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Organization of Indian Salmon Fishing in Western North America

Dietrich Treide
Leipzig University

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Publication of the Leipzig Museum of Ethnography: Issue 14

**Die Organisation des indianischen Lachsfangs
im westlichen Nordamerika**
[Organization of Indian Salmon Fishing in Western North America]

By: Dietrich Treide

Akademie-Verlag
Berlin

1965

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2021

Foreword

On Indians of the Upper Columbia Basin and their Salmon Fisheries

I am currently working on a book titled “*Indians of the Upper Columbia River Basin and Their Salmon Fisheries*”, which expands two earlier reports “*Compilation of Information on Salmon and Steelhead Total Run Sizes and Hydropower Related Losses in the Upper Columbia River Basin*”¹ and “*Aboriginal and Historic Sport Fisheries*”² that I published about this subject. This book describes the Salish [i.e., Nespelem (**Nespelem**), Sanpoil (**Nesilextcl'n**), Colville (**Sx̣'ẉỵ?i#px** – pronounced **Skoyelpi**), Lakes (**Sinixt**), Spokane or Spokan (**Sp'q'n'i'**), Kalispel (**Ql'ispé**), Coeur d'Alene (**Schitsu'umsh**), Okanogan (**Sylix**), Sinkiuse-Columbia (**.tskowa'xtsEnux**), and one band of Shuswap (**Kenpesq't**)], Sahaptin [i.e., Nez Perce (**Niimípuu**), Cayuse (**Liksiyu**), Yakama (**Mámachatpam**) Palouse or Palús (**Naha`'ampoo**)], and a language isolate [i.e., Kutenai (**Ktunaxa**) Indians] who lived in (and fished) the upper Columbia River Basin between Chief Joseph Dam [at Columbia River kilometer (RKM) 872.2 or river mile (RM) 545.1] in Washington and the headwaters of the Columbia River [at Columbia River RKM 1988.5 (RM 1242.8)] in British Columbia, as well as the principle tributaries of the Columbia River in this region [i.e., Nespelem, Sanpoil, Spokane, Colville, Kettle, Pend Oreille, and Kootenay (Canadian spelling)/Kootenai (United States spelling) rivers]. In particular, my book describes their dependence upon salmon as a chief item of subsistence and trade/barter. These peoples derived approximately 30 – 50 % of their annual caloric intake from anadromous (ocean-going) Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*) and Steelhead Trout (*O. mykiss*). Indians assembled annually during the summer and autumn months at traditional fishing sites where they harvested sufficient quantities of salmon to provide their sustenance not only during the fishing season but also throughout the long winter months.

Besides enjoying fresh baked or broiled salmon, they pounded the flesh into fine flakes using a mortar and pestle, then mixed it with nuts and huckleberries, using tallow (animal fat) to make a concoction called pemmican. In addition to consuming salmon they bartered or traded it for items such as horses, buffalo meat, or bison hides that they used for making robes or blankets. Finally, they used byproducts of salmon for a variety of everyday uses. For example, salmon skins were sewed together to make durable (and recyclable) bags that could be used to store nuts, berries, salmon pemmican, or possessions. Salmon skins were also used as backing for bows to strengthen them.

The people of the Upper Columbia Plateau built their culture around the return of the salmon. Salmon were one focus of their mythology: Their creator deity **Speelya (spilye?)**, a grizzled, horny Coyote, was a shapeshifter who could morph into a handsome Indian man almost instantaneously (e.g., think about Taylor Lautner's role as Jacob Black in the Twilight Saga of films, in which the space of just a few seconds, he transformed himself from a wolf into a ruggedly muscular man). Speelya travelled upriver bringing the salmon in his wake. Along the way Speelya raised rapids and low head waterfalls where salmon would aggregate, which made it easier for the various tribes to catch them. As payment he asked each tribe to supply him with a wife (he had a voracious appetite for beautiful young maidens), at which time he morphed into human form and had his way with her. (This was not necessarily a displeasing experience for the maiden if you remember he resembled Taylor Lautner instead of a mangy old Coyote during his congress with her.)

For tribes not inclined to be so generous with their women, Speelya erected massive barrier falls that prevented salmon from reaching that tribe's territory. A vivid description of Speelya's wrath in one such instance was provided in Sherman Alexie's poem “*That place where ghosts of salmon jump*”, which was commissioned as public art for the construction of a new Spokane Public Library in 1990 and installed in

Overlook Park in 1995, overlooking the falls on the Spokane River. Spokane Falls, a barrier falls for salmon, was said to have been created by Speelya to prevent their migration into Coeur d'Alene territory when the tribe refused him a wife. A copy of Alexie's poem was reprinted in 2018.³

All the Upper Columbia Basin tribes also practiced an elaborate religious ritual called the First Salmon Ceremony, the point of which was to ensure continued good runs of salmon, enough to sustain the Indian people whose subsistence and continued good health were incumbent upon the continuance of salmon runs. Finally, most tribes had an office of salmon chief (or salmon shaman) that was elected independently from (or sometimes appointed by) the head chief of the tribe. Such a person possessed a tutelary spirit, obtained during a vision quest when he came of age, with salmon power. Salmon chiefs directed the construction of the communal fishing apparatus (usually some sort of fish trap or weir, or J-shaped basket traps that were suspended under waterfalls that salmon, failing in their attempt to leap the falls, would fall back into.). Salmon chiefs ostensibly used their "salmon power" to summon the fish into the weir or basket trap.

Salmon chiefs were also granted absolute authority to regulate the fishery by telling people when to fish for them and when to stop fishing, allowing some of the fish to escape upriver, either to spawn and reproduce themselves, or to provide sustenance to Indian peoples who lived along the river above them. Finally, the salmon chief distributed the catch from the communal weir or basket trap equally between all of the people assembled at the fishery he was responsible for. The salmon chief's regulation of escapement and equal distribution of the catch were important aspects of his office, as explained by Christine Quintasket (Mourning Dove) of the Colville Confederated Tribes in her autobiography, to ensure that : *"Everyone got an equal share so that the fish would not think humans were being stingy or selfish and refuse to return."* ⁴ The Canadian artist Paul Kane, who visited the Indian fishery at Kettle Falls in 1847, reported that the Colville Salmon Chief there, named Seepays, frequently shut down that fishery to allow the salmon to escape upstream. Kane wrote, *"Infinitely greater numbers of salmon could readily be 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 Indians on the upper part of the river; so they content themselves with supplying their own wants."* ⁵

Analysis of faunal remains from archeological sites on the Columbia River near Celilo Falls [Columbia River RKM 320 (RM 200)] and Kettle Falls [Columbia River RKM 1125.6 (RM 706.4)], and on the Spokane River below Spokane Falls, indicated that anadromous salmonids have been fished by the aboriginal inhabitants of the Columbia Basin for about the past 8,000 to 9,600 years before present (YBP) (Chance 1986⁶; Butler 1993⁷; Butler and O'Connor 2004⁸; Walker et al. 2018⁹). At an archeological site near the Dalles, Oregon, the recovery of 250,000 salmon bones in association with human artifacts from several stratigraphic layers that were radiocarbon dated between 4,970 and 9,280 YBP points to this conclusion (Butler 1993; Butler and O'Connor 2004). In the mid-1970's archeological investigations at Kettle Falls also found numerous salmon bones in association with human artifacts, including harpoon points and net sinkers used to capture the fish, in several stratigraphic layers that were radiocarbon dated between 180 and 7,600 YBP (reviewed by Chance 1986). Salmon bones were also found in association with human artifacts in a stratigraphic layer below (i.e., that was older than) the 7600 YBP date but was not radiocarbon dated due to a deficiency of dateable material. Chance (1986) estimated that fish bones and artifacts in this stratigraphic layer dated approximately to as old as 9,600 YBP.

More recently, Walker et al. (2018) conducted archaeological excavations at People's Park, located at the confluence of the Spokane River and Latah (Hangman) Creek, in Spokane, Washington. Chinook Salmon bones (and artifacts associated with fishing for them) were collected from soil horizons that were radio-carbon dated from 2,500 – 8,000 YBP. The site was

part of the Spokane Falls fishing complex that was fished by Spokane and Coeur d'Alene Indians, and several other tribes, who assembled there in late summer and early autumn to catch Chinook Salmon that weighed between 15 and 60 pounds apiece. Chinook salmon ascended the river to Spokane Falls, which was a barrier that prevented their migration further up the river. After failing to surmount the falls, thousands of them swirled back around and ascended Latah Creek.

Spokane and Coeur d'Alene fishermen speared them while standing on fishing platforms or on rocks overlooking the falls, or caught them in basket traps suspended below the falls. J.N. Glover, the "father" of Spokane, Washington wrote,

"The first fall I was here, in 1873, and for several years after that, Spokane was the great rendezvous for all the Indians in this part of the country . . . At that time the salmon used to come up in great numbers. I have seen them so thick in the river that the rocks on the bottom would not be visible." (Glover 1985)¹⁰

The Indians also caught them in weirs set in the mouth of Latah Creek. Cadastral surveyor Claire Hunt described the weir set there as he saw it in 1886:

"The trap consisted of two barriers across the stream about 100 yards apart. . . each . . . made [of] panels, [and] supported by large tripods set in the water and resting on the river bed. Panels were made of two parallel poles about 30 inches apart. Woven willow mats attached to the poles on the downstream side made a continuous fence across the river. The mats extended down to the bed of the river. They were woven in an open pattern to permit the flow of water and yet closely enough to prevent the salmon passing through. The lower barrier had a large opening in the center to allow the salmon to enter. The upper barrier had no opening. . . When the fish were to be taken out, the opening in the lower barrier was closed . . . with a mat . . . to prevent the escape of salmon. 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," (Hunt 1936)¹¹.

Walker et al. gave some of the salmon bones (mostly vertebrae) they found at People's Park to Bobbi Johnson, a graduate student working on her Ph.D. dissertation at Washington State University (Johnson 2016)¹². These bones came from soil horizons that were radio-carbon dated at 2,500, 3,500, and 7,200 YBP. Johnson extracted and examined mitochondrial DNA (mtDNA) haplotypes from these bones and confirmed that they were from Chinook Salmon. One interesting thing that she also discovered was that these ancient upper Columbia Chinook Salmon vertebrae (n = 26 individuals) contained significantly more genetic variation than the vertebrae of contemporary descendant Chinook Salmon (n = 240 individuals) collected from the upper Columbia River (Johnson et al. 2018)¹³. Her results suggested that modern upper Columbia River Chinook contained approximately 1/3rd of the genetic variation that their 2,500 to 7,200 -year old upper Columbia River Chinook Salmon ancestors contained.

Johnson (2016) also measured intact vertebrae, confirmed by their DNA to be from Chinook Salmon, then used a formula that related the diameter of the vertebrae to fork length (FL) of the fish. [FL measures the length of a fish from the tip of its snout to the point located on the posterior end of the caudal fin between its dorsal and ventral lobes.] Johnson measured the vertebral diameter of eight of the ancient Chinook salmon found in the People's Park archaeological site (i.e., all of those intact vertebrae in the samples that she received) and used this formula to back-calculate their fork length at the time they were harvested. She found that the FL of the eight Chinook averaged (ranged) 96 (29 – 138) cm, with three of them (i.e., 38 %) being big enough (i.e., > 122 cm FL) to be considered June Hogs.

[June Hogs were a race of large Spring/Summer Chinook, that were > 122 cm FL and reaching weights of 22.7 – 45.4 kg (50 – > 100 pounds), that formerly spawned in the Upper Columbia Basin. These fish appear to be extirpated at the present time.] The three June Hogs in Johnson’s sample measured 132, 136 and 138 cm FL (i.e., 52.0, 53.5 and 54.3 inches FL respectively). I assumed a condition factor (CF) of these fish = 1.0 [NOTE: Condition factor is a formula that relates the length of an individual fish to its weight; CF = 0.9 – 1.1 are normal for salmon]] and back-calculated the weights of each of them at respectively 24.1, 26.3 and 27.3 kg (i.e., 53.0, 57.9 and 60.1 lbs.). These data confirm that Chinook Salmon of extraordinary size ascended to the upper Columbia River.

What I personally find intriguing (and incredibly disheartening) about all this is that the various Indian salmon chiefs regulated salmon fishing on the Columbia River for, perhaps, 8000 – 9000 years, without any appreciable long-term decline in salmon runs (abundance or size). During this period the various tribes along the river harvested almost as many fish as were taken by non-Indian commercial fisherman at the peak of the commercial fishing/canning industry that developed along the lower Columbia River after the first salmon cannery was established in 1866.¹⁴ Then federal and state fisheries agencies took over regulation of harvest of Columbia River salmon and steelhead trout, supposedly with superior Euro-American (i.e., Caucasian) regulatory techniques, and salmon (both abundance and size) in the river collapsed in less than 100 years.

In researching the subject of aboriginal Indian fishing in the Columbia Basin I came across a review of “*Die Organisierung des indianischen Lachsfangs im westlichen Nordamerika*” [translation: “*Organization of Indian Salmon Fishing in Western North American*” by Dietrich Treide.¹⁵ This was a version of Treide’s doctoral dissertation that was published by the Leipzig Museum of Ethnography in 1965. Wayne P. Suttles, an eminent anthropologist on the faculty at the University of British Columbia, then the University of Nevada, and finally Portland State University reviewed Treide’s publication in the April 1966 issue [Vol, 68 (2): 564 – 565] of *American Anthropologist*.¹⁶ In it he both praised Treide’s synthesis of the office of salmon chief, particularly as it related to the Interior Salish of the Upper Columbia area, and lamented the fact that it was only available only in German, so it might not be widely read among North American Anthropologists. There was only one thing to do, obtain a copy, which I able to do through the auspices of Tracey Rice with the Eastern Washington University (EWU), John F. Kennedy (JFK) Library, Interlibrary Loan Department.

