leap on the order of 15 to 20 feet. This may be the most difficult aspect of the process, especially during the summer months (low flow period) when little water is flowing over the bare rock. We suspect that during the late winter and spring, when a considerable volume of water flows through the channel and flattens out the vertical aspect, some steelhead may be able to obtain enough purchase to pass the falls. During high water years a few percent of the chinook salmon might also be able to pass.

Salmon also formerly ran up Hangman Creek, a tributary of the Spokane River as far as Tekoa, Washington near the border of present day Coeur d'Alene reservation. The Coeur d'Alene fished for salmon on this stream. Additionally, historical and anthropological sources place the Coeur d'Alene as occasionally fishing for salmon at Kettle Falls, on the Clearwater River, at the confluence of the Palouse and Snake Rivers, and, between 1900 and 1957, at Celilo Falls. For example, Walker (1978) states, "*Because streams in their territory contained few [salmon], the Coeur d'Alene travelled south to the North Fork of the Clearwater River and West to Spokane Falls and Kettle Falls where they fished with the Nez Perce, Colville, Spokane and other tribes... In the Spring fishing began with some groups of Coeur d'Alenes traveling to neighboring tribal area to the south and west to intercept the early salmon runs.*" Salmon were an important resource to the Coeur d'Alene tribe. Alexander Kennedy (1823) specified that for the Coeur d'Alene Tribe, "*salmon form the principal part of [their] food.*"

2.2.1.1 Salmon Fishing on the Spokane River drainage.

Lewis (1906), Curtis (1911), Teit (1928), Ray (1936), Bonga (1974) and Peltier (1975) all state that the Coeur d'Alene fished at the Spokane Falls and mouth of Latah (Hangman) Creek in common with the Spokanes. For example, Peltier (1975) states, "*The Coeur d'Alene ate salmon that were caught below the main falls of the Spokane River, a fishery they shared with the Spokane Tribe.*" (See Section 2.1.1 for details of this fishery).

Charles Cherapkin, a Coeur d'Alene tribal member who was born in 1870, wrote in a letter to President Roosevelt on November 5, 1936, that in 1880-1882 Indians (Spokane and Coeur d'Alenes) fished five weirs on the Spokane River from the Columbia as far as the Spokane Falls. At each trap the Indians caught about 1000 salmon a day for a period of 30 days each year for a total harvest of 150,000 salmon.

The Coeur d'Alene also fished the upper reaches of Latah Creek, an area used almost exclusively by them (Peltier 1975). Teit (1928) described the Coeur d'Alene as having a large fish trap near Tekoa, WA. Henry Si John, a Tribal historian, reported that there were salmon drying racks at DeSmet, Idaho. The productivity of the upper reaches of Hangman Creek for salmonids is questionable. The Indian name for this stream translates as "muddy water" (Teit 1928), and a survey conducted by the U.S. Fisheries Commission in 1893 (i.e., before any significant logging or farming occurred in the area -- Dozier 1962, Meining 1968)² described the stream as "*muddy, not suitable*

2. Dozier (1962) points out that the Latah/Hangman Creek area was not settled heavily until after 1885 to 1890 because the settlers were waiting for enactment of the Coeur d'Alene Treaty before planning for development of the area.

for salmon and trout and containing suckers and minnows." However, Laumeyer and Maugham (1973) conducted an electro-fishing survey in this section of Latah Creek. Even though the water was muddy they did report catching some trout.

It seems unlikely that this stream was ever an important producer of salmon, and that the salmon reported to enter this stream were simply overflow from an overcrowded Spokane River. It also appears likely that at least some salmon migrated to and were caught in the headwaters of Latah Creek and that there was at least limited production in this stream as evidenced by the following accounts.

Joseph Seltice (unpublished manuscript) writes "salmon poured into Hangman Creek near Tekoa, WA (where Chief Andrew Seltice settled)" and "were caught coming into the stream." This would be in the 1880's and 1890's.

Herman Seltice, a relative of the Coeur d'Alene Chief Andrew Seltice was interviewed by Lavinia Felsman on July 20, 1983 as part of the Coeur d'Alene tribal Old-timer Historical Testimony Program. A tape recorded interview and transcription (Felsman 1983) is available. The account provided below paraphrases his testimony in order to condense it.

"I have always heard that salmon was the Coeur d'Alene main food.

"My grandmother told me that in the 1870's they went down to Hangman Creek (in Idaho) and caught salmon [by spearing] and that was the most important meal in those days. Salmon were not the only fish that came up the creek, we also had whitefish and trout. The reason we don't have the fish now is because dams were built that destroyed our fishing grounds."

"Joe Vincent also told me quite a bit about those days. He said that the Coeur d'Alene wouldn't catch all the salmon that came up Hangman Creek to spawn. They would only catch half the fish and let the other half go up and spawn, so the next year there would be fish to catch. If we caught them all, then we wouldn't have anymore."

Felsman (1983) interviewed Donald George who stated, "salmon were reported at Hangman Creek near Tekoa, WA in 1907, shortly after the reservation was open to settlement."

Felsman (1983) also interviewed Margaret Stensgar, granddaughter of Joseph Seltice, on July 13, 1983. "Grandpa Joseph told me that salmon used to come up Hangman Creek to spawn until they built that dam [Little Falls?], then they didn't get any more salmon up here. He used to set a net and when he got back we would have a salmon dinner. Cutting all the trees down also affected the creek."

Thirty-two Coeur d'Alene tribal members responded to a fisheries questionnaire survey conducted in 1984. They identified locations that they could remember catching salmon or where they were certain that their ancestors fished for salmon and steelhead. These locations included Hangman Creek (eleven people), Spokane River below Spokane Falls (six people), Spokane River near Post Falls dam (two people commented on catching spring

steelhead at this location), Kettle Falls (four people), Clearwater River (two people), and Celilo Falls (four people).

2.2.1.2 Salmon fishing in the Clearwater River drainage

Joseph Seltice (unpublished manuscript), recounted that in the early 1800's Twisted Earth, a Coeur d'Alene tribal member would fish *"the Little North Fork of the Clearwater River for a salmon supply...the salmon at the head of this stream could be hooked out of the river about as fast as you could land them on the bank."*

Peltier (1975) interviewed Niel Yager on May 25, 1971 who stated, *"The Coeur d'Alenes used to go fishing at 49 Meadows for bull trout and salmon. There was good salmon on the North Fork of the Clearwater River. This must have been on Nez Perce land because the Coeur d'Alenes had to fish there on the sly. Spotted Louie Seltice's favorite salmon fish place was on Spotted Louie Creek."*

Teit (1928), Chalfant (1974), Walker (1971, 1977) and Bonga (1979) also report that the Coeur d'Alene fished salmon on the Clearwater drainage. Teit (1928) listed the North Fork of the Clearwater and four other Clearwater tributaries.

2.2.1.3 Salmon fishing at Kettle Falls

A number of the fur trappers and priests, (e.g., Father DeSmet) as well as ethnographers report that the Coeur d'Alene routinely visited Kettle Falls during the fishing season. (See section 2.1.1.4 and 2.1.1.6 for details). Trading transactions, recorded in Hudson's Bay Company Records from the Fort Colville Post located at Kettle Falls, indicate that the Coeur d'Alene visited Kettle Falls annually between 1831 and 1864. Rev. Samuel Parker (1842) also mentioned that a mission established at Kettle Falls would have access to the Coeur d'Alene Indians.

2.2.1.4 Salmon fishing on the Lower Columbia

The Coeur d'Alene occasionally fished for salmon on the Snake and Lower Columbia at sites such as Celilo Falls. (Ray 1939; Swindell 1942; Chalfant 1951). This practice started after the Coeur d'Alene obtained horses (about 1780) and continued until Celilo Falls was inundated by The Dalles Dam in 1957. The Celilo Falls site became especially important to the Coeur d'Alene after the Spokane River dams and Grand Coulee Dam blocked the runs into the upper basin, because it was one of few places they were able to obtain salmon for religious rituals (Richard Mullen, pers. comm.). Richard Mullen's family still retains a necklace made from vertebrae of salmon that were caught the year before Celilo Falls was inundated by the Dalles Dam. The necklace continues to be used for religious purposes.

2.2.2 Estimate of anadromous fish consumption by the Coeur d'Alene Tribe

Teit (1930) and Chalfant (1974) claim that fishing was the most

important aspect of the Coeur d'Alene Tribe's subsistence economy. This observation, taken together with the information provided in the preceeding section on the extent of Coeur d'Alene salmon fishing activities, suggests that Hewes's (1973) annual per capita estimate of 100 lbs for the Coeur d'Alene is too low, and that this figure should be increased to 300 - 365 lbs per capita, the typical average for the Plateau Tribes. Factoring in a migration calorie loss adjustment factor of 0.57 and a waste loss adjustment factor of 0.8 (Schalk 1985; see section 2.1.2) yields 658 lbs (i.e., $300 \text{ lbs} \div 0.57 \div 0.8 = 658 \text{ lbs.}$) Walker (1967) pointed out the median consumption of the Plateau Indians is actually closer to 585 lbs, so using Hewes figure provides a minimum estimate of the catch. Multiplying Hewes's adjusted figure by the estimated Coeur d'Alene population of 700 at around the time of white contact (Parker 1840) yields 460,600 lbs. At an average weight of 18.5 lbs/fish this totals 24,897 salmon. Prior to contact (1780), the Coeur d'Alene Tribe numbered between 1950 to 2000 (Boyd 1985; Walker 1985), and possibly as many as 3000 to 4000 individuals (Teit 1928). Total consumption for Walker's population (of 2000) would be 1,315,000 pounds or 71,100 fish. At Teit's estimated population of 3500 total consumption would be 2,300,000 pounds or 124,500 fish.

Besides being a main staple in the Coeur d'Alene diet, salmon were an important item of trade. With the introduction of the horse, the Coeur d'Alenes were able to cross the Rockies annually to hunt buffalo on the plains. Two trade goods greatly desired by the plains tribes were salmon oil put up in sealed salmon skins and salmon pemmican. Because they were unobtainable on the plains, the salmon products were valuable and, therefore, almost always taken by the Coeur d'Alenes (Teit 1930; Bonga 1979). The above calculation provides a minimum estimate of subsistence and did not include fish taken for trade. Additional losses that would be difficult to replace were also perpetrated upon the Coeur d'Alene tribe. These include use of salmon for cultural, ceremonial and religious purposes. Walker (1980) outlined some Coeur d'Alene myths in which salmon fishing and hydrological features figure prominently.

2.2.3 Resident Fish Resources

The Coeur d'Alene also had important resident fisheries for a variety of species including silver trout, cutthroat trout, rainbow trout, bull trout (Dolly Varden), whitefish and suckers (Chittenden and Richardson 1904; Teit 1928; Point 1967; Chalfant 1974 and Peltier 1975). The Coeur d'Alene fished for resident fish in Lake Coeur d'Alene, the Coeur d'Alene, St. Joe and St. Maries Rivers, and also in Lake Pend Oreille and Clark Fork Rivers, the Spokane River between Spokane Falls and Post Falls, on Latah Creek near Tekoa, WA and Tensed, ID, the upper reaches of the Palouse River and a variety of other locations (Teit 1928; Chalfant 1974; Peltier 1975; Walker 1977). Lake Coeur d'Alene was an especially important site where cutthroat trout, whitefish and Dolly Varden trout were taken by fishing from canoes (Walker 1977). A winter ice fishery for whitefish and cutthroat trout was also established on the Lake (Peltier 1975). Cutthroat trout were collected in traps on tributaries of the lake during their spring spawning.

In 1843 Father DeSmet noted that the Coeur d'Alene "*fished for resident fish at all times of the year*" and that "*their rivers swarmed with various kinds of fish, principally [trout]*" (Chittenden and Richardson 1904). In

1842 Father Point made similar observations (Point 1967). According to Peltier (1975) "*salmon-trout ran heavily in the Spokane River near Coeur d'Alene Lake. Along this stretch of the river there were several permanent or semipermanent Coeur d'Alene camps.*" The "*salmon-trout*" referred to here could not be identified as to species. The most common usages of the term were to describe steelhead trout or bull trout (i.e., Dolly Varden). Mr. Peltier does state that the Coeur d'Alene captured Dolly Varden in addition to salmon trout, so presumably he is not referring to Dolly Varden. He also states that "*salmon trout often weigh six pounds and occasionally one reached eight pounds.*" Additionally, Mr. Peltier reports that "*Dolly Varden were frequently caught in winter and early spring in Coeur d'Alene Lake by fishing from canoes. They often reached a weight of 20 to 30 pounds.*"

The Coeur d'Alene also used traps at numerous locations for catching resident fish. The most famous of these was located off the St. Joe River. Between 1842 and 1846 the Jesuit priests stationed at Sacred Heart Mission and Coeur d'Alene tribal members built the fish traps at Mission Point where there was a narrow neck of swamp land which was covered by water during flood time. As the flood water dropped, fish would come through the narrow channel in large numbers to spawn. The Coeur d'Alenes would then walk along a dike with spears and nets and catch large quantities of white fish and trout in this impoundment. "*They caught thousands of trout and whitefish and dried them for later consumption*" (Scott 1968). The trap was operated for over 50 years, supplying fish for the Indians and priests alike, until it was inundated by the building of Post Falls Dam.

It was not until the 1880's that the cultural interaction between the Coeur d'Alenes and white settlers intensified. Even so the Coeur d'Alene continued to rely heavily on their fisheries for subsistence (Bonga 1979). Stuart A. Chalfant, an ethnohistorian employed by the Department of Justice as a tribal adversary in the Indians Claims Commission, conducted interviews with Coeur d'Alene tribal informants in 1950-51. The interviews oftentimes recalled events which were firsthand accounts from the period of initial white settlement in the area. From Chalfant's accounts, one can conclude that the resident fish remained an integral part of the Coeur d'Alene economy well into the twentieth century.

2.2.3.1 Estimate of Coeur d'Alene Tribe consumption of resident fish.

From the foregoing discussion it is clear that fish constituted the bulk of the Coeur d'Alene subsistence protein and calories and that anadromous salmonids and resident fish contributed to their diet in approximately equal proportions. Hewes' estimate of 300 lbs for per capita salmon consumption would thus suggest that the resident fish catch would also be in the neighborhood of 300 lbs per capita. Walker (1985) has recently estimated Coeur d'Alene consumption of resident fish at 250 pounds per year. Multiplying this figure by a contact population of 700 yields 210,000 lbs of resident fish consumed annually by the Coeur d'Alene. Assuming that 10% of the catch was Dolly Varden [i.e., Bull trout] weighing 20 lb, 40% of the catch was cutthroat trout weighing 2 lb, 35% of the catch was whitefish weighing 2.5 lb and 15% rough fish such as suckers weighing 3 lb, this figure converts to 1050 Dolly Varden, 42,000 cutthroat trout, 29,400 whitefish and 10,500 suckers taken per year. These figures should be multiplied by a

factor of approximately three or four to estimate the aboriginal consumption.

2.3 KALISPEL TRIBE OF WASHINGTON.

The Kalispel territory extended along the Pend Oreille/Clark Fork Rivers from Canada into Montana. The present reservation is in the vicinity of Usk and Cusick, WA. The map of their fishing territory (Fig. 2.3) was prepared from accounts of fur trappers, missionaries, and the following historical and ethnographic sources: Curtis 1911; Lewis 1906; Ray 1936; Walker 1971, 1977; Bonga 1978; Smith 1983, 1985; and Fahey 1983. All of these sources indicate that fishing was the major subsistence pursuit for the Kalispel Tribe.

The Kalispels are one of the branches of the Pend Oreille Tribe which formerly consisted of: (1) The Upper Pend Oreille (currently part of the Flathead tribe) occupying the region in the vicinity of Flathead Lake and portions of the Clark Fork River in Montana; and (2) the Lower Pend Oreille or Kalispel who occupied the lower Clark Fork River in Montana, Pend Oreille Lake in Idaho, and the Pend Oreille River in Washington. The Kalispel are subdivided into the (1) Upper Kalispel in Idaho, occupying the Lake Pend Oreille/Priest Lake country; (2) the Lower Kalispel occupying the Pend Oreille River from Albeni Falls (near Newport, WA) to the mouth, with principal settlements in the vicinity of Cusick and Usk, WA.; and (3) the Chewelah Kalispel, a small band that occupied the Upper Colville Valley (Winans 1870; Teit 1930; Curtis 1930; Spier 1936; Mooney 1930; Walker 1971, 1977; Swanton 1979; Smith 1983; Fehay 1983). This report concentrates on the Kalispel, who are currently located on the Kalispel Indian Reservation at Usk, Washington.

Dr. Alan Smith, Professor Emeritus of Anthropology at Washington State University (WSU) did field work with the Kalispels in the 1930's. During his stay with the Kalispels Dr. Smith collected 1700 pages of typed field notes which were the basis for a report on Kalispel fishing prepared by Dave Bonga, an adjunct faculty member in the Anthropology Department at WSU. This work also was the basis for sworn testimony that Dr. Smith made in 1983 and 1985 in connection with a lawsuit the Kalispel filed against Pend Oreille County P.U.D. for flooding lands on their reservation bordering the Pend Oreille River. In describing the Kalispel subsistence Smith (1985) stated, "*Fish was their most important staple year-round.*"

Additional support for the position that the Kalispels subsisted on fishing in the Pend Oreille River Valley can be found in reports of the Commissioner of Indian Affairs. The report for 1853/1854 stated:

"The Kalispel Indians (1200 people) live on fish, game and roots. In summer the Indians live principally on fish, which they catch not only by weirs and fish-traps, but by the hook and line and by spearing."

In 1875 the Commissioner once again reported that the Kalispels still depended principally upon fishing for food:

"In Washington Territory the Kalispels number three hundred and ninety-five, and are still in their original homes on the Pend Oreille River and around Lake Kalispel, where they cultivate some potatoes and wheat on about one hundred acres of land, but they are

Figure 2.3 Map of Kalispel Tribe's usual and accustomed fishing territory.