I was certain that I would be able to decipher the German because I had taken two years of German in high school (in 1963 and 1964), and besides grew up among Wisconsin Germans who spoke a dialect of German. In this I was sadly mistaken (in part because I have lived for the past 41 years in eastern Washington, where I have heard nary a word of German uttered in the entire time I have lived here). However, I was able to read just enough to realize that Treide’s synthesis provided significant new insights about the role that the salmon chiefs played in the exploitation of salmon and steelhead resources, but my knowledge of German words was insufficient to supply the details. So, I called Dr, Sally Winkle, Professor of German, and Jody Stewart Strobelt, Senior Lecturer of German, in the Modern Languages Department at EWU to see if they could help translate it. Both individuals recommended that I contact Jaimie Kenney, whom both of them described as both fluent in German and besides she was an undergraduate in the Biology Department, so she might be able to provide a nuanced translation about any biological details provided by Treide’s book. Over the Quarter Break in the winter of 2017/2018, I paid Jaimie out of my Indirect Cost Account to accomplish the translation.

Attached is Jaimie’s marvelous translation of Treide’s publication. After reading her translation I was struck by the scholarship and originality of Treide’s dissertation, and how current his ideas still remain some 56 years after he put pen to paper. So, after obtaining permission from the copyright holder

(Leipzig Museum of Ethnography), with the assistance of Metadata Librarian Rose Krause and Reference and Instruction Librarian Justin Otto at the EWU JFK Library, we (Jaimie and I) have decided to make the translation available on the EWU, JFK Library Digital Commons website as we think the English translation of Treide's dissertation will be of wide interest to anthropologists and other professionals with an interest in aboriginal Indian salmon fishing. Additionally, we have placed a hard copy of the translation, together with a copy of Treide's original book in German in the JFK Library Special Collections, so that anyone who wants to read the translation will have the original document in German to compare it with.

We suspect that the upcoming renegotiation of the Columbia River Treaty (the treaty that governs the coordinated operation of all the hydroelectric dams and storage reservoirs on the Columbia River to maximize power production and provide flood control benefits) between the United States and Canada by 2024, combined with the insistence of all of the Columbia Basin Indian Tribes in both the United States and Canada that restoration of salmon above Chief Joseph and Grand Coulee dams be placed on the table as an item to be considered during this renegotiation, will refocus and reenergize interest in Interior Salish, Sahaptin and Ktunaxa Indians of the Upper Columbia Basin and their ancient and valuable salmon fisheries. We also believe that information provided in Treide's dissertation will significantly improve our understanding of Indian exploitation of these resources.

We gratefully acknowledge Dr. Frank Usbeck, Curator with the State Ethnographic Collections at the Dresden Museum of Ethnology, the Leipzig Museum of Ethnography and the Museum of Ethnography Herrnhut, for: 1) his assistance with obtaining permission of the owner of the copyright of Treide's dissertation [State Ethnographic Collections Saxony (SES)/State Art Collections Dresden (SKD)] to allow us to put the translation on the EWU, JFK Library's Digital Commons Website; and 2) Writing the biographical sketch about Treide. We hope that this effort helps to give Treide's work the international visibility it deserves.

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May 2021

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Biographical Sketch:

Notes on the life of Dietrich Treide (25 March 1933 – 2 November 2008)

Dietrich Treide was a German ethnologist and university professor. He grew up in Leipzig and enrolled in the Cultural Anthropology program at Julius-Lips-Institute for Ethnology at Leipzig University in 1951. The institute had been rebuilt after the war by Julius Lips. His widow Eva Lips took over the chair after Julius' early death in 1950, one of the first female tenured professors in Germany. The institute was one of two major training centers for cultural anthropology in the German Democratic Republic (GDR, or East Germany). The Lipses had chosen exile from Nazi Germany for political reasons, and spent years in the US during the war (at Columbia University in New York). They returned to Leipzig in 1947. After her husband's death in 1950, Eva Lips led the institute into the mid-1960s and shaped the careers of East German ethnographers such as Treide through vivid exchange with researchers from "the West." She worked to convey a realistic image of North American Indians, and instilled this ethic in Treide.

Unless one's research focused on communities within the Eastern bloc, GDR ethnographers could rarely hope to receive travel permits for field work abroad, because of the Iron Curtain and, after 1961, the Berlin Wall all but sealed off the country from the West. Therefore, a generation of "armchair ethnographers" emerged who were trained to anchor their work around the non-European material culture stored in vast pre-war museum collections (mostly at Leipzig and Dresden) and on diligent ethnohistorical research in the archives. Treide's dissertation on Indigenous historical fishing economies and social structures along the Columbia River is an exemplary work in this category (1965).

Shaped by the Lipses' philosophy, Treide's dissertation shows the influence of American scholars such as Alfred Kroeber, Clark Wissler, and Julian Steward, rather than the ideas of Marxist evolutionary theory prevailing in East German scholarship at the time. However, his work reflects the East German, especially the Leipzig institute's economic-historical approach to ethnography, and it shows the extensive training in languages and interdisciplinary area studies that became a marker of GDR ethnography. Even while finishing his dissertation, Treide already co-authored a popular survey titled *Ethnography for Everybody* (Ethnographie für Jedermann) which became a staple on the shelves in East German homes. Such efforts in popularizing academia served to dismantle the notion of scholarship as elitist, and to promote the study of other cultures as a way to diminish xenophobia and racism in post-war East Germany. It also offered a substitute to the wanderlust of East Germans suffering from Cold War travel restrictions.

Taking over the chair of the Leipzig institute in 1968, Treide was often confronted with demands to comply with communist policies on higher education, research, and culture. He was compelled to shift his research focus from "a few irrelevant Indian tribes" to broader – and politically more appealing – observations on the emergence of class and power structures in human history. Throughout his time as chair, he struggled to resist or dampen ideological attempts to steer research and teaching, or to shut down the institute and scatter its extensive historical library holdings. Possibly as a consequence of his inconvenient leadership, he gained tenure only in 1985.

After the fall of the Berlin Wall in 1989, Treide was elected to lead the reunified German Anthropological Association (1991), a gesture acknowledging his service to the field in East Germany. However, he also felt the shocks and painful changes in East German academia after reunification, which many observers today describe as a "neocolonial takeover" of East German institutes, chairs, and

tenured positions by Western scholars and administrators. He lost the chair of the Leipzig institute, and retired in 1996. Together with his wife Barbara, a specialist on Pacific island cultures at the GRASSI Museum of Ethnology at Leipzig, he spent his remaining years on extensive research trips and field studies, and published on cultural identity among communities in the Pacific.

His senior authorship or co-authorship of 54 publications (he was sole author of 34 of them) during his tenure at Leipzig is a lasting testament to his scholarship. His treatise *Die Organisation des indianischen Lachsfangs im westlichen Nordamerika* (The organization of Indian salmon fishing in western North America) is a prime example of his scholarship and his portrayal of realistic images of North American Indian cultures.

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¹Ms. Kenney accomplished this translation when she was an undergraduate in the Biology Department at Eastern Washington University in Cheney, Washington in 2018.

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FOREWORD

“The Organization of Indian Salmon Fishing in Western North America,” by Dietrich Treide, is the second publication of economic-ethnographic works by the Julius-Lips-Institute.

It is a dissertation that was originally intended to be much broader and in the present, streamlined version facilitates an in-depth review of an interesting topic.

May this work, conceived of and completed with the diligent work of the researcher, be of particular interest in the professional circles of ethnology, and may the institution of “Food-Chiefs,” organizers of important activities related to food acquisition, lead to comparable studies in other parts of the world and under other economic conditions.

The Julius-Lips-Institute gives its heartfelt thanks to the Leipzig Museum of Ethnography for carefully overseeing printing.

Professor Eva Lips, PhD

INTRODUCTION

In attempting to understand the structure and function of social institutions, especially in the early phases of organization of indigenous communities, an analysis of the respective factors affecting the organization of food production often offers very good opportunities for insight. Such an analysis touches on the existing methods for division of labor, the rights of collective groups or individuals to the means of production, and, finally, the generally similar scopes of duties of certain leaders within communities. It provides a foundation for understanding many social phenomena, even those not directly related to ensuring means of subsistence.

From the existing complex of diverse solutions to the problem of organization of food acquisition, the present work calls attention to a phenomenon that is not always observed in the early phases of development of indigenous communities. This study pieces together ethnographic material on the duties and social status of so-called “Food-Chiefs¹” and attempts to use this to outline the special conditions necessary for the development of such economic leaders. The Food-Chiefs or Organizers of Food Acquisition are described frequently in monographs as economic, social, and religious phenomena, but have, to my knowledge, never been the central focus of a comprehensive discussion².

In the ethnographic literature on Indian groups of western North America, Food-Chiefs, as temporary leaders of community activities related to food acquisition, are mentioned so often³ that it seems there must be a relationship between the existence of these officials and the existence of a set of

¹ The term food-“chief” is used in the present work to denote certain leaders of collective food acquisition efforts, although the function and social status of the food-“chiefs” was very different from those of permanent community leaders, such as tribal- and sub-tribal group-chiefs. This is because this term is often used in the English language monographs (*salmon chief*, *deer chief*, *buffalo chief*, etc.) and the term “travel chief” is used in the German language literature (E. LIPS, 1956). In the present work Salmon-Chiefs are distinguished from Salmon Fishing Organizers, whereby the use of the term Salmon-Chief refers to a leader with more institutional strength.

² see Table 1 (pp. 80/1) and Appendix I of the present work; see LIPS, 1956, pp. 222-226, 256/7.

³ see Appendix I of the present work (pp. 123-127).

similar economic and social conditions across much of this region. The Indian tribes of the Columbia River Plateau, Oregon, and California were not culturally uniform, but what they did have in common was a great dependence on the frequently-changing environments they lived in⁴. In contrast with neighboring groups of the Northwest coast or Pueblo region, the relatively poorly-developed means of production in this region resulted in only a few communities becoming specialized in just one form of food production⁵. In general, every naturally-occurring source of food was used throughout the course of a year⁶. The lack of economic specialization corresponded to both a rudimentary and only occasional social division of labor⁷ and a widespread lack of individual or group rights to the important means of production⁸. Within these societies, which were not very highly organized, economically- or socially-speaking, the seasonal occurrence of certain forms of food or of especially favorable conditions for the procurement of such food led to the cooperation of large groups of people⁹. The preparation for and execution of collective operations by groups whose members changed frequently¹⁰ and only lived together part of the time were not determined by fixed rules regarding social division of labor; there was no interaction between established groups of specialists. In order to accomplish necessary technical and organizational tasks, individuals with special abilities and experience related to a particular form of food acquisition ended up managing these temporary production collectives with almost absolute authority.

In some groups, people with individual rights to the means of production could significantly influence these collective operations, which could lead to power to influence economic activities¹¹.

Although the permanent leaders of local groups (Chiefs) of the tribes of the Columbia River Plateau had a say in all economic affairs, they were incapable of keeping track of all of the activities of the smaller groups the tribe frequently broke up into in the summer and fall. What's more, they probably did not have the special knowledge and experience necessary to lead all of the different collective operations to acquire food¹².

There is evidence that shamans were also involved in ensuring the means of subsistence in western North America, but their duties did not include directing communal food acquisition efforts¹³. The so-called Antelope- and Deer-Shamans of the Great Basin Indians are an exception¹⁴.

This rough outline of the economic and social circumstances that existed in large regions of western North America provides evidence of certain factors leading to the development of special leaders for important community food-acquisition activities, who only came into power during the hunting or harvest season of a given food animal or plant and acted largely independently of the permanent leaders (chiefs). In many groups there were coexisting—often with specific temporally and

⁴ WISSLER, 1922, pp. 9-12; KROEBER, 1939, pp. 49, 51, 55; for a discussion of the present status of cultural classification of western North America see SMITH, 1952, pp. 81-85.

⁵ See pp. 89/90, 92/3 of the present work.

⁶ See Appendix III (pp. 152-6) of the present work.

⁷ See pp. 68/9 of the present work.

⁸ See pp. 71-73 of the present work.

⁹ See pp. 71-74 of the present work.

¹⁰ See pp. 71-74 of the present work.

¹¹ See pp. 113/4 of the present work.

¹² See pp. 17/8, 73 of the present work.

¹³ See, for example, TEIT, 1906a, pp. 288/9; TEIT, 1930, p. 192; TURNEY-HIGH, 1937, pp. 36/7

¹⁴ LOWIE, 1924, pp. 303-5; STEWARD, 1938, pp. 34, 36, 70, 105, 108, 128, 142, 147, 163, 179; KELLY, 1939, p. 141; STEWARD, 1941, pp. 271/2; STEWARD, 1941, pp. 366/7, 422; STEWARD, 1943, pp. 293, 359/60.

functionally restricted jurisdictions—leaders of deer, buffalo, mountain sheep, bear, antelope, rodent and waterfowl hunting expeditions, leaders of communal fishing operations for salmon and trout, supervisors (often women) of the harvest of vegetables, and leaders responsible for the irrigation of patches of wild plants¹⁵.

In the present work, the activities and social status of the leaders of salmon fishing operations, in particular, are singled out and analyzed, because the type of temporary leaders of communal food acquisition efforts mentioned above occurred especially often when it came to communal salmon fishing efforts. In addition, relatively thorough reports on the leaders of community salmon fishing operations are available, but there is nothing comparable to the reports of the previous century on this topic when it comes to large hunting operations. The final deciding factor was that by piecing together the sometimes fragmented reports of various authors on the leaders of collective salmon fishing operations, a very broad work could be written, discussing general questions related to salmon fishing, including the behavior of the salmon, the regions of use of individual salmon fishing methods, the legal right to salmon fishing spots, and ceremonies to ensure a good salmon catch.