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now obliged to depend mainly on fishing."

An 1886 report stated:

"The Kalispel are still living in the Kalispel Valley, and still refuse to permit whites to settle there...they live principally by hunting and fishing, none of them having farms to any extent."

2.3.1 Anadromous fish resources.

The principal species that entered the Pend Oreille River was the chinook salmon (Gilbert and Evermann 1895; Bryant and Parkhurst 1950; Fulton 1968; and Fulton and Laird, unpublished report). Runs of salmon in the lower 32 km above the mouth were heavy in some years but declined after 1878 (Fulton 1968). Additionally, Fulton (1970) stated, *"steelhead trout reportedly spawned in the main Columbia as far up-stream as the Canadian border and in tributaries of the Upper Columbia River; the uppermost stream was the Pend Oreille River."* Gilbert and Evermann (1895) reported that *"steelhead were abundant in the Pend Oreille River in 1894."* Salmon and steelhead continued to be present in this lower segment of the River until Grand Coulee Dam was built (Bryant and Parkhurst 1950).

The Pend Oreille River joins the Columbia where the Columbia crosses the border into Canada. The first 20 miles of the stream are in Canada before it turns south into Washington. A cascade at Big Eddy Canyon just downstream from Box Canyon and Metaline Falls near the international boundary makes passage difficult for salmon continuing up the Pend Oreille. Allan Smith recorded the following Kalispel legend about this place;

"When Coyote brought salmon up the Columbia River, he stopped them at the mouth of the Clark Fork (Pend Oreille) while he proceeded alone up the tributary. He created Albeni Falls as a spearing place for salmon. Then he came back down the river to the location of the present village (near Usk) and requested a wife from the Kalispel. He was refused, however. So he replied, 'All right. You'll have to go a long way for your salmon.' He then continued on down the river and made the falls near its mouth to prevent the salmon from ascending the stream."

John Work (1830) indicated that *"the falls in the lower The Clark Fork River prevent salmon from ascending,"* but does not specify Metaline Falls or Albeni Falls. Suckley and Cooper (1860) and Waterbury (1883) reported that this obstruction (Big Eddy Cascade) prevented salmon from ascending the Pend Oreille River, but neither actually visited the site.

A report by McDonald (1894) to the U.S. Senate contains a map showing *"the natural limits of the distribution of salmon in the Columbia Basin"* which showed salmon as being present throughout the Pend Oreille System. McDonald's map is based upon information obtained by Livingston Stone (1885) who was sent by the U.S. Fish Commission to survey the Clark Fork/Pend Oreille Rivers for the purpose of selecting a hatchery site at a point along the Northern Pacific Railway Line. Stone relates,

"Very few salmon reach Lake Pend Oreille or the Clark Fork above the Lake. The testimony of all persons consulted on the subject at Deer Lodge, Missoula, Sandpoint and at various smaller stations on the railroad was unanimous to the effect that no salmon were ever caught in Clark Fork or above. The cause of the absence of salmon on Lake Pend Oreille or above is the falls of Senniawateen (i.e., Albeni Falls) 15 miles below the outlet of the Lake."

That a few salmon apparently made it past Big Eddy Canyon is made plain by Livingston Stone, in an article published in Transactions of the American Fisheries Society in 1884. He wrote, "*I heard of salmon being caught all the way up to the falls of the Senniawateen (i.e., Albeni Falls)--so the salmon are obviously not all stopped at the falls of the Pend Oreille [i.e. Big Eddy Cascades or Metaline Falls], though probably not a very large proportion get by them. The falls of the Senniawateen . . . mark the highest point of the upward migration of salmon on Clarks Fork.*"

Gilbert and Everman (1895) were the only investigators to explore the entire length of the Pend Oreille River. They described Albeni Falls, Box Canyon and Metaline Falls as the most serious obstacles to salmon. They further state that salmon could probably ascend Metaline Falls without much difficulty. Big Eddy Canyon, i.e., the cascade below Metaline Falls, was described as being three miles long and narrow. They did "*not consider Big Eddy Canyon a serious obstacle to fish.*"

Fulton and Laird (unpublished manuscript, no date) wrote,

"Conflicting information appears in the literature on how far salmon migrated up this stream. In fact, Gilbert and Evermann (1895) stated that salmon never reach Lake Pend Oreille but were thought to have been kept back by the Falls [Big Eddy Canyon/Metaline Falls] near the mouth. This does not agree with other statements in their report. On page 181, Gilbert and Evermann (1895) note that, although Metaline Falls was the most difficult of any of the Pend Oreille River, the authors state that it was known to be passable without much difficulty, and in fact would not interfere with ascent of salmon in the least. From the foregoing it appears that there are no serious obstruction which would prevent salmon from [ascending further up] the Pend Oreille River."

Bennett and Falter (1985) also state: "*Historically, the Pend Oreille River supported anadromous fishes to Albeni Falls.*" From this evidence it appears that at least some salmon and steelhead were able to ascend the Pend Oreille River to Albeni Falls. In the winter of 1843 Father DeSmet found Kalispel Indians encamped at a permanent fishing village near Albeni Falls (Chittenden and Richardson 1904). In view of the information presented above it seems reasonable to assume that they fished for steelhead at this site.

In September 1809 (Elliot 1932), David Thompson canoed down the Pend Oreille River in the vicinity of Usk, WA. Members of the Kalispel Tribe he encountered at this spot traded 50 lbs of dried salmon to him. On several other occasions the Kalispels gave Thompson presents of dried salmon or traded dried salmon to him. Likewise on numerous occasions

when he visited the Kootenai in Bonners Ferry, he was provided with salmon (Elliot 1920; White 1950). It is clear from his descriptions of different species of fish that Thompson was able to distinguish anadromous salmonids from resident salmonids. On occasions when he was presented with resident fish he stated so. It seems reasonable to speculate that Indians giving or trading away salmon were likely procuring it themselves rather than trading for it as has been suggested by Teit (1930), i.e., Teit indicated that the Kalispels obtained the bulk of their salmon by trading for it. Historical evidence presented in the following sections demonstrates that the Kalispels actively fished for salmon.

2.3.1.1 Salmon Fishing in the Lower Pend Oreille River.

The Kalispel tribe residing in the region around Usk, WA made annual fishing trips below Big Eddy Canyon cascade for the specific purpose of catching salmon. This location was a part of their traditional territory. Teit (1930) states,

"In salmon season, some Kalispel went down the river to near the Box [BIG Eddy] Canyon, then across country to the head of the Salmo River in British Columbia, which was the northeast corner of their tribal territory, and there fished salmon."

Walker (1977) reported that *"the Kalispels often travelled into neighboring British Columbia to fish [for salmon]. They also fished and traded with the Spokane and other Interior Salish Tribes to the West at Kettle Falls and Spokane Falls"*. Smith (1983) records that the Kalispel caught fish in a trough-shaped basket at the Falls on the Pend Oreille River just above the mouth of the Salmo River. He stated in a sworn deposition in 1983 *"The trip was made twice a year. All of the able bodied men, numbering 200 to 300 would make both trips."* The amount of salmon taken was the equivalent to what these fishermen ate plus what they could carry back to their canoes above the Cascade (approximately 75 lbs dried salmon). Given a multiplication factor of 1.5 to convert dry salmon to fresh salmon, the total catch was approximately 56,250 lbs of fresh salmon per year (i.e., the product of 250 men (average) x 75 lbs dried salmon x 1.5 conversion factor x 2 trips/year.) Additionally, the average fishermen might consume 3 lbs of fresh salmon per day for the seven to fourteen day duration of the trip for a total of 15,000 lbs. (i.e., the product of 3 lbs salmon x 250 individuals x 10 days average trip duration x 2 trips/year). The total annual consumption of salmon by the Kalispel Tribe would be a minimum of 71,250 lbs (3,851 fish at 18.5 lb fish) of salmon from their territory on the Lower Pend Oreille River plus whatever salmon they could catch in other portions of their territory, for example, at Albeni Falls.

In addition to salmon in their territory, the Kalispel joined other tribes at Kettle Falls and on the Spokane and Little Spokane Rivers.

2.3.1.2 Salmon fishing at Kettle Falls.

The Kalispel fished salmon at Kettle Falls on a regular basis (Ray 1936; Teit 1930; Walker 1977; Bonga 1978; Fahey 1983. See also section 2.1.1.4 and 2.1.1.6). The following is excerpted from the testimony of John Fahey,

Professor of History and Radio-TV at Eastern Washington University.

"The main site of the Kalispel tribe was at their present reservation but they crossed to Kettle Falls on the Columbia to fish salmon. In 1854, Lugenbeel, officer in charge of Fort Colville, mentioned the Kalispels as the most numerous Indians visting his post" (Fahey 1983).

In 1842 Rev. Samuel Parker noted that Kalispels were at the fishery at Kettle Falls. According to some sources the Kalispel had fishing rights just below the lower falls that were generally recognized by other tribes. Chance (1973) amplifes on this assertion,

"A source from this century (Meyers 1912) claims that in return for the right of access to the Kettle Falls fishery, the Kalispels gave the Sxoielpi the right to dig camas in the Kalispel Valley. Although this is a European reading of an arrangement perhaps not so clearly rationalized in aboriginal culture, there is no reason to doubt that this reciprocity was a fact."

2.3.1.3 Salmon fishing on the Spokane River drainage.

The Kalispels also ventured to the Little Spokane River, Little Falls and Spokane Falls to join the Spokanes in fishing salmon (Walker 1977, Bonga 1978). They were on friendly terms with the Spokanes and, in return for fishing privledges, allowed the Spokane to dig for camus in their territory. The Little Spokane River was a primary salmon site that was frequently used by the Kalispels. The upper portion of the Little Spokane is actually in Kalispel territory.

David Thompson saw *"seven tents of Kalispels"* fishing on the head-waters of the Little Spokane River on June 13, 1811 where they were constructing a weir. They *"thus await the arrival of the salmon from the sea now expected daily"* (Thompson quoted by Glover 1962).

At Spokane House, near the confluence of the Little Spokane and Spokane River on August 14, 1811 Thompson recorded, *"The Indians are catching but few salmon. Several Kullyspells [Kalispels] arrive. We have with us 32 lb of dried salmon"* (Elliot 1918). Alexander Kennedy (1822-1823) also stated *"that the Kalispels joined the Spokanes at their fishery."*

2.3.2 Estimate of anadromous fish consumption by the Kalispel Tribe.

In view of the information presented in the preceding sections; Hewes' estimate of the per capita consumption of salmon at 100 lbs for the Kalispel appears too low. Hewes' median figure for the Plateau Tribes of 300 - 365 lbs per capita is more realistic. Walker (1957) calculated that the median consumption for Plateau tribes was 584 lb, so Hewes' figure should be considered a minimal estimate, and in the present circumstance is used as such to provide a minimal estimate of Kalispel Tribal consumption. Factoring in a migration calorie loss adjustment factor 0.57 and a waste loss adjustment factor of 0.8 (Schalk 1985; see section 2.1.2) yields 658 lbs per capita. Multiplying this figure by the lowest estimated population level of

the Kalispels at the time of contact--range is from 1200 (Mooney 1928) to 1500 (Boyd 1985; Walker 1985), 1600 (Lewis and Clark 1805), 2500 (Anastasio 1972) or 5000-6500 (Teit 1930)--to intentionally introduce a conservative bias into the calculation, yields a total consumption of 789,600 lbs of salmon. At an average weight of 18.5 lb/fish this yields 42,700 salmon. Using Walker's (1985) and Boyd's (1985) population estimate of 1500 individuals, the total consumption was calculated at 987,000 pounds or 53,500 fish. The above estimates provide a minimal indication of the lost subsistence. The Kalispel Tribe also suffered cultural loss in the sense that the fish were also put to ceremonial, religious and other cultural uses. Walker (1980) provides examples of Kalispel mythology related to fishing.

2.3.3 Resident fish resources.

Resident fisheries were reported to be at least as, or more, important to the Kalispels than their anadromous fishery (Bonga 1958, Smith 1983, 1985). Allan Smith's 1700 pages of notes were condensed to a 250 page document about the species, times of year, locations and fishing technology (Smith 1983). The bulk of this document was devoted to Kalispel resident fishing practices. Smith (1983) identified 43 resident fishing sites on the Pend Oreille River, Priest Lake and River, Lake Pend Oreille, Clark Fork River, and Little Spokane River. Principal species fished included, but were not limited to, trout, char, whitefish, perch, sturgeon, suckers, chubs, and squawfish. Fishing techniques included weirs, traps and other implements. Often a Fish Chief (or master fisherman) oversaw the construction and operation of the weirs. Ray (1937) identified native villages in groupings throughout the Columbia plateau region. Among these was a Kalispel Village at the mouth of the Kalispel River near Cusick, WA. It was a permanent village but "*most populous in early summer [i.e., before the salmon began running at Kettle Falls] at which time one thousand persons often gathered, attracted by the communal distribution of the catch at the large fish trap.*"

The resident fishery remained important to the Kalispels into the twentieth century as indicated in U.S. Fish Commission Reports. For example, Gilbert and Evermann (1895) reported that in 1894,

"Dolly Varden (Salvelinus malma) [or Bull trout (Salvelinus confluentensis)] are abundant in the Pend Oreille River. We saw in the possession of an Indian several fine specimens, the largest of which was 26 inches long, 11 inches in greatest circumference, and weighed 5 pounds and 1 ounce."

Although being confined to a reservation restricted their use of some of their most important fishing sites, living members of the Kalispel Tribe contend that the resident fishery remained an important part of their subsistence until about 1958 (Glen Nenema, Chairman, Kalispel Tribal Council. Stan Bluff, Kalispel Tribal Council Member). After this period they claim that dams erected on the Pend Oreille River in the 1940's and 1950's (i.e., Albeni Falls Dam and Box Canyon Dam) ruined their fishery by causing a shift in the fish population from predominantly trout, char and whitefish to predominantly squawfish, perch and suckers.

2.3.3.1 Estimate of Kalispel consumption of resident fish.

Smith's reports clearly demonstrate that the Kalispel resident fishery provided an important component to their annual diet, likely more important even than their anadromous fishery. Therefore, a figure of 300 lbs per capita, i.e., the equivalent of Hewes' per capita consumption of salmon, would probably underestimate Kalispel consumption of resident fish. Three hundred pounds multiplied by the Kalispel population of 1200 people equals 360,000 lbs of resident fish. Assuming that the catch was composed of 25% bull trout weighing 5 lb each, 25% cutthroat and rainbow weighing 2 lb, 25% whitefish weighing 2 lb, and 25% suckers and roughfish weighing 2 lb, the catch would consist of 18,000 bull trout, 45,000 cutthroat and rainbow, 45,000 whitefish, and 45,000 suckers and roughfish.

2.4 KOOTENAI TRIBE OF IDAHO.

Linguistically the Kootenai were unrelated to the other Tribes of the Upper Columbia Basin. Members of the Spokane, Coeur d'Alene, Kalispel and Colville Confederated Tribes spoke different dialects of Salish language but the Kootenai did not (Walker, 1977; Smith, 1984). For this reason some anthropologists have taken the view that the subsistence patterns of the Kootenai Tribe more closely resembled those of tribes living on the Great Plains than those of tribes living on the Columbia Plateau.

Walker (1985) combined reviews of several hundred historical manuscripts and archival research with ethnographic field work (Kootenai Indian informants). He argues that the traditional anthropological view of the Columbia Plateau aboriginal cultures, which emphasizes the transition from the mainstem (Plateau) tribes primary dependence on salmon to the interior (Rocky Mountain) tribes dependence on bison, is far too simplistic. He points out that even groups such as the upper Kootenai and upper Missouri River Tribes maintained important anadromous and/or resident fisheries.

The Kootenai Tribe formerly occupied a large tract of the Upper Columbia Basin in northern Idaho, the northwestern corner of Montana, and southeast corner of British Columbia. The accompanying map (Fig. 2.4) of "usual and accustomed" Kootenai fishing territory was compiled from the following ethnographic sources: Tolmie and Dawson (1884); Chamberlain (1905); Teit (1930); Lewis (1906); Boas (1911); Curtis (1911); Schaeffer (1935, 1940); Ray (1936, 1939, 1942); Turney-High (1941); Northcote (1972, 1973); Chalfant (1974); Walker (1971, 1977, 1982, 1985); and Smith (1984). Descriptions where Hudson's Bay Company traders and missionaries saw Kootenai fishing were also used to prepare the map.

The Kootenai are commonly split into two groups by ethnographers--the Upper Kootenai and the Lower Kootenai--based principally upon their subsistence economy (Teit 1930; Schaeffer 1935, 1970's; Walker 1977; Smith 1984). Walker (1977) states, "*The aboriginal territory of the Kutenai was rich in fish and game. Particularly, the lower Kutenai harvested great quantities of fish including several types of salmon, whitefish, trout, suckers, sturgeon and squawfish...the Upper Kootenai were more oriented toward the Great Plains culture area, and already had a well-developed horse complex by the time Euro-Americans arrived in the area.*" At present (1985) the Upper Kootenai are located in the vicinity of Elmo and Jennings, Montana

Figure 2.4 Map of Kootenai Tribe's usual and accustomed fishing territory.