Salmon fishing was mostly a seasonal mode of food acquisition for the Indians¹⁶. Although the combined runs of all of the local species of salmon might last several months in inland waters, in some waterways a productive Indian salmon catch was only possible for a few weeks. They were not only limited by the absence of one or the other salmon species in a given waterway, but also, to a large extent, by the seasonally fluctuating water levels, which dictated when certain salmon fishing devices could be employed. In late summer and fall there was an especially strong incentive to take advantage of the salmon runs, because this was when a substantial reserve of dried salmon was put up for the winter. In some regions, this reserve of fish was necessary for Indian survival during the winter months, in other areas it temporarily freed people from the daily task of food acquisition, creating opportunities for improving their quality of life or for the development of complex social contact.

For many groups of the Columbia River Plateau and California, however, it has been demonstrated that in addition to salmon reserves, vegetables, and, often, dried meat, made up at least as much of the winter reserves. For them, the vegetable harvest in the spring and the fall hunts, which required the participation of all members of the community, often had to be carefully coordinated with salmon fishing, and, due to temporal overlap, they were often unable to take advantage of the entire natural salmon season. An economy based entirely on specialization in fishing existed in only a few interior groups, such as the Wishram, who traded a large portion of their great surplus of salmon for other types of food. There was little potential or incentive to specialize in fishing in the interior of western North America, in the sense of fishing all year round, because, while anadromous fish were widely available in certain seasons, there was a relative paucity of non-migratory fish species.

There is no doubt that river fishing and, therefore, fishing for anadromous fish, is one of the oldest forms of fishing, if not the oldest form in human history¹⁷. In especially well-suited places it was possible to catch a great number of migrating fish in a short period of time with only relatively crude fishing tools. At sandbars, rapids, and waterfalls simple spears and dip nets could be used, in other parts of the river with certain conditions, barriers (fish weirs or fish dams). The technologically relatively

¹⁵ See Appendix I of the present work (pp. 123-7).

¹⁶ For information on the general natural conditions of Indian salmon fishing and the circumstances of the utilization of this natural supply of food by Indians see Appendices II and III of the present work (pp. 128-158).

¹⁷ CLARK, 1952, pp. 27/8, 31, 42-8; for the widespread use of barriers in river fishing see SIRELIUS, 1906, passim; FINDEISEN, 1929, pp. 36-9; ROSTLUND, 1952, pp. 101-104; map 34 (p. 292); WILBERT, 1955, pp. 296/7.

simple basic structure of the barrier and its high yields made weir fishing one of the preferred methods for fishing in streams, especially for migratory fish. On the other hand, construction of a large weir required careful selection of the right time and location, management of a large number of workers, and management of the distribution of the fish caught during this joint effort¹⁸. At locations where spear- or net-fishing was very common, centralized leadership of these individual fishing operations also sometimes developed. It is likely that access to certain sections of the river or certain fishing spots, coordination of the interests of members of different tribes, and communication with groups that lived or were temporarily staying somewhere else played a role here¹⁹.

The ethnographic monographs on the Indian population of the North American West, in general, are each based on the reports of only a few informants. At the time of the ethnographic exploration of this region, the traditional Indian way of life was preserved only in fragments. While only some modern authors had a specific interest in questions of food acquisition (above all Turney-High)²⁰, others discuss this issue in some detail (Ray, Post, Walters)²¹, and information about the organization of food acquisition also enters into the reports of older authors (Teit)²². Because these large-scale communal activities were once central to the lives of the Indian groups that practiced them, most informants had heard accounts of them, even if they had not witnessed them in person. The thorough description of the function of the Salmon-Chiefs of the Sanpoil is, however, an exception, as Ray counted among his informants the son of a Salmon-Chief, himself—who, subsequently, took over his father's position after his death²³.

The records and reports of non-ethnographers of the previous century (19th), who were often able to observe the Indian population in a minimally altered way of life, are especially important for supplementation of the monographic information and of unparalleled value for the regions where indigenous ways of life completely disappeared very early²⁴. Here and there they include descriptions of the organization of salmon fishing that are relatively analyzable, but this is not so for the management of communal hunting expeditions. The first travelers in this region mainly moved along large rivers, and, therefore, visited many important Indian salmon fishing centers. Because the trips were frequently undertaken in summer or fall, they often had opportunities to observe the peak salmon fishing season. The large salmon fishing centers were often also hubs of Indian trade. White trading posts and missions were also established nearby. Thus, important details about Indian salmon fishing could be gathered by merchants and missionaries that lived among the Indians for longer periods of time or even permanently. Unfortunately, weir fishing was not on the radar of most early observers. This is likely due to the fact that weirs were usually located on tributaries, rather than on the largest rivers. It is telling that the only known report on the organization of Indian weir fishing from the 19th century is found in the logs of Ross, who lived among the Okanagon for multiple years²⁵. Other than this there are only special cases where statements by more than one author regarding salmon fishing at the same location exist. Thus, only information about salmon fishing at Kettle Falls and the Dalles can be compared and

¹⁸ See p. 84 of the present work.

¹⁹ See p. 85 of the present work.

²⁰ See pp. 40-5, 93-6 of the present work.

²¹ See pp. 14-29 of the present work.

²² See pp. 88-91 of the present work.

²³ See pp. 4, 71 of the present work.

²⁴ See pp. 17/8, 20, 29-39, 46, 91-3 of the present work.

²⁵ See p. 17/8 of the present work.

verified to any significant degree²⁶. Also, because reports about the same group by different authors were often from very different periods of time, it is not possible to determine historical trends of development of the organization of salmon fishing. The statements by Ross are from about the same time period as the reports on the leadership of weir fishing by Post and Walters' Sinkaietk-informants²⁷.

It cannot be expected that the authors of the 19th century each completely understood and described all that a Salmon-Chief was. In their reports, the visible activities of salmon fishing receive the most attention and most thorough descriptions, although, in addition to Ross, Thompson and Kane both had intimate contact with Indian groups²⁸. Although Kane did not stay at Kettle Falls long, he was able to obtain detailed information about the duties and rights of the leader of salmon fishing operations by personally speaking with this official²⁹. However, it is understandable that the wording of reports from the preceding century is sometimes unclear and gives insufficient information with regard to some questions, above all the social status of the Salmon-Chief. For example, Ross speaks of "principal men" who led the annual weir-fishing activities of the Okanagon. From this wording we cannot deduce whether the leader of weir fishing is a permanent leader of the group, distinguished man of the community, or a salmon fishing specialist that first joined the ranks of the "principal men" when he was selected to fill the role of leader of weir-fishing operations³⁰. However, it can be assumed that Ross would have used the term "chief" to denote a primary permanent leader. Additionally, it should be noted that in the reports of modern authors on the Okanagon and Sinkaietk (=South Okanagon) the limited institutional strength of the salmon fishing organizer becomes obvious³¹.

A special advantage for the analysis of the organization of Indian salmon fishing attempted in this work is that relatively many quantitative details about salmon fishing, which are almost completely absent in descriptions of hunting or gathering activities, can be found, both in modern monographs, as well as sources from the previous century. For some tribes we can find out the number of important salmon fishing spots, the number of Indians gathered at each spot, and the salmon fishing methods used there. Thus, we can get an overview of how frequently certain salmon fishing methods were employed and an idea of which rivers or sections of rivers had more concentrated or decentralized fishing operations³². Multiple reports about the same salmon fishing spot from the same decade but different seasons, giving fluctuating numbers of people, make clear the seasonal nature of salmon fishing, and differences in early, peak, and late season, how long salmon season lasted, and, therefore, the overall importance of salmon fishing³³. The information about average yields allows us to form conclusions about the productivity of fishing, and, in combination with information about the amount of fish preserved and average usage norms, the amount of surplus that was not immediately used³⁴. The number of Indians assembled at a salmon fishing center and the norms of distribution of fish caught with a barrier or net provide important clues regarding the question of surplus. On the basis of certain data related to this question it is, for example, possible to understand the necessity of a regulated daily division of the fish caught under the supervision of a Salmon-Chief. Numbers related to annual

²⁶ See pp. 29-39, 91-3 of the present work.

²⁷ See p. 16 of the present work.

²⁸ See pp. 17, 31 of the present work.

²⁹ See p. 32 of the present work.

³⁰ See p. 17 of the present work.

³¹ See pp. 18-20 of the present work.

³² See pp. 14/5, 22-4, 56-8 of the present work.

³³ See pp. 31-3, 38/9 of the present work.

³⁴ See Tab. 3 (p. 147) of the present work.

fluctuations in natural salmon populations clarify why a responsible party was needed to frequently alter the methods of division depending on the prevailing conditions³⁵. Finally, the number of Indians gathered at a salmon fishing center, makes it clear how much labor was necessary to construct a weir and helps illuminate the scope of the organizational duties of a Salmon-Chief³⁶.

While all of these quantitative details are of the greatest importance for characterizing the function of salmon-fishing organizers and greatly exceed the corresponding information available on hunting and gathering activities, it must be emphasized up front that in most reports on a given salmon fishing center, only limited details are available that never form a complete picture of the length of the season, yields, methods of division, and so forth³⁷. It is understandable that individual details from different authors about salmon fishing at the same place (especially the number of fish caught or the number of Indians present) vary³⁸. They are based on estimates, and, furthermore, pertain to circumstances that could have indeed changed quite a bit from week to week and year to year.

The quantitative information on traditional Indian salmon fishing is complemented to a certain extent by the modern ichthyological academic literature³⁹. In contrast to the wild game and plants once collected by Indian groups, salmon is still important in the modern economy, even though coastal and deep-sea fishing have greatly surpassed river fishing. The ontogeny of Pacific salmon, especially their behavioral changes throughout their life cycles and the differences in ecological adaptations from species to species, remains an important subject of biological research. In the ichthyological literature an array of information is contained that above all else shines a light on the average range of variation in the natural supply of salmon within a given region and during a given season. We get an overview of the natural foundations of the traditional Indian fishing economy when we have more specific details on the geographic distribution of individual salmon species and their different migration times, and examples of the annual fluctuations in salmon numbers or average weights of individual fish. This allows us to distinguish between cyclical and non-cyclical fluctuations and identify irregular inland weather patterns as the cause of major non-cyclical fluctuations. General ideas about the necessity of preserving salmon to make it through bad salmon years or whole groups or individual Indians joining more fortunate neighboring communities to participate in salmon fishing can be developed on the basis of this information. Investigations pertaining to the nutritional value of salmon, and especially the amount of fat lost during spawning, are also informative. They clarify why Indian groups from the coast would move upriver to catch salmon for their winter reserves or trade with interior tribes for dried salmon.

After outlining the topics to be covered in the present work, a few words remain to be said regarding the extent of the ethnographic literature and the structure of this paper. As previously mentioned, no Indian groups of western North America that specialized solely in fishing were included in this study. The focus is on the tribes that Kroeber included in his "Intermediate and Intermountain area"⁴⁰, provided that they had opportunity to fish for salmon in their own or in neighboring waters and provided that there was enough material available on these groups for an analysis of their organization of salmon fishing. These groups include: a variety of Interior Salish tribes (Shuswap, Thompson, Lillooet, Okanagon, Sinkaietk, Sanpoil, Nespelem, Colville, and Flathead), the Kutenai, the Shoshone groups of

³⁵ See pp.35-7 of the present work.

³⁶ See pp. 15, 23/4, 35, 46, 58 of the present work.

³⁷ See pp. 15, 31/2 of the present work.

³⁸ See p. 31 of the present work.

³⁹ See Appendix II of the present work (pp. 128-45).

⁴⁰ KROEBER, 1939, pp. 49-59 and maps 1a, 1b, 6.

the middle reaches of the Snake River, the Pit River Indians (Achomawi and Atsugewi) and the central Californian groups Maidu, Wintu, Patwin, Pomo, and Coastal Yuki. Added to this were the Wishram, the Quinault, several coastal tribes of Oregon (Tillamook, Alsea, and Tolowa) and the Yurok of northwestern California.

In Part II of this work, while discussing salmon fishing by the Okanagon, Sinkaietk, Sanpoil, Nespelem, Colville, Kutenai, Shoshone of the middle reaches of the Snake River, Yurok, Wintu, and Patwin, an overview of the Salmon-Chiefs, including the duties, rights and qualifications of this economic leader, are presented.

Part III offers an analysis of salmon fishing by the remaining groups. Their examples show the social institutions established for management of salmon fishing activities in the absence of special organizers. The realizations reached here expand upon the insights regarding the economic and social prerequisites for the development of Salmon-Chiefs gained in Part II. With the proof that under certain economic and social circumstances there was not always a need for large-scale management of salmon fishing or that people other than Salmon-Chiefs could take over the supervision of salmon fishing activities, the difference from the circumstances under which Salmon-Fishing Organizers developed becomes visible, and the overall problem of the development of special leaders for large-scale food-acquisition operations is, thereby, considered critically from two different angles.

In Appendix II and III all facts are presented that aren't directly included in the analysis of the organization of salmon fishing, but were indispensable as the foundation of this analysis. In Appendix II several important facts about the overall behavior of Pacific salmon species are cited in the most succinct manner⁴¹. They explain, to a large extent, the variable use of certain salmon fishing methods depending on season and location and give important clues about the overall importance of salmon fishing in the economy of the groups discussed. Appendix III focuses especially on the different regions of use of different salmon fishing methods and identifies important prerequisites for their use, with clues about the more individual or more collective nature of salmon fishing depending on geographic and seasonal conditions, clues helpful for evaluating the factors that led, in concrete examples, to the development of Salmon-Chiefs⁴².

⁴¹ See pp. 128-45 of the present work.

⁴² See pp. 146-58 of the present work.

I. ORGANIZATION OF INDIAN SALMON FISHING BY SALMON-CHIEFS

A. Okanagon and Sinkaietk

Familiarity with the distribution of salmon in their former tribal territories is a prerequisite for understanding the organization of salmon fishing by the Okanagon and Sinkaietk (=South-Okanagon).

On the Columbia River there appear to have been only a few important fishing places for the Sinkaietk; we know that near *Brewster* not far from the mouth of the *Okanagon River* and at the mouth itself salmon fishing was widely practiced⁴³. The *Okanagon River* is rich with salmon, with Chinook, Sockeye, and Coho running in it⁴⁴. However, *Okanagon Falls* poses a massive obstacle for the salmon run, at least for the Chinook⁴⁵. This fact, and the lack of salmon in the *Similkameen River*⁴⁶ meant that large stretches of the northern Okanagon territory did not offer any opportunities for salmon fishing. Like other waterfalls at the edges of the salmon's range (Kettle Falls, Spokane Falls, Salmon Falls, and Willamette Falls, among others) *Okanagon falls* was a center of Indian salmon fishing⁴⁷, a main point of Indian trade⁴⁸, and, moreover, according to the Okanagon, the traditional core of their tribal territory⁴⁹. Unfortunately, there aren't any details in the ethnographic literature about salmon fishing at Okanagon Falls.

With the exception of Salmon Creek, none of the tributaries of the Okanagon River have a salmon run⁵⁰. This limitation of salmon fishing opportunities to the main river, and only some sections of it, was of fundamental importance for Indian fishing: weirs could only be set up at a few particularly well-suited places along the river. Post names such places:

"At the present these locations on the river are (1) the rapids just above the head of the island at Monse; (2) rapids about a mile downstream of Malott; (3) rapids just above the head of the island which is about a mile below Omak. These places are used only when the river is at its present low level (summer of 1930). In former times when the river was higher the traps were located elsewhere. There were none between Shell Rock Point and Oroville."⁵¹

Thus, we discover that there were only a few places for weir-fishing in the territory of the Sinkaietk, that below Okanagon Falls for a long stretch there was no center of communal salmon fishing, and that the weirs were set up at different locations depending on variable flow conditions. The last statement is especially valuable: it lets us hypothesize that in Sinkaietk territory there was no permanent ownership of particular weir-fishing locations by certain people or groups, unlike in the case of coastal Oregon tribes. On the other hand, the movement of weirs with the fluctuation of stream flow clearly demonstrates the dependence of weir-fishing on seasonal water-levels. This dependence may have had an especially strong impact on the Sinkaietk, because they built their weirs across the entire width of the Okanagon River⁵².

⁴³ SPIER, 1938, p. 75

⁴⁴ See p. 130 of the present work.

⁴⁵ RAY, 1932, p. 57; SPIER, 1938, pp. 12, 216/7; TEIT, 1930, pp. 198/9.

⁴⁶ SPIER, 1938, pp. 216/7

⁴⁷ TEIT, 1930, pp. 198/9, 247

⁴⁸ TEIT, 1930, p. 250

⁴⁹ TEIT, 1930, pp. 198/9

⁵⁰ SPIER, 1938, pp. 216/7

⁵¹ SPIER, 1938, p. 12

⁵² SPIER, 1938, p. 15

The time of high water flow lasted until the middle of June in the Okanogan River⁵³. Although the Sinkaietk and Okanagon would not likely have been able to fish salmon before then⁵⁴, weir fishing must have already played a significant role for the Sinkaietk by early summer. As on many rivers, spear fishing was concentrated in spring and fall⁵⁵, while the hand net, which was often used in wider rivers during high water in spring and early summer, appeared to be deployed on the Okanogan River only at waterfalls. In Sinkaietk territory the characteristic platforms for spear and net fishing were not used, at least not during salmon season along the Okanogan River⁵⁶. This is surprising and can only be explained by the importance of weir-fishing beginning in early summer, considering that the Sinkaietk definitely did construct platforms for spear fishing of trout along the Okanogan in April and May⁵⁷.

Restriction of summer salmon fishing to just a few weirs resulted in the congregation of large numbers of people at each weir. As the weirs were set up across the full width of the river and, now and then, likely also during high flow, a large number of laborers was certainly advantageous. Although there are no primary records of the numbers of Indians gathered at each weir, Post says in his description of the ceremony celebrating the first salmon caught at a weir that 50-100 men participated⁵⁸. Thus, it can likely be assumed that with each man at least one woman and other family members had come to fish for salmon, and that, therefore, 200 and possibly 300 people were assembled at each weir. For comparison it is noted that the population of the Sinkaietk was never much more than 1,000⁵⁹.

Considering such concentrations of people, the statement that Indians belonging to different traditional groups (local groups or tribes) mixed at the salmon weirs is not surprising. There did not exist any laws that forbade entering neighboring territory to look for food⁶⁰. Seeing as there was no rule that limited the right of use of individually-erected trout-fishing platforms to the builder, there is also no doubt that everyone was free to take up weir fishing wherever they pleased⁶¹. By examining concrete examples, it can be verified that these general conclusions give an accurate representation of the conditions at the time:

According to Walters, the Wenatchi came to Brewster in October to trade and to catch Chum and Coho salmon⁶². Ray writes that Sinkaietk, Sanpoil, Wenatchi, and Lower Fraser Salish gathered near Brewster to catch salmon and trade⁶³. An important place for weir fishing lay on the Okanogan River near Malott, not far from where the town of Okanogan stands today⁶⁴. During salmon season Similkameen, Nespelem, Sanpoil, Chelan, and Kartar met here⁶⁵. While the Kartar-Sinkaietk moved to Malott on the Okanogan River, the Sinkaietk from the Malott area (Konkonelp-Sinkaietk?) moved to the waterfalls in Omak Creek that lay within the boundaries of their territory, but possibly also in Kartar

⁵³ SURFACE WATER SUPPLY OF THE US, 1958, part 12, p. 297

⁵⁴ ROSS, 1849, p. 338; SPIER 1938, p. 11

⁵⁵ SPIER, 1938, pp. 11/2, 18.

⁵⁶ SPIER, 1938, pp. 12, 18

⁵⁷ SPIER, 1938, p. 18

⁵⁸ SPIER, 1938, p. 16

⁵⁹ SPIER, 1938, p. 74

⁶⁰ SPIER, 1938, pp. 11, 22, 26, 74/5, 87, 91. It must be considered, whether the fact that little attention was paid to borders and usage rights in areas where food was available was a sign of a broken down economy, whereby the decimation of the Sinkaietk by epidemics starting in 1780 can be seen as the most important contributing factor (see SPIER, 1938, pp. 73/4). However, it should be noted in this context that many of the reports on the traditional way of life of the Sinkaietk date back to about the year 1800 (see SPIER, 1938, p. 97).

⁶¹ SPIER, 1938, p. 18

⁶² SPIER, 1938, p. 75

⁶³ RAY, 1932, pp. 115/6

⁶⁴ SPIER, 1938, p. 160

⁶⁵ SPIER, 1938, p. 160

territory, to practice communal salmon or trout fishing⁶⁶. The Sinkaietk from the lower section of the Okanogan River (Tukoratum-Sinkaietk) repaired to Twisp, in Methow territory, to participate in weir fishing there⁶⁷. The Methow held a section of the Okanogan River between two Sinkaietk groups as a traditional territory of residence, and one can imagine that this would only have been made possible by an enduring peaceful coexistence of the Methow and Sinkaietk⁶⁸. The Methow of the Okanogan River and the Sinkaietk intermarried, and it was probably family relations—in addition to the different times of arrival of the salmon?—that led to their reciprocal visits to the larger salmon fishing spots⁶⁹.

The strong family ties on both the paternal and maternal side⁷⁰ and relatively common marriage into other intra- and extra-tribal groups⁷¹ meant that Sinkaietk families maintained contact with relatives in their own four local Sinkaietk subgroups, as well as with relatives in the Okanagon, Nespelem, Sanpoil, Methow, and other neighboring tribes⁷². Neither custom nor commitment required that a Sinkaietk remain with the same group he spent the winter with during the food-gathering months⁷³. During the winter months, the organization of local (intratribal) groups had quite a bit of influence on the life of a Sinkaietk: winter villages made up of related families came together in their respective territories under the leadership of a single chief⁷⁴. However, during the root harvest at the beginning of spring this local group structure dissolved immediately, although the Ceremony of the First Vegetables may have led to temporary gatherings of the members of local groups in some places⁷⁵. The great autumn deer hunts were collective efforts. However, one local group probably broke into several smaller hunting parties of related families that frequented separate traditional hunting grounds⁷⁶. In any case, the temporary dissolution of the local group was at its peak during summer fishing.

Within the fragments of local groups at the salmon fishing centers, the so-called “headmen” kept order and dealt with matters of common interest⁷⁷. Indeed, the salmon fishing operation itself required leadership that possessed an overview of everything happening on the river and could reach decisions and give directions quickly and authoritatively.

Ross reports that at Okanagon weir fishing spots, from a group of “principal men,” one or more Indians would become designated supervisors of weir fishing by common consent. Every morning these men divided up the fish that had been caught among everyone present and tended to all the important issues related to salmon fishing by weir. Their activity and authority ended with the salmon fishing season (early October)⁷⁸. From Ross’s few details, one gets the impression that these supervisors had less to do with the construction of the weirs than with the distribution of fish, as if they were more coordinators of the interests of all the Indians from different communities present, rather than weir-

⁶⁶ SPIER, 1938, p. 88

⁶⁷ SPIER 1938, p. 109

⁶⁸ SPIER, 1938, p. 86

⁶⁹ SPIER, 1938, pp. 39, 74

⁷⁰ SPIER, 1938, p. 84

⁷¹ SPIER, 1938, pp. 74/5, 84, 91, 97

⁷² SPIER, 1938, pp. 84, 87, 91

⁷³ SPIER, 1938, pp. 11, 13, 22, 26, 74/5, 84, 87/8, 160

⁷⁴ SPIER, 1938, pp. 11, 87, 146

⁷⁵ SPIER, 1938, pp. 26, 32; One could also say that Sinkaietk groups dissolved when they moved to their winter villages, which were often not very large, especially when looking at the larger mixtures of groups that came together during the summer or even the fall hunts (see CURTIS, VII, 1911, pp. 70/1). However, the composition of the groups that formed at the winter villages was more consistent from year to year.

⁷⁶ SPIER, 1938, pp. 19, 22

⁷⁷ SPIER, 1938, pp. 11, 74, 84, 88, 98

⁷⁸ ROSS, 1849, pp. 338/9

building specialists, and were selected from the circle of principal men for this reason⁷⁹. This conclusion is not at all weakened by the following statement from Walters:

“When various villages are together in the absence of the chief, the headmen decide among themselves who shall direct the communal fishing or hunting.”⁸⁰

Although common consent is not mentioned here and only the “headmen” are involved in selecting the Organizer of Salmon Fishing, it is emphasized that the leader of a communal fishing operation is first selected in summer. However, it is not clear from Walters’ records whether the chosen leader functions merely as a substitute for the local (intratribal?) group-chief; what is probable is that he is chosen from among the ranks of the headmen.

Based on the remarks of Ross and Walters, it can be hypothesized that with the dissolution of the local groups in spring and summer the “principal men” or “headmen” not only led the fragmented groups and represented them in dealings with other groups, but also were active as directors of specific community food gathering efforts and, therefore, perhaps primarily took up a mediatory position in the course of events.

This hypothesis is supported by several observations: equating “principal men” and “headmen” does not at first seem unjustified, as Ross described the “headmen” of the modern Sinkaietk monograph, defined as informal appointed leaders of villages consisting of related people⁸¹, as “principal men,” avoiding the term “chief.” Competence in war was not a requirement for a local group chief⁸² and probably not for a “headman,” either, which demonstrates the organizational and mediatory focus of both these positions, especially with regard to the matters of daily life. Although the local group leaders of the Sinkaietk themselves had the highest say with regard to economic affairs⁸³, they probably had to delegate the practical execution of individual tasks to “headmen” in many cases. They could only attempt to keep hold of the reins, and, in this sense, discussed a Salmon Fishing Organizer’s plans with him and several experienced elders at great length⁸⁴.

The Salmon Fishing Organizer or leader of collective weir fishing is often referred to not only by Walters but also by Post as “headman⁸⁵,” whereby, however, it is not completely clear whether these authors merely wish to emphasize the leadership status—however temporary—of the Salmon Fishing Organizer, or whether they are expressly stating that the leader of a weir fishing operation is actually the permanent representative of a community. This ambiguity is even more regrettable, considering that the Sinkaietk called a “headman,” when defined as leader of a village or local group, “*xa’tu’c*” and “*xato’s*,” when defined as the leader of a hunting team, but it is unknown how they referred to the Salmon Fishing Organizers⁸⁶. We know only that among the Sanpoil they were called “*xa’tu’s*”⁸⁷.

In all this, it is not clearly demonstrated that the Organizers of Salmon Fishing belonged to the “headmen,” when defined as a group of permanent community leaders. In fact, sources can be cited that cast doubt on the validity of this idea.