1

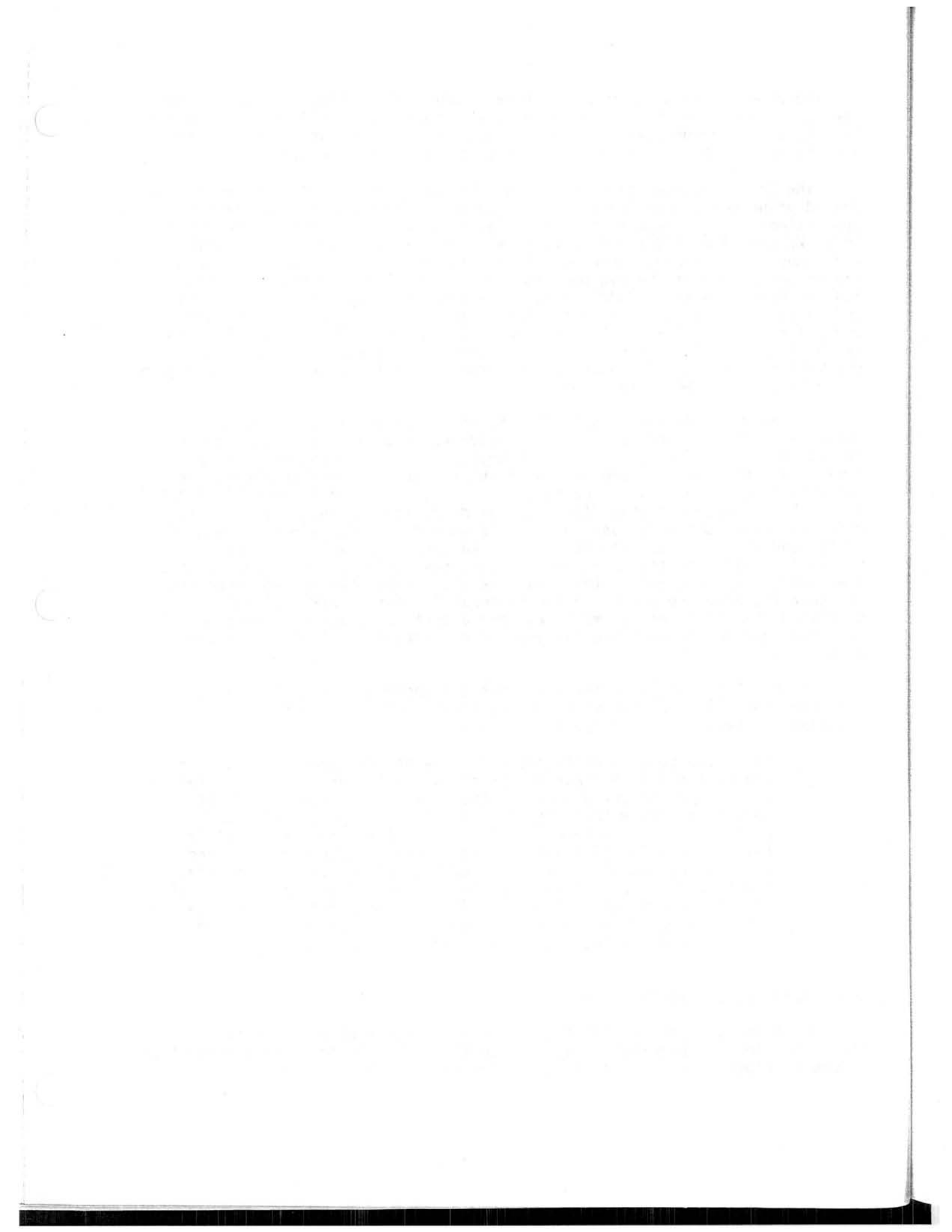
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KOOTENAI RESERVATION: 1985

- Aboriginal Territory
- Principle Anadromous Fisheries
- Other Anadromous Fisheries
- Resident Fishery Areas



and the Lower Kootenai at Bonners Ferry, Idaho and Creston, British Columbia. The bands from these diverse areas are, as in the past, still bonded together through their common cultural heritage and kin relationships. The present account focuses on the fishing activities of the Lower Kootenai.

The Upper Kootenai bands inhabited the Rocky Mountain trench region, and relied principally upon the prairie buffalo for food and to a lesser extent upon salmon and resident fish (Teit 1934; Schaeffer 1935, 1940; Turney-High 1941; Walker 1982, 1985; and Smith 1984). On the other hand, fish, both anadromous and resident, were the staple diet of the Lower Kootenai Indians living downstream of the big bend on the Kootenai River (about at Libby), at Bonners Ferry (formerly Paddlers Lake), around Kootenay Lake and its outlet, and on the Columbia River from the Arrow Lakes to Kettle Falls (Chamberlain 1905; Turney-High 1941; Northcote 1972, 1973; Walker 1977, 1982, 1985; and Smith 1984). At least ten different species of fish were used for food by the Kootenai Indians, although salmon, trout, whitefish, suckers and sturgeon were probably the most important.

For example, Chamberlain (1905) stated, "*Fishing is still the chief occupation of the Lower Kootenai, the Upper Kootenai except during salmon season being less devoted to it.*" In another instance Schaeffer (1940) indicated that from an economic standpoint fishing for both anadromous and resident fish was of basic importance to the Lower Kootenai, since it formed their chief staple and that "*the Kootenai dried immense quantities of fish which was their principal source of sustenance during the winter.*" Schaeffer (1940) and Walker (1985) report that the Kootenai held a "*First Fish Ceremony*" similar to the "*First Salmon Ceremony*" held by the tribes located downriver. This element of their culture illustrates the extreme importance of their fisheries resources to the Kootenai Indians. Walker (1985) concluded that "*fishing was most probably a continuing activity wherever the Kootenai happened to be traveling and during virtually all phases of the annual cycle.*"

Smith (1984) has taken the view that the Kootenai were effectively isolated from all other native groups by their unique language and geography. However, Walker (1985) believes:

"this may be an overstatement in view of the common interaction of the Kootenai with other groups at native fisheries (such as Kettle Falls) and gathering areas of the region. Kootenai informants generally affirm that they fished with other groups at such fisheries as Arrow Lake, Kootenay Lake, Columbia Lakes, Kettle Falls, and below Bonnington Falls. They regularly encountered other groups while fishing on Lake Pend d'Oreille, Priest Lake, Flathead Lake, and on the many smaller and larger tributaries of the Columbia River and Kootenai River. Their excellent sturgeon fishery also attracted other groups. The flesh and oil of the sturgeon were prized and traded with other groups."

2.4.1 Anadromous fish resources.

The Kootenai tribe of Idaho had access to salmon only on the fringes of their territory. Bonnington Falls, downstream from Kootenai Lake in British Columbia, blocked passage of salmon up the Kootenai River (Bryant and

Parkhurst 1950). The Bonners Ferry Kootenai relied more heavily on resident fish such as sturgeon, kokanee (landlocked sockeye), kamloops trout, whitefish and suckers. However, they would make regular visits below Bonnington falls during the salmon spawning season. Also, they traditionally fished (presumably for sockeye) in the Arrow Lakes Region of the mainstem Columbia, a territorial boundary disputed by the Lakes Tribes which also claimed the area. Additionally there are records of Bonners Ferry Kootenai fishing for salmon at Kettle Falls, and at Lake Windermere and Columbia Lakes in British Columbia. The latter location is within upper Kootenai Territory.

2.4.1.1 Salmon fishing at the headwaters of the Columbia at Columbia and Windermere Lakes.

Baillie-Grohman (1900), an entrepreneur who lived in the upper Columbia Basin from about 1870-1910 and concocted the idea of connecting the headwaters of the Columbia and Kootenai River with a canal, states:

"Few spots are of such captivating ichthyological interest as the source of the Columbia. Forty years ago the number of fish that reached spawning beds there was so great that the receding waters would leave millions of dead salmon strewn along the banks, emitting a stench that could be smelt miles off . . . The countless ridges (of salmon redds) in the gravel bottom of the young Columbia where it emerges from the mother lake gave in 1887 . . . evidence of the vast quantity of fish . . . the salmon beds extended for three or four miles, ridge following ridge, the depth of the water on the top of each crest, at the time, hardly exceeding a foot."

The principal species returning to this region was chinook salmon (Bryant and Parkhurst 1950; Fulton 1968, 1970; Fulton and Laird, unpublished manuscript, no date).

At Canal Flats, British Columbia, the Kootenai River (drains south) passes within one mile of the headwaters of the Columbia River (drains north). Bryant and Parkhurst (1940) state, *"During high water periods, the Kootenai flooded into the Columbia on the flats and at such times in the past, salmon and other fish that had been unable to ascend [Bonnington Falls] in the Lower Kootenai River may possibly have entered and spread through the Kootenai from the Upper Columbia River at Canal Flats."*

The first references to salmon fishing in the Upper Columbia by the Kootenai Tribe were made by the fur traders David Thompson and Alexander Henry in 1807. In 1807 Thompson discovered the source of the Columbia River at Upper Columbia Lake (i.e., Columbia Lake) and established a fur trading post (Kootenai House) on Toby Creek, a tributary of the Columbia near the outlet of Lower Columbia Lake (i.e., Lake Windermere). Thompson was first and foremost an astute businessman. His selection of this site for a fur post was partially based on the fact that a supply of salmon could be obtained at Toby Creek and that a large number of Indians gathered in the area at certain times of the year for salmon fishing, thereby increasing opportunities for fur trading transactions. Thompson kept a daily log (i.e., his "journal") of his activities and later published his memoirs (i.e., his "narrative"). Both Thompson's "journal" and "narrative" and Alexander Henry's journal were later

edited and annotated by Coues (1897), Tyrell (1912), Elliot (1925), and Glover (1962), from which the following excerpts are taken.