While, according to Ross and Walters, the leaders of communal fishing operations were first appointed in situ, according to Post they came into power and announced their plans in winter:

⁷⁹ ROSS, 1849, p. 338

⁸⁰ SPIER, 1938, p. 98

⁸¹ SPIER, 1938, p. 98

⁸² SPIER, 1938, p. 95

⁸³ SPIER, 1938, pp. 94/5

⁸⁴ SPIER, 1938, p. 12

⁸⁵ SPIER, 1938, pp. 12/3

⁸⁶ SPIER, 1938, pp. 98, 159

⁸⁷ RAY, 1932, p. 69

“The first step in the building of a weir is the announcement by a man (occasionally a woman) that he would build one at such a time and place. This announcement usually occurred at the winter dance.”⁸⁸

Unlike for the leaders of communal hunts, there is no record of the organizers of weir-construction playing a significant role in shamanic winter ceremonies⁸⁹. However, if the weir fishing announcements at the winter ceremony were not made for the express purpose of giving early notice (before the local groups split up), then perhaps they represent close contact between the Organizers of Salmon Fishing and the realm of the spirits of protection and aid (“guardian spirits”), which were especially active in winter. Perhaps the Indians even considered the urge to make such announcements to come from the guardian spirits, because this would explain the spontaneity with which many weir-construction leaders apparently declared their intentions during the winter ceremony⁹⁰. In any case, the possession of the appropriate guardian spirits was of great, if not decisive importance for the execution of the duties of the Salmon-Fishing Organizer⁹¹. It thereby stands to reason that there were different organizers for fishing and hunting, and that women occasionally took on roles as leaders, in some capacity, of fishing operations⁹². The role of guardian spirits, believed to connect people and animals, in determining a Salmon Fishing Organizer’s potential allows for the presumption that surely not just any “headman” could be considered for the role of Salmon Organizer and that many Organizers probably weren’t permanent leaders of the Sinkaietk. On the other hand, this could also explain the fact that, in the case of the Sinkaietk, the appointment of such economic leaders carried little weight. The position of fishing organizer or hunting leader was not heritable, and it was not always held for life⁹³. Occasionally the power of the guardian spirits failed, and the gathered Indians abandoned this man’s unproductive salmon weir⁹⁴. Frequently, however, the same specialist would lead the construction of a salmon weir year after year⁹⁵.

This statement calls attention to one aspect of the duties of the Salmon Fishing Organizers that should not be overlooked: the technical qualifications of the weir construction leader. Up to this point it has been noted that statements from Ross and Walters don’t indicate that the Salmon Fishing Organizers had any special aptitude for directing the labor involved in the construction of a salmon weir. However, restriction of the responsibilities of Salmon Fishing Organizer to the distribution of fish and negotiations among groups could not have been typical in the majority of cases. It could explain the occasional appointment of “principal men” or “headmen” as Salmon-Fishing Organizers, as Walters certainly believed to be the case. However, based on general experience⁹⁶ and on the example of the neighboring Sanpoil, it can be assumed that in most cases the task of dividing up the caught fish fell to the same Indian that had led the construction of the weir. In fact, Post claims that the construction of weirs was led by certain Sinkaietk that employed individual work parties and occasionally lent a hand themselves⁹⁷, but, unfortunately, neither he nor Walters state that these organizers personally distributed fish or even oversaw the distribution of fish or the delegation of this task to another Indian. However, based on Post’s description of the Ceremony of the First Salmon, one can assume with relative certainty, that the Salmon Fishing Organizer was the one who divided up the first salmon caught at the

⁸⁸ SPIER, 1938, p. 12

⁸⁹ SPIER, 1938, p. 159

⁹⁰ SPIER, 1938, pp. 12, 160

⁹¹ SPIER, 1938, pp. 155, 160

⁹² SPIER, 1938, pp. 12, 19, 87, 159/60

⁹³ SPIER, 1938, p. 87

⁹⁴ SPIER, 1938, p. 160

⁹⁵ SPIER, 1938, pp. 16/7

⁹⁶ See Tab. 1 (pp. 80/1) of the present work.

⁹⁷ SPIER, 1938, p. 13

weir among the men that were present⁹⁸. When combined with the statement from Ross about the distribution of salmon at weirs, even this indirect evidence suggests it was likely that Sinkaietk Salmon Fishing Organizers both led weir construction and oversaw the distribution of the catch. It had to be kept in mind during distribution that a portion of the women were potentially absent from the fishing camp, having gone to higher altitudes for the vegetable harvest⁹⁹.

In summary, despite all the gaps in the ethnographic literature and despite inferences that might be considered a stretch, it can be concluded that the Sinkaietk had special Organizers of Salmon Fishing that led the construction of weirs and very likely oversaw the distribution of the fish caught there. One of the qualifications was possession of the appropriate “guardian spirits.” The status of the Salmon Fishing Organizers was presumably, to a limited extent, institutionally stable. They discussed their plans with the local chiefs. It is possible that some Salmon Fishing Organizers were chiefs themselves, that such leaders occasionally took on the duties of Salmon-Fishing Organizers.

In addition to Salmon-Chiefs the Sinkaietk may also have had Organizers of Trout Fishing, at least the following quote suggests this:

“Michel traced the movement of a winter village when he was about ten years old (circa 1885). The village site was a little above the present town of Okanogan on the river. The village broke up to go to set a big fish net (weir?) at the waterfall on Omak Creek at squiENT, a few miles to the east. A man with salmon power had announced at the winter dance that he would place a net at squiEnt at the proper time. The villagers reached there in the afternoon, most riding, but some walking when their horses were needed for packing. In this season the weather was still chilly, so that fires were laid inside the mat-covered tipis.”¹⁰⁰

For all intents and purposes, the activities described are identical to those involved in the preparation of a salmon weir, but at that early time of year and on Omak Creek it could not have been salmon and must have been an organized trout fishing operation that was intended.

B. Sanpoil and Nespelem

The economy of the Sanpoil and Nespelem along the middle reaches of the Columbia River had many features in common with that of their neighbors directly to the west, the Sinkaietk and Okanogan: for nourishment, fishing, hunting, and gathering vegetables were important, whereby fishing, especially salmon fishing, probably played an even bigger role than it did for the Okanogan and was more important than the other sources of food¹⁰¹. In the annual economic cycle, gathering occurred primarily in the spring, fishing in the summer, and hunting in the fall months. These activities overlapped one another without any large breaks¹⁰². Because their different food sources were so spread out, from April to November the Indian population was almost constantly moving, with the exception of a few weeks

⁹⁸ SPIER, 1938, p. 15. Perhaps at Sinkaietk weirs (or at many of them) there was no division of fish, because the salmon that were trapped at the weir were speared (SPIER, 1938, p. 13; CURTIS, VII, 1911, p. 71) and each spear fisher potentially kept whatever he caught. However, it is possible that even speared salmon were all collected and then distributed.

⁹⁹ SPIER, 1938, p. 17; also see ROSS, 1849, p. 339

¹⁰⁰ SPIER, 1938, p. 88

¹⁰¹ RAY, 1932, pp. 27/8, 57, 77, 97

¹⁰² RAY, 1932, pp. 27/8

for salmon fishing¹⁰³. The winter alliances of the Sanpoil also mostly dissolved during the summer months¹⁰⁴, and tribal borders were frequently crossed¹⁰⁵.

In contrast with the Sinkaietk, the Sanpoil and Nespelem commonly fished for salmon on the Columbia River, dispersing to the following salmon fishing sites directly on the Columbia River during salmon season¹⁰⁶:

a) 100-150 people at the summer spot *nekukt'ci'ptin*; visited by Sanpoil, Nespelem, and Sinkaietk; the relatively large number of outsiders¹⁰⁷ not conducive to the development of salmon fishing methods here, as this summer place also served as the starting point for food acquisition expeditions in the area; the rest of the temporary fishing villages along the Columbia River generally did not have as many people.

b) 100 people at the summer spot *xaimi'saxun*; outstanding salmon fishing spot during peak season (June to August); spear fishing or fishing with nets likely; about half the population of the nearest permanent village, *nspi'lem*, came to *xaimi'saxun* despite the fact that there were waterfalls in *nspi'lem*, as well.

c) 60-70 people in the permanent village *salqu'xuwil*; while 80-90 people (or only 40-60?) went to the summer fishing spot *sklam'tci'n*, the rest of the population remained at the fishing spots near their permanent settlement.

d) 40-60 Indians in the summer fishing camp *sklam'tci'n* (those just mentioned above from *salqu'xuwil*).

e) 20-30 people in the winter village *walwala'skin*; salmon fishing here only during the fall (spearing from canoes, as well as collecting salmon that washed ashore).

f) 40-50 people in the permanent village *na'a'q*; fishing spots nearby.

g) Approximately 100 people at the permanent village *xaxsula'ux*; here there were likely good salmon fishing conditions, otherwise more Indians would have moved to the neighboring fishing center *npui'lux*.

¹⁰³ RAY, 1932, pp. 15-21, 27/8. Toward the end of salmon fishing season, sometimes multiple fishing spots were visited within a short period of time, in an attempt to compensate for the decreasing chances of catching anything (RAY, 1932, pp. 28, 118).

¹⁰⁴ RAY, 1932, pp. 15-22, 27/8

¹⁰⁵ RAY, 1932, pp. 15-21, 60, 70, 115/6

¹⁰⁶ See Ray 1932, pp. 15-19

¹⁰⁷ In the present work, "outsiders" at a salmon fishing spot are defined as Indians that didn't belong to the group in whose traditional tribal territory the fishing spot lay. In some spots "outsiders from other groups" are distinguished from "outsiders from other territories," which is meant to denote the following differences:

a) outsiders from other groups were people that were not only in close contact with the Indians of a given salmon fishing spot during salmon season, but, as members of another sub-tribal group of the same tribe or even—especially at the edges of the salmon range—as members of a different tribe that lived nearby, frequently joined them for other food-acquisition operations, as well.

b) outsiders from other territories included people from communities much farther away, that were only involved in salmon fishing activities at a certain location for a limited period of time, without having regular economic interactions with the Indians that lived there.

To complete the given definitions, it must be said that the number of Indians from other tribes present did not necessarily decrease as the distance from salmon fishing centers increased, but the mixture of people from a given tribe visiting a fishing spot varied more. The accounts of the organization of the temporary salmon fishing camps on the Columbia River Plateau themselves illustrate the difference between outsiders from other groups and outsiders from other territories. The outsiders from other groups arrived at the Sinkaietk salmon fishing centers as closed units with their own camping spots and representation by their leader, while the outsiders from other territories probably participated in fishing and camp life as families or individuals. A temporary consolidation of the closed groups occurred in the sense that their leaders met to hold council (see p. 17 of the present work).

h) Approximately 50 Indians in the summer camp *nxoxogu's*; the rest of the population of the big winter village *xula'lst* that didn't go to *npui'lux*; here possibly mostly fishing with hand nets (due to the eddy nearby).

i) Approximately 80 people in the permanent settlement *snuke'ilt*; a portion of the population went to the Spokane River.

At the nine mentioned salmon fishing spots on the Columbia River about 600 Indians, or, in other words, approximately half of the Sanpoil and Nespelem, fished with spears and nets during peak fishing season. A portion of them must have fished from canoes with spears and dragnets in the fall; in any case, we know this is true for the 30 Indians at the winter settlement *walwala'skin*.

At these nine salmon fishing spots, an average of 40-70 people lived temporarily (the 100 Indians at *nekukt'ci'ptin* and *xaimi'saxun* being exceptions), about 6-12 families each. This number of families may have corresponded to the available number of salmon fishing stations. The use of the constructed canals and platforms that constituted a salmon fishing station was not explicitly limited to one family each, as many spear fishers took turns at them¹⁰⁸, but it should not be forgotten that due to the fluctuating water levels in the Columbia River not all fishing stations could be used at the same time¹⁰⁹. Even when these stations were being shared by a group of Indians, each family kept whatever its own members caught; the fishing spears and hand nets were individually owned¹¹⁰.

In addition to the salmon fishing spots on the Columbia River, there were two large salmon fishing centers on the lower reaches of the two large tributaries, the Nespelem River and the Sanpoil River¹¹¹:

a) *nspi'lem*; here in the summer 100 people or more; despite being near Nespelem falls, 100 Nespelem moved to *xaimi'saxun* during salmon season. The use of large traps and weirs below the falls is likely.

b) A large salmon weir was erected each year on the Sanpoil River near its confluence with the Columbia River. A permanent settlement (*npui'lux*) was located here, which was inhabited by 75 – 100 people in winter, but occupied by approximately 400 people during the summer salmon fishing season. During the salmon season the 400 Indians mentioned did not only stay at this “main weir.” Just a few hundred meters farther up the Sanpoil River they also established multiple small fishing camps, which also had weirs. Two of these five total camps were also important in the fall, one being used only in fall. Individual families moved even farther up the river, undoubtedly using spears and small traps.

Thus, about 500 Indians—not all of them Sanpoil and Nespelem—gathered at the lower reaches of the Nespelem, and, to an even greater extent, the Sanpoil River. They must have fished mostly by weir, meaning people were not only living close together, but working together. The construction of large salmon weirs, rebuilt each year, and, to a certain extent, the fishing operation, were a collective effort.

Ray's monograph on the Sanpoil and Nespelem contains the most thorough description of the duties, status, and qualifications of a Salmon Fishing Organizer in western North America¹¹². Fortunately, it was possible to assemble enough individual details to paint a complete picture of the sphere of influence of the Salmon Fishing Organizer within the community. The various duties of this temporary economic leader appear to be important components of the economic and social fabric of an Indian tribal group whose way of life is, to a large extent, still very traditional.

Ray himself refers to the Salmon Fishing Organizer of the Sanpoil as “Salmon Chief,” and so this term will be used throughout this text.

¹⁰⁸ RAY, 1932, p. 60

¹⁰⁹ RAY, 1932, pp. 58-60

¹¹⁰ RAY, 1932, pp. 60-7

¹¹¹ RAY, 1932, pp. 15, 17/8

¹¹² RAY, 1932, pp. 69-75

The Salmon Chief managed all the fishing activities at a large, communally-built weir¹¹³. He determined the time and the exact location for the construction of a weir and selected the workers. He inspected the materials used and the execution of weir construction work.

However, he did not only direct the construction of the salmon weir, he himself helped with the construction of this barrier.

The duties of the Salmon Chief included appointing men to empty the salmon weirs every morning and every night and naming the Indian who would divide up the catch. This division, under the supervision of the Salmon Chief, provided equal compensation for everyone present at the weir, whether they were local residents or not; the size of the family was also taken into account. The Salmon Chief was awarded a small extra share.

The Salmon Chief had absolute authority as far as weir-fishing was concerned, however, he informed the permanent Chief of his group of his plans. The position of Salmon Chief was formally heritable. However, because possession of appropriate “guardian spirits” was seen as a requirement for taking over the position, a son could turn down the position. In this case, the Salmon Chief would be chosen by a congregation, but Ray does not say anything about who this congregation consisted of.

In general, the most important guardian spirit the Salmon Chief possessed was the “Salmon.” In addition, he could acquire other guardian spirits, be a shaman. If few salmon were caught at a weir, the Salmon Chief appealed to a guardian spirit—presumably the Salmon—to provide a good catch. Occasionally, one of the taboos for women, meant to guarantee a good weir fishing catch, was broken. Then the Salmon Chief would admonish the female transgressor, and make an effort to restore normal relations between salmon and man. If the Salmon Chief was also a shaman, another shaman might attempt to demonstrate his superior power by stopping the salmon run. A showdown between the guardian spirits of the two shamans, the Indians believed, would determine the future success of the salmon fishing operation. The final duty of the Salmon Chief was to lead the Ceremony of the First Salmon, which officially opened a weir for fishing. Before then, the Salmon Chief had to make sure that no one removed any salmon from the weir.

Having already established that the economies of the Sinkaietk and Okanagon, on the one hand, and the Sanpoil and Nespelem, on the other hand, have many features in common, we will now compare and contrast some of the fundamental principles of the organization of salmon fishing in these same tribal groups. Here, also, many similarities will become apparent. At the same time, however, the stronger position of the Salmon Fishing Organizer of the Sanpoil will become obvious.

The diagram on the following page (Fig. 1) shows that the Sinkaietk and Sanpoil communities were led by both permanent and seasonal officials that were largely responsible for the same scope of duties in both tribes. Hereditary chiefs, whose primary job it was to provide for an all-around trouble-free life¹¹⁴, stood at the head of local communities¹¹⁵. “Headmen,” loosely directed by the chiefs, served as informal leaders of splinters of local groups when they traveled away from the chiefs for short or even longer periods of time; the “headmen” took over representation of their people in negotiations¹¹⁶. Outside of the direct influence of the local group chief, the leaders of community food acquisition efforts and the leaders of the winter ceremony also oversaw operations. It might be that the “headmen,” and the Organizers of the Salmon Catch, Deer Hunt, and Winter Ceremony owed their

¹¹³ All of the following information on the Sanpoil Salmon-Chief from RAY, 1932, pp. 69-75.

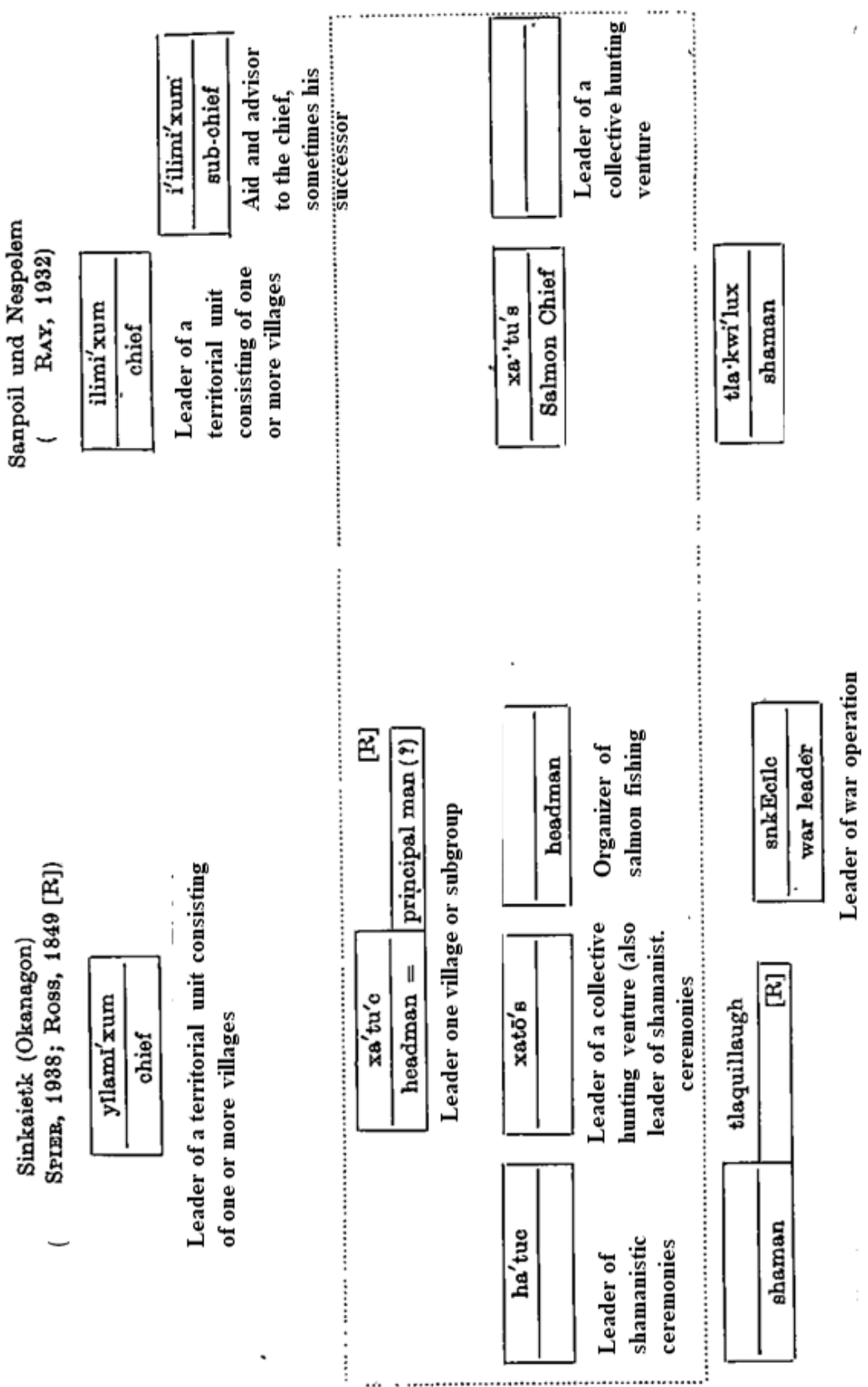
¹¹⁴ RAY, 1932, pp. 25, 27, 109-12; see p. 18 of the present work.

¹¹⁵ According to RAY, autonomous local communities under one leader consisted of individual villages (RAY, 1932, p.109), among the Sinkaietk the autonomous local units seem often to have been made up of multiple villages (SPIER, 1938, pp. 73, 85/6). However, it should be noted that among the Sanpoil smaller villages were occasionally under the authority of leaders of larger, neighboring villages, as well (RAY, 1932, pp. 190/1).

¹¹⁶ RAY, 1932, pp. 18, 97/8, 109, 111; see pp. 17/8 of the present work.

Figure 1

Permanent and temporary Community Leaders of the Sinkaietk and Sanpoil



common name , "xa'tu'c," "xato's," or "xa'tu's", which distinguished them from the local chiefs and the shamans, to their independent management of group activities.

The circle of "leaders" and "organizers" seems to have been less rigidly maintained, as leaders of economic activities and probably also the winter ceremony had to demonstrate a particular aptitude for their position. Even the chiefs did not necessarily possess strong guardian spirits¹¹⁷. The possible overlap in the scope of influence of the Sinkaietk "headmen" and Salmon-Fishing Organizers has already been pointed out¹¹⁸.

Between the Sinkaietk Leaders of the Winter Ceremony and the Leaders of the Deer Hunt, personal unions formed, but it is hard to judge to what degree¹¹⁹. In the eyes of the Indians, the influence of the corresponding guardian spirits was even more important for the success of the hunt than it was for the salmon catch. Sinkaietk shamans may have even led or directed large hunting operations themselves¹²⁰.

In executing their roles, there must not have been any overlap between the Salmon Fishing and Fall Hunting Organizers. A comparison of their duties and their status within their communities shows that both for fishing and hunting they had to employ great knowledge of the natural world and organizational skills for instructing and guiding each of the work or hunting groups¹²¹. A significant difference was that the Salmon Fishing Leaders, unlike the Deer Hunting Leaders, were not in charge of traditional groups of related families¹²², but oversaw temporary alliances between members of different communities. Although the majority of the construction of a salmon weir each year was probably completed by familiar Indians from one particular village, the variable division of the catch reflected the fact that the circle of people at a weir changed, which made the discretion of a universally accepted leader necessary. In contrast, there were rules within a hunting group for the appropriation of a felled deer that largely superseded a controlled division¹²³. Because there were, without a doubt, more hunting groups than significant centers of weir-fishing, it is safe to assume that it was also for this reason that the position of Hunting Leader did not hold the same institutional strength as the position of Salmon Fishing Organizer.

For the most part, the scope of duties of a Salmon Chief and a Salmon Fishing Organizer were the same, but judging by Ray's statements, only the Salmon Chief of the Sanpoil apparently removed himself from the circle of "leaders" and "organizers" and, as a mere intermittent official, acquired a position that, it seems, was neither dependent on the success of the weir fishing operation nor the influence of other community leaders.

Perhaps we are merely dealing with differing perceptions of events, when, according to Post, the Salmon Fishing Organizer of the Sinkaietk had to obtain permission to build a weir from the local group leader¹²⁴, while, according to Ray, the Salmon Chief of the Sanpoil merely informed the local group leader of his plans¹²⁵. However, even considering a possible overemphasis of the dependence of the Salmon Fishing Organizer by Post, the fact remains that a Sinkaietk weir construction leader discussed the details of the planned construction of a weir barrier not only with the local group chief, but also with a group of experienced elders.

The statements by Ross and Walters, according to which, the Okanagon or Sinkaietk decided anew each summer who would supervise and manage the salmon fishing at large weirs, are much more

¹¹⁷ SPIER, 1938, p. 95

¹¹⁸ See pp. 18-21 of the present work.

¹¹⁹ See p. 19 of the present work.

¹²⁰ See SPIER, 1938, pp. 148, 159

¹²¹ See pp. 19/20 of the present work; RAY, 1932, p. 77, 79; SPIER, 1938, p. 19.

¹²² See p. 17 of the present work; RAY, 1932, pp. 77, 79

¹²³ RAY, 1932, p. 92; SPIER, 1938, p. 22

¹²⁴ SPIER, 1938, p. 12

¹²⁵ RAY, 1932, p. 69

important for gauging the social status of the salmon-fishing leaders in both tribes. If this selection was not merely a formality, not a reintroduction of the existing Salmon Fishing Organizers or reconfirmation for the current year, and the wording of the statements by Ross and Walters speak against such an assumption, a clear difference from the status of the Salmon Chiefs of the Sanpoil becomes clear: these Salmon Chiefs remained in their positions long-term and probably until death¹²⁶. Considering that at least some of the Sinkaietk Salmon Fishing Organizers also held their positions long-term as possessors of a proven “salmon power” and, above all, as leaders of the Ceremony of the First Salmon, then there’s still a significant difference in how the position was passed on. While, according to the information about the Sinkaietk, the take-over of guardian spirits—and, thereby included, the takeover of guardian spirits of salmon-fishing—by (younger) relatives was uncommon, Ray affirms that the take-over of certain helpful spirits by close relatives was possible for the Sanpoil¹²⁷. Whether his words “the office was nominally hereditary¹²⁸,” reflected the Indians’ view on the topic or merely his own general impression cannot be said. While this does not prove that the Sanpoil and Nespelem had clearly delineated guidelines rooted in customary law for the succession of the position of Salmon Chief, Ray’s indication that the position and status were often taken over by sons is significant¹²⁹.

A personal union between the Salmon Fishing Organizers and shamans, which cannot be demonstrated for the Sinkaietk, seems to have been not at all uncommon for the Sanpoil¹³⁰. This fact surely contributed to the almost absolute independence of the Salmon Chiefs vis-a-vis the local group chiefs of the Sanpoil¹³¹.

C. Colville (Kettle Falls)

Halfway between the source and the mouth of the Columbia River, approximately 60 km from the Canadian border, where the river gradually spreads out into the open landscape of the plateau, there is a waterfall referred to by fur trappers, missionaries, and travelers as “Kettle Falls” or “La Chaudière.” Only a small number of salmon manage to make it up over the waterfall during their run¹³². Above Kettle Falls the salmon catch drops off significantly, although it stretches all the way to Windermere, B.C.¹³³ Because Kettle Falls is not the only barrier to the salmon run in the eastern region of the plateau¹³⁴, large areas east of Kettle Falls completely lack salmon. Some of these include the historical tribal territory of the Coeur d’Alene, the Pend d’Oreilles or Kalispel, the Flathead, and portions of Kutenai territory¹³⁵.