- o Thompson's journal (August 16-27, 1807 in the company of a large party of Kootenai Indians). *"The salmon now made their first appearance but are too fugitive for us to profit by them. On the 29th we speared in the night for salmon, the largest weighed 26 lbs. They were tolerable good but having come so far had lost all their fatness"* (Coues 1897, Elliot 1925, Tyrell 1962). For this period Thompson records in his narrative (Glover 1962), *"At length the salmon made their appearance and for about three weeks we lived on them. At first they were in tolerable condition, although they came upwards of twelve hundred miles from the sea, and several weighed 25 lbs. After the spawning season the shores of the river were covered with them, in a lean dying state, yet even in this state many of the Indians eat them."*
- o Thompson's journal (Sept. 5 to Sept. 9, 1807) *"During this time our living was partly on salmon and partly on meat. We made a salmon net of 45 fathoms long, but the strength of the fish aided by the current often broke it."*
- o Thompson journal (Sept. 16, 1807) *"Twelve Lower Kootenai [Flatbow] men and one woman arrived [at Kootenai House on Toby Creek]. Their country is marshy with thick woods, full of lakes. Fish of various kinds, of which sturgeon is the principal, with berries, forms the greater part of their food."*
- o Alexander Henry's journal (1807) *"The Flatbows [Lower Kootenai] live on the borders of a large [Kootenay] Lake and McGillivray's River [i.e., Kootenai River]. They frequently come up the [Kootenai River] as far as the falls [i.e., Kootenai Falls in Montana near the Idaho border.]. Salmon and other fish seem to be their principal food" (Coues 1897).*

George Simpson, reported seeing the Kootenai fish for salmon at Lake Windermere in 1828 (Graham 1945).

In September of 1845 Father DeSmet visited the headwater lakes of the Columbia in British Columbia with Kootenai Indians and reported seeing large numbers of salmon (Chittenden and Richardson 1904, Graham 1945). Father DeSmet (1854) reports on arriving at the two lakes (Columbia and Windermere), *"I saw... shoals of salmon. At the entrance of the second lake, in a rather shallow narrow place I saw them pass in great numbers."*

Dr. James Hector, a member of the Royal Geographical Society (London) Exploring Expedition to southern British Columbia under the direction of John Palliser, 1857-1860, wrote about the Columbia River about 100 miles downstream from Columbia Lake on Sept. 18, 1859, *"Along the banks we found a good many dead salmon, which had, no doubt been worn out on their long ascent from the sea. We afterwards saw them all the way to the source of the Columbia at the two Lakes" [Columbia Lake and Lake Windermere]. At Lake Windermere, Hector "found two families of Kootenai Indians here drying salmon, which they had caught in the Columbia Lakes, there being none in the*

Kootenai River as they cannot pass the great falls [Bonnington Falls] that occur close to where it joins the Columbia" (Graham 1945; Spry 1968). A few days later Hector was encamped at this location "with a large band of these Indians" (Graham 1945).

There is evidence that both the Upper and Lower Kootenai regularly fished for salmon at this location (Schaeffer 1940; Turney-High 1941; Walker 1982, 1985; and Smith 1984). Turney-High (1941:50, 51) states that "the Upper Kootenai fished for salmon near Windermere, where salmon spawned in the marshes and sloughs from which the Columbia River takes its origin. In the Lake Windermere region, members of the Upper Division were generally joined by Lower Kootenai parties, even though these downriver people likewise fished salmon down the Kootenai River in the Nelson area." Based on testimony of Kootenai informants recorded in 1935, Schaeffer (1940) put together the following account of the Kootenai salmon season at the headwaters of the Columbia:

"At the end of the summer a few families travelled northward from Tobacco Plains to Columbia Lake for the salmon season. The fish began to arrive in this region in August and continued through September or October. If there were prospects of an abundance of salmon, the advance party would send word south and other groups would hasten north to take part in the catch."

The fishing parties made their first camp near Briscoe in August, and after taking salmon there for a time, moved up the Columbia to the fishing site near Fairmont Hot Springs. During August and September the run was usually of some size and of good quality but by October the fish began to decline both in condition and catch (Schaeffer 1940; Smith 1984).

In 1936, salmon still ascended the upper Columbia (Bryant and Parkhurst 1950). At a bridge in the Salmon River near Golden, British Columbia, many 40-60 pound [chinook] salmon were seen "packed tight fighting their way upstream to spawn. The fish were taken 'illegally' by spears and clubs for food by [presumably Kootenai] Indians and by some of the local white residents. After spawning the shoals below the bridge were covered with dead fish. Another large population was observed near the outlet of Windermere Lake." At the latter location Mrs. A.H. Soles, who interviewed most of the residents in the vicinity in 1936, reported "abnormally good years of heavy runs occurred particularly during high water years." Bryant and Parkhurst 1950 concur: "[Mrs. Soles] statement might very well be true, because high water often enables greater escapement to be made through the commercial and Indian fishery on the lower river..."

2.4.1.2 Salmon fishing on the Kootenai River and Arrow Lakes.

Although anadromous fish were blocked in their ascent up the Kootenai River by Bonnington Falls, Teit (1930) writes that the confluence of the Slocan River, a tributary that enters the Kootenai River immediately below Bonnington Falls was "a noted fishing place" and that "salmon were very plentiful throughout the Slocan district." This site appears to have been important to the Lower Kootenai who came here to fish (Smith 1984; Schalk 1985; Walker 1985). "In early times trade was carried on between the Lower Kootenai and Lake tribes. Parties of the former frequently came to the mouth

of the Slocan and occasionally to the mouth of the Kootenai, to [fish for and] buy salmon" (Teit 1930). On these trips which lasted two or three weeks the Kootenai "ate plenty of fresh salmon and departed carrying dried salmon" (Teit 1930; Schalk 1985). The Lower Kootenai River and Arrow Lakes were jointly used by the Kootenai and Lakes tribes for fishing (Walker 1985). After the population of the Lakes tribe was decimated by smallpox epidemics in 1800 and again in 1832 (Teit 1930), the Kootenai continued to travel to and use this salmon fishing area extensively as indicated by the numerous reports of fur traders, missionaries, and settlers during the period from 1807 to 1870. Raymond Abraham, (pers. comm.) currently (1985) chief of the Bonners Ferry Band, related that his grandmother (a Lower Kootenai Indian) actually lived on the Arrow Lakes and that in the late 1800's many Kootenai Tribal members occupied the region of the Arrow Lakes.

On at least four separate occasions David Thompson, Alexander Henry, John Work and other fur trappers (1807 to 1833) reported meeting Kootenai Indians at or on their way back from their fishing sites on the Lower Kootenai and Columbia Rivers below Kootenay Lake (Coues 1897, Tyrell 1912, Elliot 1925 and Glover 1962). George Simpson recorded on Oct. 24, 1824 at the Arrow Lakes that "the shores are covered with salmon which the natives were collecting. They are the only support of those in this part of the country with the exception of a few roots they collect in the fall" (Merk 1968). John Palliser, leader of Royal Geographical Society Exploring Expedition, writes:

- o (August 17, 1859), "We learnt that there were no [Kootenai] Indians fishing near the source of the Columbia [at Columbia Lakes], as they had gone to the Arrow Lakes."
- o (August 26, 1859 near Bonners Ferry), "Arrived at Paddlers' Lakes [Bonners Ferry]. [The Kootenai Indians] encamped here...live principally on fish."
- o (August 30, 1859 near the U.S./Canadian boundary on the Kootenai River), "Arrived at a very ingeniously constructed fish weir, at which a large number of Flatbow [Lower Kootenai Band on the Kootenai River below Kootenay Lake] were encamped. These Indians, like the Paddlers [another Lower Kootenai band at Bonners Ferry], live by fishing, seldom hunt...dry fish and fresh salmon enabled my party to fare very well."
- o (September 4, 1859), near Bonnington Falls "Met [Kootenai] Indians returning from the Columbia River; had a fine feast of salmon, for which I exchanged a shirt for two salmon, one four feet, the other four feet four inches long. Camped not far from the entrance of the Columbia River."

Turney-High (1941) states, "In 1940 every competent and available Kootenai informant at Bonners Ferry, Creston and Tobacco Plains [a total of 18] was questioned regarding the westward extent of the Kootenai Range. With but one exception they all claimed Arrow Lake and its shores, although admitting that there were no Kootenai Villages there. They said that the lake was one of their important sources of fish, that their fathers regularly visited it by canoe, and that they expected to find no enemy or rival there

or on their way there." The lone informant indicated that the Lower Kootenai's used the Arrow Lakes but that there "sometimes could be trouble with other tribes." Turney-High (1941) also states: "The fact is that while the Lower Kootenai took salmon at Nelson [Bonnington Falls], they generally met the Upper bands fishing near Windermere."

2.4.1.3 Salmon fishing at Kettle Falls.

The Kootenai Indians traveled also to Kettle Falls during the fishing season as evidenced by the following item recorded in the Journal of David Douglas dated August 17, 1826 in which he refers to a party that he saw at Kettle Falls consisting of "twenty-one men and two females belonging to the Kootenai Tribe."