From the open ocean to Kettle Falls the salmon must travel over 1000 km; the first salmon appear here approximately 6 weeks later than in the lower reaches of the Columbia River¹³⁶. Judging by the timing of the run and weight¹³⁷, the Indian population mainly caught Chinook salmon at Kettle Falls.

¹²⁶ RAY, 1932, p. 71

¹²⁷ RAY, 1932, pp. 71, 175

¹²⁸ RAY, 1932, p. 69

¹²⁹ RAY, 1932, p. 69

¹³⁰ RAY, 1932, p. 71

¹³¹ RAY, 1932, p. 69

¹³² WILKES, 1845, 4, pp. 444/5

¹³³ TURNEY-HIGH, 1941, p. 50

¹³⁴ TEIT, 1930, p. 107; TURNEY-HIGH, 1937, pp. 124/5

¹³⁵ TEIT, 1930, p. 107, 349; TURNEY-HIGH, 1937, p. 125; RAY, 1942, p. 104.

¹³⁶ While in Wishram territory the Ceremony of the First Salmon took place in the middle of April (see SPIER, SAPIR, 1930, p. 249), at Kettle Falls it did not occur until the middle of June (THOMPSON, 1916, pp. 468-70).

¹³⁷ According to KANE the salmon caught at Kettle Falls had an average weight of about 12 kg (KANE, 189, p. 312).

Sockeye salmon do not make it this far¹³⁸ and the fall salmon (Chum and Coho) probably played only a small role in the diet of the Indians of Kettle Falls. Salmon fishing season began in the middle of June, but first seems to have reached its prime in the middle of July; by the middle of August the salmon run had probably begun to slow down, but continued until September or October¹³⁹. During the months of September and October the Kettle Falls Indians collected salmon that had spawned and drifted ashore and dried them for the winter¹⁴⁰. If the natural salmon season was already short compared to regions further downstream, it was cut even shorter by the relatively late root harvest¹⁴¹.

During prime salmon fishing season from the middle of July to the Middle of August the amount of salmon that reached Kettle Falls was large¹⁴², but there must have also been slow years here. The distance from the ocean and the fact that apparently only one or two salmon species reached Kettle Falls would justify this¹⁴³.

According to Wilkes, no more than 150 Indians lived at Kettle Falls year-round, but in the summer up to 1000 people could be counted¹⁴⁴. During salmon fishing season Indians from neighboring territories that lacked waters containing salmon gathered here: Pend d'Oreilles (or Kalispel), and Coeur d'Alene¹⁴⁵. Below Kettle Falls for over 50 km there weren't any other significant salmon fishing centers¹⁴⁶; perhaps this was the reason why even Sanpoil came to Kettle Falls to catch salmon¹⁴⁷. Even Indians from tribes that had good salmon rivers showed up there, like Spokane, Sinkaietk, Okanagon, Methow, and Chelan¹⁴⁸. They probably stayed in Kettle Falls not only to visit with relatives¹⁴⁹ and friends¹⁵⁰, but surely also for the trade that played a significant role here¹⁵¹, just as at other points of gathering for salmon fishing. Kettle Falls, especially before the arrival of horses, lay at the crossroads of important Indian trade routes: A north-south connection went from Kettle Falls north along the Columbia River to Arrow Lake and Revelstoke, and an east-west trade route ran across Kettle Falls and the Pend d'Oreille River¹⁵².

Because the Indian population around Kettle Falls did not offer many furs¹⁵³, a trade settlement (Old Fort Colville of the Hudson Bay Company) was not established in this area until after 1820. Still, Kettle Falls was visited many times before and after that by representatives of the fur trade, religious people, members of scientific expeditions, and travelers who reference it in their records: Thompson (1811), Franchère (1814), Cox (1814), Johnson (1841), De Smet (1845), Kane (1847), Suckley (1853), and Gibbs (before 1854) stayed near Kettle Falls or at Old Fort Colville for days or weeks. They had occasion to observe Indian salmon fishing with their own eyes (Thompson, Johnson, De Smet, Kane)¹⁵⁴ or to hear

¹³⁸ See p. 130 of the present work.

¹³⁹ THOMPSON, 1916, pp. 468-70; WILKES, 1845, 4, pp. 444, 455; DESMET, 1905, II, pp. 480-3; KANE, 1859, pp. 311-3.

¹⁴⁰ WILKES, 1845, 4, p. 446

¹⁴¹ WILKES, 1845, 4, p. 446, 450

¹⁴² KANE, 1859, p. 312; DESMET, 1905, II, p. 483

¹⁴³ See WILKES, 1845, 4, pp. 446

¹⁴⁴ WILKES, 1845, 4, p. 445/6; DESMET, 1905, II, p. 480; SUCKLEY, 1855, p. 299.

¹⁴⁵ TEIT, 1930, p. 349; RAY, 1932, pp. 115/6

¹⁴⁶ RAY, 1932, pp. 19/20

¹⁴⁷ RAY, 1932, pp. 115/6, 119

¹⁴⁸ RAY, 1932, pp. 115/6

¹⁴⁹ TEIT, 1930, p. 215

¹⁵⁰ BANCROFT, 1875, pp. 261/2

¹⁵¹ TEIT, 1930, p. 250

¹⁵² TEIT, 1930, p. 250

¹⁵³ COX, 1832, p. 325

¹⁵⁴ THOMPSON, 1916, pp. 466-71; WILKES, 1845, 4, pp. 438-455; DESMET, 1905, II, pp. 480-3; KANE, 1859, pp. 306-22.

about it (Suckley, Gibbs)¹⁵⁵. However, only De Smet experienced the prime season of salmon fishing from the middle of July to the middle of August in person¹⁵⁶. Thompson and Kane had a very special interest in all things related to salmon-fishing. This is revealed by specific details that could not have come from observations but are evidence of conversations with the Indians and may also have been supplemented by statements from other white men that were familiar with the area¹⁵⁷.

What must have stood out to any observer was the way in which the Indians near Kettle Falls caught salmon¹⁵⁸. Thompson, Johnson, and De Smet followed the Indians as they speared salmon from projections of the riverbank. This was in June, and, according to De Smet, also in July¹⁵⁹. Wilkes, De Smet, Kane, and Gibbs also report that large basket traps were employed to catch salmon¹⁶⁰, but probably only De Smet saw them in action in the second half of July¹⁶¹. The best description of one such basket trap and how it was used is given by Ray in his monograph on the Sanpoil and Nespelem. It is almost certainly based on the testimony of other informants, but it is essentially in agreement with the less detailed observations of authors from the preceding century, that were, however, based more on personal experience¹⁶².

Although different sources give different numbers, we can get a general idea of the daily catch of a large basket trap¹⁶³. There is no clear evidence in the literature that there was always only *one* large basket trap set up near Kettle Falls¹⁶⁴, but in the following analysis, Kane's statement about the use of one basket trap from the middle of July to the middle of August is very significant.

Unfortunately, De Smet did not write anything about the division of the salmon caught in the basket trap; this fact is even more regrettable, because he was the only one of our authors who could have witnessed such a division. This division definitely took place, because it is mentioned not only by Wilkes but also by Kane. Wilkes indicates that during the distribution of the caught fish each evening, not only the people from Kettle Falls, but all of the Indians involved with the catch, and, moreover, all people present, were equally compensated¹⁶⁵. There may have been a certain method for dividing the fish, because Wilkes notes that every family got what they "deserved" ("to each family is allotted the number it may be entitled to"¹⁶⁶), but we don't find out any details. Equally unclear is Wilkes' wording when he writes that the division was under the leadership of a distinguished man of the settlement (... "under the direction of one of the chief men of the village"¹⁶⁷). Still, it is notable that he does not speak of the "Chief," per se.

Kane, with his report on the salmon catch near Kettle Falls, corroborates and significantly expands upon the statements made by De Smet and Wilkes regarding the use of large basket traps. Although it is not clear whether Kane saw the basket traps in action, we get the most complete description of the

¹⁵⁵ SUCKLEY, 1855, p. 299; GIBBS, 1855, p. 413

¹⁵⁶ DESMET, 1905, II, p. 482

¹⁵⁷ THOMPSON, 1916, pp. 468-70; KANE, 1859, pp. 312, 314

¹⁵⁸ THOMPSON, 1916, pp. 468-70; WILKES, 1845, 4, p. 455; DESMET, 1905, II, p. 482

¹⁵⁹ THOMPSON, 1916, pp. 468-70; WILKES, 1845, 4, p. 455; DESMET, 1905, II, p. 482

¹⁶⁰ WILKES, 1845, 4, p. 444; DESMET, 1905, II, p. 482; KANE, 1859, pp. 311/2; GIBBS 1855, p. 413

¹⁶¹ DESMET, 1905, II, p. 482

¹⁶² RAY, 1932, p. 66

¹⁶³ See p. 35 of the present work.

¹⁶⁴ It cannot be determined from WILKES' reports whether one basket or several were used at the same time (WILKES, 1845, 4, p. 444); according to DESMET there was one salmon basket (DESMET, 1905, II, p. 482), according to GIBBS several baskets were in use (GIBBS, 1855, p. 413). Kane notes that each year, in addition to the Salmon-Chief's large trap, smaller traps were used during a certain period of time (KANE, 1859, p. 313).

¹⁶⁵ WILKES, 1845, 4, p. 444

¹⁶⁶ WILKES, 1845, 4, p. 444

¹⁶⁷ WILKES, 1845, 4, p. 444

organization of salmon fishing near Kettle Falls from him. According to his own words, he spoke with the Organizers of Salmon Fishing himself.

The management of salmon fishing near Kettle Falls, according to Kane, was in the hands of one responsible man, the so-called “Salmon-chief¹⁶⁸.” This salmon-chief regulated all matters related to salmon fishing during the summer months, no one could fish near Kettle Falls during this time without his permission¹⁶⁹. He deployed a large basket trap by about the 15th of July¹⁷⁰; for one month—until the middle of August—no other Indian could fish for salmon at Kettle Falls¹⁷¹. It was during this time that the salmon run was at its peak¹⁷², but surely a good catch could still be expected from the middle of August to the middle of September. For these weeks the Salmon-chief allowed free fishing: the Indians fished with small basket traps, spears, and hand nets¹⁷³. The Salmon-chief distributed salmon that had been caught in his basket trap among his people; everyone—even the children—received the same portion¹⁷⁴. The authority of the Salmon-Chief did not extend beyond the fishing center at Kettle Falls¹⁷⁵, but by limiting fishing at this location he ensured that the Indians that lived upstream were not cut off from the salmon run¹⁷⁶. It is very likely that the powers of the Salmon Chief and the permanent leader of the Colville at Kettle Falls were exactly complementary to one another. Kane distinguishes the Salmon-chief, as “Chief of the Waters,” from the permanent leader of the community, as “Chief of the Earth¹⁷⁷.”

In attempting to put together an overview of the duties, rights, and social status of the Salmon-chief at Kettle Falls via a critical analysis of all the reports of the previous century and the limited information from modern monographs, one must consider each of the following:

- a) The Salmon-Chief as organizer of all salmon fishing at Kettle Falls
- b) The Salmon-Chief as leader of a very technologically-specialized operation
- c) The Salmon-Chief as owner of a special salmon-fishing apparatus and the distribution of the salmon caught under his supervision
- d) The scope of responsibility of the Salmon-Chief, his relationship with the permanent leader of the community
- e) Thoughts on how old the practice of fishing with large basket traps at Kettle Falls is

Regarding a) David Thompson only missed the Ceremony of the First Salmon at Kettle Falls by five days in 1811. As he arrived there on June 19th he observed that only one Indian was fishing. He speared only a few salmon each day, which were probably divided up between all who were present¹⁷⁸. During his stay until July 2nd, Thompson found out there were important taboos surrounding salmon fishing: none of the remains of caught fish (scales, entrails, blood) were allowed to come into contact with the river. If a salmon broke free from the spear and made it back into the water, fishing would end for the day. Once, when the spear fisher came near a dog skull, he had to undergo a cleansing with his spear¹⁷⁹. These rules for carefully handling fish, especially during early salmon season, had many parallels in western North America; they were intended to guarantee the success of the salmon run the following

¹⁶⁸ KANE, 1859, p. 311

¹⁶⁹ KANE, 1859, p. 311

¹⁷⁰ KANE, 1859, p. 311-313

¹⁷¹ KANE, 1859, p. 311

¹⁷² KANE, 1859, p. 312/3

¹⁷³ KANE, 1859, p. 313

¹⁷⁴ KANE, 1859, p. 312

¹⁷⁵ KANE, 1859, p. 312

¹⁷⁶ KANE, 1859, p. 314

¹⁷⁷ KANE, 1859, p. 309

¹⁷⁸ THOMPSON, 1916, pp. 468-70

¹⁷⁹ THOMPSON, 1916, pp. 468-70

year¹⁸⁰. It is not unlikely that the entire tightly-regulated salmon-fishing complex at Kettle Falls was already under the leadership of the appointed man during this pre-season. The Salmon-Chief may have been in control—the example of the neighboring Sanpoil and Nespelem would not speak against such an assumption¹⁸¹—but it is also possible that permanent officials carried the responsibility, because Bancroft, who, by all means, knew of the traditional existence of a Salmon-Chief at Kettle Falls, mentions the appearance of shamans in the pre-season to bring a good salmon run¹⁸².