Father DeSmet, Jesuit missionary and careful record keeper, who traveled extensively in the Upper Columbia Basin in the 1840's once spent several days with the Kootenai Indians at [Kettle Falls], and the share of the salmon catch which fell to him as one of the party, loaded, when dried, thirty pack mules (Morgan 1881; Walker 1985). For tribes such as the Kootenai the fish were split into quarters, dried, packed in baskets and then removed to their villages. "This custom makes a general distribution of the capture and leaves each household in possession of its share" (Morgan 1881).

Other references to the Kootenai tribe fishing at Kettle Falls include DeSmet (in Chittenden and Richardson 1904); Turney-High 1941; Chance and Chance 1982; and Walker 1985: see also sections 2.1.1.4 and 2.1.1.6.)

2.4.2 Estimate of anadromous fish consumption by the Kootenai Tribe.

Because notes by different observers are consistent over time, they provide collectively strong evidence that the Kootenai regularly and routinely visited the headwaters of the Columbia at Lake Windermere, the lower Kootenai River below Bonnington Falls, the Columbia River at Arrow Lakes, and Kettle Falls for the express purpose of fishing salmon.

Estimates of the annual per capita consumption of anadromous fish by the Kootenai based on caloric and protein requirements of an average human, the caloric value of salmon flesh, and the assumption that half of the annual protein requirement was provided for by salmon, have been prepared by Hewes (1947 and 1973) and by Walker (1967). This figure was estimated by Hewes to be 300 to 365 lbs. The median annual per capita consumption of the salmonids for the traditional Plateau derived by Walker is about 584 lbs. Multiplying the 300 lb. figure calculated above (which is reasonable in view of the information presented about the extent of the Kootenai fishery) times the Kootenai population level at the time of contact (estimated at about 1200--Carey 1922, Kroeber 1939), yields a product of 360,000 lbs total annual consumption. Notice that Hewes 300 lb figure and not Walker's 584 lb figure for annual per capita consumption was used for this calculation even though Walker's figures likely provide a more accurate portrayal of the catch. This was done intentionally to provide a conservative estimate of the total catch.

Schalk (1985) pointed out that the above figures were for the caloric value of salmon flesh in the ocean, so that tribes living upriver would

actually have to take more fish than tribes living downriver to obtain an equivalent amount of calories. Schalk postulated that an adjustment for caloric loss during migration should be made for calculating the caloric content of salmon flesh after they reached upper portions of the Columbia Basin. Following Hunn (1980) he computed the caloric loss factor as the ratio of the entire length of the Columbia river to the distance from the mouth to a particular tribes territory. For the Kootenai, the migration calorie loss factor was 0.39. Schalk also suggested that it would be appropriate to adjust the figure using a waste loss factor of 0.8 to get the gross weight of the fish used. Hewes' estimate of the average consumption (300 lbs.) was divided by the migration calorie loss adjustment factor (0.39) and waste loss adjustment factor (0.8) to calculate adjusted average per capita consumption of 962 lbs. Multiplying 962 pounds per capita x 1200 population = 1,154,400 lbs. of salmon consumed annually by the Kootenai Tribe. Assuming that the bulk of fish taken were chinook salmon, and the average weight of chinook salmon is 18.5 lbs. (Beiningen 1976), the total number of salmon harvested annually by the Kootenai was 62,400. In view of the conservative numbers used in the calculation this represents a minimum estimate of the catch.

Curtis (1911) and Turney-High (1944) estimated the aboriginal Kootenai population in the late 1700's at about 4000 to 5000 individuals. Using the above figures for average per capita consumption, a population of 4000 people would have consumed about 3,848,000 pounds of salmon or 208,000 fish. Using Boyd's (1985) populations estimate of 1500 yields 1,443,000 pounds or 78,000 fish. Using Walker's (1985) population estimate of 2500 yields 2,405,000 pounds or 130,000 fish.

The Kootenai population from about 1820 to 1940 was approximately 1000 individuals (Boas 1899; Powell 1891; Chamberlain 1892, 1905; Coues 1897; Schaeffer 1940; Turney-High 1941; and Brunton 1974). Thus, the number of salmon harvested by the Kootenai during the period immediately before significant developments occurred in the Columbia River (circa 1865) would have been about 44,304 fish annually. Fish were also used for religious and ceremonial purposes by the Kootenai tribe. Walker (1980) reported several examples of Kootenai mythology relating to fishing and hydrogeological features.

2.4.3 Resident fish resources.

Walker (1985) suggested that the anadromous and resident fishery of the lower Kootenai each contributed about 50% of the total annual protein and caloric requirements.

Lt. John Mullan (1885) who mapped and explored the Upper Columbia Basin in 1854 for Gov. Steven's North Pacific Railroad Survey writes about the importance of resident fish to the Lower Kootenai bands, "*Their chief articles of food are roots and fish. The waters of the Kootenai River afford them at all seasons an abundant supply of salmon-trout.*"

Ethnographers (e.g., Schaeffer 1940; Turney-High 1941; Turner 1978; Smith 1984; and Walker 1985) report that the Kootenai fished for resident fish using a variety of techniques. Two of the most important were: (1) wiers constructed on tributaries of the Kootenai River in spring to catch

trout and suckers, and in fall/winter to catch burbot and (2) traps constructed on sloughs off the main river. The latter technique made use of the annual floods which inundated the sloughs. After the flood waters reached their highest levels the entrance of the sloughs were blocked off thereby stranding the fish trapped in the enclosure as the water receded. A Fish Chief directed the building of these weirs. More important resident fisheries sites were located at Kootenai Falls on the Kootenai River, Yaak falls on the Yaak River, Moyie Falls on the Moyie River and at Deep Creek where weirs were constructed, and also the slough at Paddlers Lake [i.e., Bonners Ferry] where a fluctuating water level trap was built.

David Thompson (1807-1811) and George Simpson (1824) both recorded Lower Kootenai Indians fishing at these locations--in Thompson's case there are several accounts (Coates 1897; Tyrell 1912; Elliot 1925; Glover 1962; and Merk 1968). Another important resident fishing site was at Kootenay Lake. Baillie-Grohman (1900) recorded "*The lower Kootenai fish as much as they hunt, and I was surprised what big hauls they made with rather rude contrivances. It was a common feat to catch 30 or 40 pounds of the land-locked salmon in an hour with one spoon troll out.*" Numerous additional Kootenai resident fishery sites have been identified by ethnographers along the Kootenai River and its tributaries, Kootenay Lake and its tributaries, Priest Lake, Lake Pend d'Oreille, Clark Fork River and in the Flathead System (Schaeffer 1940; Turney-High 1941; Smith 1984; and Walker 1985). Walker (1985) located at least 70 sites. According to Turney-High (1941) the upper Kootenai were invited to use the weirs of the lower bands on occasion.

Schaeffer (1940) provided the following information about the annual Kootenai subsistence cycle. "*During the spring trout were taken in great numbers in weirs fitted with basket traps. The season among the Upper Kootenai only lasted about 10 days...but during this brief period over a thousand fine trout [were caught] at each weir.*" The Lower Kootenai operated similar resident trout fisheries (Turney-High 1941). Schaeffer (1940) continues, "*In early May, the trout fishing period came to a close and suckers and ling were now speared at night. During the early summer while tributaries of the large river were first rising with the flood waters and falling, fish were taken with weirs and traps. Trout, char and whitefish were all caught during this period of summer freshet.*" Schaeffer (1940) indicated that buffalo were only hunted for about one month from about mid July to mid August. Then the Indians came back west over the Rockies to fish for salmon.

Alice Shottenana (in Walker 1985) described Kootenai resident fish fishing practices at Bonners Ferry (circa 1900),

"The fish that swam upstream including suckers, were taken by traps. Many Indians came and set up a camp to catch these fish. The fish caught were distributed amongst the Indians in the camp. Indians shared their food with each other. The fish that were trapped were cleaned and dried for future use; the heads of these fish were also eaten; the eggs of a fish were also treated and later eaten. There were several types of fish to be caught such as: suckers, squawfish, perch (e.pat!) and trout. The men strung a wire across the river with hooks to catch sturgeon, (wi.ya). Regardless of the size of the camp, the sturgeon was distributed to each person in small amounts. The sturgeon has diminished; they

are rarely caught in our waters anymore [1980]."

Several species of fish were taken in the resident fishery, with kokanee, trout, char, whitefish, sturgeon, burbot, suckers and squawfish being the most important (Smith 1984, Walker 1985). The Kootenai River and its tributaries formerly produced large numbers of trout and kokanee. For example the following is excerpted from a Spokane, WA newspaper (Spokesman Review Oct. 18, 1909). "Jean Jones and Albert Farnham are shown in the above picture landing nine-pound two-ounce trout out of the Kootenai River at Bonners Ferry, Idaho." Kootenay Lake also produced kamloops trout, a variety of rainbow that grows to 10-15 lbs, that ran up the Kootenai River to Kootenai Falls for spawning. The Northwest Fur Company in 1808 established a trading post near Kootenai Falls because of the large numbers of Indians who congregated there to fish.

Sturgeon deserve special recognition because they were highly prized for their oil content. In 1843, DeSmet (Chittenden and Richardson 1904) reported, "A species of sturgeon which measures from six to ten and sometimes twelve feet in length is taken by the dart (spear) in the great lake and river of the Arc's-a-plats (i.e., Kootenay Lake and the Idaho portion of the Kootenai River)." Graham (1979) stated that "sturgeon were utilized by the Kootenai Indians for at least 200 years." The following excerpts indicate that large sturgeon were abundant in the Kootenai River at the turn of the 20th Century.

- o Spokesman Review (May 26, 1909). "The accompanying illustration shows a sturgeon nine feet long, weighing 350 pounds, caught in the Kootenai River by Mr. Moughn. This is the largest fish ever caught in the river here (A photograph of the fish is included)."
- o Spokesman Review (May 10, 1913). "The largest sturgeon ever seen in the Kootenai Valley was captured this morning by Clarence Fry. Mr. Fry has a set line in the river at this time of the year and frequently catches large fish. This morning when he went to pull in his line he found a sturgeon nine feet long on the line and with the help of two men he landed the fish and had it weighed. The monster balanced the scales at 320 pounds."

According to Schaeffer's (1940) informants, sturgeon occurred in the main [Kootenai] River below but rarely above Kootenai Falls. Schaeffer stated "sturgeon of great size still swim in the Kootenai River and in former times were an important food fish [to the lower Kootenai]." Turney-High (1941) reported that "sturgeon were caught by the lower Kootenai, among whom it was an important fish." These observations are consistent with recent studies conducted by the fish and wildlife agencies in Idaho and Montana, that demonstrated that sturgeon were present below but not above Kootenai Falls (reviewed by Scholz et al. 1985). Deward Walker (pers. comm. 1985) relayed information that Kootenai informants told him that from the 1930's and 1940's to about 1975, Bonners Ferry Kootenai tribal members still fished for sturgeon with set lines and averaged catching about five sturgeon a year. Studies conducted by the Montana Department of Fish, Wildlife and Parks, Idaho Department of Fish and Game, and British Columbia Ministry of the Environment from 1973 to 1983 indicate a decline in sturgeon populations

in the Kootenai River after 1975 (reviewed by Scholz et al. 1985).

2.4.3.1 Estimate of Kootenai consumption of resident fish.

Northcote (1971 and 1973) made an approximation of the quantity of fish taken annually from Kootenay Lake and adjacent waters by the Kootenai Indians by calculating probable food requirements of the population. The Lower Kootenay bands living mainly near the south end of Kootenay Lake and in the adjoining valley of Kootenai River (inlet) fed heavily upon fish in the lake or migrating from it. According to Northcote (1973), "Exploitation of Kootenay Lake fish by Lower Kootenay Indians was estimated in two ways: (1) by calculating annual amounts required for an adequate animal protein supply for the population, assuming that the bulk of the protein came from fish and a population level of about 200 individuals and (2) by calculating annual amounts required for a 2500 calorie per day diet, assuming 75% of the total caloric intake came from fish." The caloric-based calculation used an average value of 113.9 calories per 100 grams wet weight of whole raw fish obtained from rainbow trout, salmon, and whitefish (Watt and Merrill 1963). Maximal fish exploitation by the Indian population was calculated to be in the order of 100 metric tons annually. If only 50% of this requirement was in the form of salmonids from Kootenay Lake, of which trout contributed 40%, kokanee and mountain whitefish each 25% and char 10%, then maximum exploitation would have required an annual take of about 20,000 trout averaging 1 kg; 125,000 kokanee averaging 0.1 kg; 50,000 mountain whitefish averaging 0.25 kg; and 2500 Dolly Varden averaging 2 kg. Northcote concluded that these relative levels of exploitation seem reasonable considering what is known of the Kootenai Indian fishing methods and preferences. Using the total Lower Kootenai population at the time of contact, i.e., half the total Kootenai population (1200 people) or about 600 individuals (Kroeber 1939), these figures should be increased by a factor of 3 to yield a total Lower Kootenai catch of 60,000 trout; 375,000 kokanee; 150,000 mountain whitefish; 7500 Dolly Varden and an undetermined number of sturgeon.

2.5 THE UPPER COLUMBIA BASIN INDIAN FISHERY: SYNOPSIS.

One of the most striking findings of our research was the reports of large congregations of Indian fishermen and the large number of important fisheries centers in the upper Columbia Basin: 1000-2000 at Kettle Falls, 1000-1400 at Little Falls, 1000 at the Little Spokane River, over 1000 at Spokane Falls and 250 on the Sanpoil River. Although the Dalles and Celilo Falls area is normally thought of as the most important Indian fishery on the Columbia Plateau many fur traders, missionaries and scientific observers such as John Work, Father DeSmet, and David Douglas (Elliot 1914, 1915, Chittenden and Richardson 1904, Douglas 1914) who recorded counts of the number of Indians at the fisheries indicate that the highest concentration of Indian fishermen in the Columbia Basin was actually in the upper portion of the river. For example, David Thompson canoed from Kettle Falls to the mouth of the Columbia River in July 1810 and noted main Indian fishing areas at Celilo Falls, the Dalles, Cascade Rapids, the mouth of the Sanpoil, the Spokane River, and the mouth of the Methow River [but] "Kettle Falls had by far the largest population of Indians all heavily dependent upon the salmon" (Koch 1976, Coues 1897, Tyrell 1916, Glover 1962).

High concentrations of Indians were also reported fishing in up-river areas between the Wenatchee River and Kettle Falls. David Thompson in 1810 recorded "800 souls" at the mouth of the Wenatchee River (Glover 1962). George Simpson reported that at Rock Island Rapids in Nov. 1824, he "In the course of today passed some hundreds of Indians all busily employed in laying up salmon for the winter" (Merk 1968). Alexander Diomedi, a Jesuit priest recorded in 1879,

"sometimes as many as one thousand Indians will be gathered about the mouth of the Okanogan River at the time when the white salmon go up the Columbia River. All the old men, and sometimes the young also, fish steadily from early morning until late in the afternoon" (Kowrach 1978).

Apparently large clusters of Indian people also fished in the upper portions of the Snake watershed and harvested large numbers of salmon. For example, during his first years among the Nez Perces, the missionary Spalding (Drury 1936; Walker 1967) noted that on one day, on the Clearwater River,

". . . 202 large salmon weighing from 10 to 25 lbs were caught . . . There were probably as many taken at 50 other stations [that day] in the Nez Perce country . . . These fisheries will always be of great importance to this mission [Lapwai]."

While on an outing with the Nez Perces in the Wallowa Valley, Spalding recorded 300 salmon taken on July 25, 1839 and another 600 to 700 on July 27, 1839 (Drury 1958). Mrs. Smith, wife of the missionary Asa Bowen Smith, who resided at Kamiah in Nez perce territory during the late 1830's observed that, "Here also is their salmon fishery. With their fish weir they may catch hundreds every night" (Drury 1963).

Walker (1977) reported, "The Shoshone-Bannock, as well as their neighbors the Northern Paiute in southwestern Idaho, regularly took salmon below Shoshone Falls." Nathaniel J. Wyeth led an exploring expedition along the Snake River in 1833 (Young 1899). On Sept. 9, he saw Shoshone Indians fishing for salmon and recorded,

"In the morning went to see the Indians catch salmon which is done by entangling them in their passage up the creek among dams traps which they erect and spearing them. They catch an immense quantity. The operation commences in the morning at a signal given by their Chief. The main river here is full of salmon." On Sept. 12, "The river is full of salmon and plenty of them are to be had of the Indians which we meet every few miles fishing on the banks."

Craig and Hacker (1940) quote Washington Irving as stating "The early traders report that Indians at Salmon Falls on the Snake River took several thousand salmon in one afternoon by means of spears."

Suckley and Cooper (1860) reported;

Mr. George Gibbs communicates the following: "In some of the branches of the Columbia salmon penetrate to the Rocky Mountains, but they cannot ascend the Snake above Rock Creek between Fort

Boise and Fort Hall, where the great Shoshone Falls stops them. Fort Boise is a great fishing ground for the Bannocks and other bands of the Shoshone or Snake Tribe. We found them taking vast numbers at the end of August 1849."

This information suggests that the notion that the majority of Indian fishing activity was focused in the lower river at the Dalles and Celilo Falls is erroneous. Instead, Indian fishing activity was spread throughout the Columbia Basin and salmon fishing was as important to upriver tribes as it was to the lower river tribes on both the Columbia and Snake Rivers. This is also borne out by the values of the figures assigned by Hewes' (1947, 1973), Walker (1967) and Schalk (1985) to the annual per capita consumption of the upriver and down river tribes. This information should not be surprising when considering that as salmon moved upstream towards the headwaters in the upper Columbia and Snake Rivers, into smaller, shallower tributaries that also contained obstructions such as waterfalls and cascades, they became concentrated and, therefore, easier to catch in large quantities with minimal effort. It should be stressed that we are not arguing that more salmon were actually taken or more Indians were concentrated at upriver sites in comparison to downriver sites, only that the salmon resources were spread throughout the entire Basin and used extensively by the Tribes in each area.