Regarding b) the annual construction of a large basket trap for salmon fishing can certainly not be compared with the many technical and organizational tasks that had to be completed under the leadership and control of a Salmon-Chief to construct a large weir¹⁸³. The basket traps surely did not have to be rebuilt from scratch every year, and not very many people were required to secure them at the waterfalls or operate them. However, these duties, without question, had to be performed by specialists that could coordinate well with each other¹⁸⁴. Whether the Salmon Chief from Kettle Falls himself was one of them and took part in the construction of the salmon basket cannot be deduced from our sources. However, the fact that Kane called the Salmon-Chief the “owner¹⁸⁵” of an especially large basket trap suggests that the Salmon-Chief could be counted among the salmon-fishing specialists at Kettle Falls.

Regarding c) Kane speaks explicitly of a very close relationship between the large basket traps and the Salmon Chiefs of Kettle Falls¹⁸⁶. However, a general knowledge of the laws of the Plateau and Oregon Indians with regard to ownership of their main instruments and means of production warns us not to take Kane’s words too literally¹⁸⁷. A statement found in older literature about individual ownership rights discusses both exclusive use by one person or a small circle of people and the supervision and management in the interest of a community. In the case at hand, that of the large salmon basket, when attempting to clarify the relationship between the rights of the Salmon-Chief and the potential rights of the rest of the Indians, one only has two reported facts to go on: the exclusive use of the large salmon traps for a month and the division of the fish caught therein.

While it appears comprehensible that from the 15th of June to the middle of July only a few salmon were caught, it is hard to see why during the main salmon season from the 15th of July to the middle of August only one basket trap was allowed to be in operation. At this time the salmon run could hardly have been harmed by premature deployment of a larger fishing apparatus, and the relatively late root harvest season had ended, meaning the women were available for the labor of preserving. The possibility that the Salmon Chief was still assessing the strength of the salmon run in the middle of July is also largely unlikely. The only thing left to consider is whether the water level by the middle of August did not allow for the deployment of more traps or whether there was concern about interfering with the salmon catch of groups upstream. However, the peak water flow in the Columbia River did not completely subside between July 15th and the middle of August¹⁸⁸. With regard to taking other groups into consideration, one can glean from Kane’s reports that the Colville from Kettle Falls probably limited

¹⁸⁰ MCILWRAITH, 1948, I, pp. 77, 762; GIFFORD, 1949, p. 81; KROEBER, BARRETT, 1960, p. 6

¹⁸¹ RAY, 1932, p. 70

¹⁸² BANCROFT, 1875, p. 262

¹⁸³ See pp. 20, 24, 43, 59/60 of the present work.

¹⁸⁴ The variety of special technical tasks that had to be completed during construction, maintenance, and use of the large salmon trap supports this (see RAY, 1932, p. 66).

¹⁸⁵ KANE, 1859, pp. 311/2

¹⁸⁶ KANE, 1859, pp. 311/2

¹⁸⁷ See pp. 71-3, 85/6 of the present work.

¹⁸⁸ SURFACE WATER SUPPLY OF THE UNITED STATES, 1958, Part 14, p. 77

their salmon fishing season temporally, so that after their fishing season enough salmon could still make it upstream¹⁸⁹.

Because, according to all of this, restriction of the salmon catch to one trap during the second half of July and the first half of August does not seem to have been due to natural conditions, the question of economic or social motives for this behavior is raised. In attempting to answer this question, considering the quantitative information at hand, it must be determined whether the restriction of the salmon catch to one basket brought significant economic advantages with it or not and whether the use of only one basket for a whole month could be afforded.

During this period of fishing with the large basket trap almost 1000 people were at Kettle Falls¹⁹⁰. In addition to the 20-30 Colville families that lived here year-round¹⁹¹, 100-120 families from the local area, mostly Colville and Lake Indians, gathered¹⁹². Furthermore, it can be expected that about 60 to 100 families from the greater region, for example Coeur d'Alene, Sanpoil, or Okanagon, each sent two or three members to Kettle Falls, while the old people, the children, and some of the women stayed home¹⁹³. Therefore, in total, about 200-250 families were represented by about 900 people. The rest of the Indians may have been men that came without their families to trade, gamble, or look for brides at Kettle Falls¹⁹⁴.

The information from different sources about large basket trap catch numbers varies widely. As this could be due to the fluctuation of the salmon run from week to week and year to year, it's not accurate to use an average of these values for an analysis of the division of the catch. It would be better to use two values: a relatively optimistic estimate of 1000 salmon per day and a less auspicious estimate of 400 fish, whereby the second value, according to Kane, can serve as an average.

Assuming that about 1000 salmon were caught each day and that even children got the same portion, we come up with the following potential division of salmon at Kettle Falls:

120-150 Families of 5-6 people (about 700 people) received 700 salmon
60-100 Families of 2-3 people (about 200 people) received 200 salmon
100 single people received 100 salmon

With 400 salmon caught each day we get the following:

120-150 families of 5-6 people (about 700 people) received 300 salmon
60-100 families of 2-3 people (about 200 people) received 80 salmon
100 single people received 20 salmon

While these two scenarios merely give us upper and lower limits within which the number of salmon may have fallen and merely show certain manners of division that could have been possible, they allow for the formulation of some basic ideas.

Based on 1000 salmon caught per day, each Indian probably received one salmon each. Therefore, a Colville or Lake family could have received five salmon each day and, from 150 fish during the 30 days of deployment of the large basket trap, set aside about 750 kg of salmon for preserving. As this amount of fish largely covered the annual needs of a family¹⁹⁵, a Colville or Lake family could have ensured the necessary minimum of fish for survival during the month of the Salmon-Chief's basket trap alone. However, it is possible that the Indians at Kettle Falls didn't preserve many fish until later, and it is not

¹⁸⁹ KANE, 1859, p. 314

¹⁹⁰ WILKES, 1845, 4, pp. 445/6; DESMET, 1905, II, p. 482; SUCKLEY, 1855, p. 299

¹⁹¹ WILKES, 1845, 4, pp. 445

¹⁹² The "Kettle Falls tribe" seems to have included approximately 500 Indians (see KANE, 1859, p. 309; SUCKLEY, 1855, p. 299; GIBBS, 1855, p. 413).

¹⁹³ See p. 30 of the present work.

¹⁹⁴ See p. 30 of the present work.

¹⁹⁵ See pp. 142/3 of the present work.

clear how many salmon, beyond what they personally needed, they dried for trade. In any case, a significant surplus was available, and even the families of neighboring groups received 200 to 250 kg of salmon beyond what was used at Kettle Falls during the 30 days. This was, therefore, an incentive to go to Kettle Falls, even if they didn't necessarily have to due to a lack of salmon in their own region.

Based on 400 salmon caught per day, the Colville and Lake families still would have had a surplus of salmon beyond what they needed for immediate use (about 150 to 200 kg). It is, therefore, clear that the division of fish from the Salmon-Chief's basket covered the dietary requirements of all of the Indians gathered at Kettle Falls, and that, under favorable conditions, they ended up with an appreciable amount of salmon beyond what they immediately used, whereby the "resident" Colville and Lake Indians benefitted the most from the per-capita division. It is plausible that with below-average yields, especially for a longer period of time, a controlled distribution of fish became necessary, which may have required changing the rules of distribution multiple times, in order to do right by all interested parties. On the other hand, the fixed policy of the use of just one salmon trap would not likely have developed if there had been many bad catches. It is, however, not wrong to assume that this policy represented both a safeguarding of the nourishment of all people present at Kettle Falls as well as an emphasis of the special rights of the "local" Colville and Lake Indians. The Salmon Chief maintained a balance between the two groups, the locals and the seasonal guests, via different and varying methods of division; he was the guarantor for the fair compensation of all Indians present, and he represented the rights of his group as guardian of the most important fishing operation in his region. He served as "provider" for all, as the organizer of the present and long-term means of subsistence. The question raised above, regarding potential economic and social motives for a restriction of the salmon catch to one large basket trap, could thus be answered that via this restriction created the Salmon Chief's authoritative position of "provider" or at least strengthened it.

According to the given upper and lower estimates, it is possible that the Salmon Chief, under normal and, moreover, favorable circumstances, kept an extra portion of the catch from the basket trap, but there are no indications of this in the literature. In any case, a large bonus could only be set aside if there was a relatively large catch, as compensation for the Salmon-Chief's applied knowledge and accomplishments¹⁹⁶.

Regarding d) While the authority of the Salmon Chief from Kettle Falls was extensive when it came to matters related to salmon-fishing, it was restricted to this. A comparison with the Salmon Chief of the neighboring Sanpoil confirms this¹⁹⁷, as does a statement by Kane about the punishment of short-tempered gamblers: the permanent leader could confiscate the community salmon these people had received from the Salmon-Chief¹⁹⁸.

If the authority of the Salmon Chief was restricted to certain affairs and certain time periods, it was also limited to a certain location. Even an Indian fishing camp about 10 km downstream from Kettle Falls was already outside the jurisdiction of the Salmon Chief; these Colville's did not receive any of the salmon caught at Kettle Falls¹⁹⁹.

Without a doubt, the status of the Kettle Falls Salmon Chief was institutionally stabilized. The pair of terms "Chief of the Earth" and "Chief of the Waters" (=Salmon Chief) suggest this, whereby Kane's quotation marks are potentially intended to express that these are not his own invention, but were taken directly from the Colville language²⁰⁰. Unfortunately, we don't know whether the Kettle Falls Salmon Chief was appointed or elected each year, or at longer intervals, or whether he held this position

¹⁹⁶ See RAY, 1932, p. 70

¹⁹⁷ RAY, 1932, pp. 69-71

¹⁹⁸ KANE, 1859, p. 309

¹⁹⁹ KANE, 1859, p. 312

²⁰⁰ KANE, 1859, p. 309

more permanently. Most of the reports discussed so far put the Kettle Falls Salmon Chief near the same position as the Salmon Chief of the Sanpoil, who held his position more permanently and, thereby, probably differed from the less powerful Salmon Fishing Organizers of the Okanagon and Sinkaietk²⁰¹. However, there is no direct statement regarding this point by any of the authors that wrote about Kettle Falls, and the indirect evidence does not get us far. Kane states that the Colville from Kettle Falls are ruled by two leaders (“are governed”), by the “Chief of the Earth,” *Allam-mak-hum Stole-luch*, and by the “Chief of the Waters,” *See-pays*²⁰², which might suggest a more long-term occupation of both of these positions by certain Indians. However, it is only confirmed for *Allam-mak-hum Stole-luch* that we are dealing with a historically tangible Indian personality who is also named by Teit as leader of the Colville from Kettle Falls (1850)²⁰³. While in this case even the first part of the name given by Kane, *Allam-mak-hum*, requires some interpretation to be understood as an official title (*Allam-mak-hum = illimixum = chief*)²⁰⁴, the question is raised whether by the term *See-pays* a particular person is meant or merely the general term for the Salmon-chief. Still, Kane also says: “The other chief is called *See-pays*, the ‘Chief of the Waters’²⁰⁵,’...” Perhaps the first syllable, “*see*,” is related to the Colville word for water, “*si-ul-ku*” or “*si-ul-ko*”²⁰⁶, while the second syllable, “*pays*,” stems from an ethnonym for the Colville of Kettle Falls, written by Kane as “*Chualpays*”²⁰⁷.

Regarding e) The question of how old the practice of organized salmon-fishing at Kettle Falls is stems from the fact that the first “white people” that mention this topic, do not report the use of any large basket traps: neither Thompson nor Franchère or Cox make any reference to them. However, their silence does not by any means mean that large salmon traps could not have been in use at that time. Franchère came a season too early (at the end of April) to Kettle Falls, to observe the use of a large basket trap²⁰⁸, and Thompson also came a bit too early (the middle of June to the beginning of July)²⁰⁹, while Cox, in contrast, was perhaps a few weeks or days too late (end of August/September)²¹⁰. Neither in 1811 nor in 1814 was there a trade or missionary settlement near Kettle Falls. Thus, none of the three authors could get reports on Indian fishing from resident merchants or missionaries. It does give cause for concern that in the spring of 1814 Franchère came across starving Indians²¹¹. Shouldn’t they have been able to put up a large stockpile of salmon? However, the statement by Cox from fall of the same year shows that the people from Kettle falls both caught and preserved a great deal of salmon²¹². Perhaps 1813 was just a bad year for salmon.

The self-given name of Indians from Kettle Falls that appears in the writings of Lewis and Clark (“*Whe-el-po*”)²¹³ and Thompson (“*Ilthkoyape*”)²¹⁴ may constitute evidence for the use of large basket traps at the time of the first explorations of the Plateau region by whites and also before. This means,

²⁰¹ See pp. 17-21 of the present work.

²⁰² KANE, 1859, p. 309

²⁰³ TEIT, 1930, p. 270

²⁰⁴ GIBBS, 1876, pp. 254/5, RAY, 1932, p. 109, TURNEY-HIGH, 1937, p. 153; SPIER, 1938, p. 97; HALE, 1846, p. 852

²⁰⁵ KANE, 1859, p. 311

²⁰⁶ GIBBS, 1876, p. 257. The syllable “*see*”(=“*si*”) also appears in the word for salmon, which is similar to the word for water; *Colville*: *n’shi-ul-twu* (GIBBS, 1876, p. 261), *n-si-ulq* (fish; CURTIS, VII, 1911, p. 180) *Spokan*: *si-mu-hlich* (CURTIS, VII, 1911, p. 181), *Sanpoil*: *anasi-ulku* (RAY, 1932, p. 57), *Okanagon*: *in-se-ul’kw* (GIBBS, 1876, p. 260).

²⁰⁷ KANE, 1859, p. 309

²⁰⁸ FRANCHERE, 1854, p. 279

²⁰⁹ THOMPSON, 1916, pp. 466-71

²¹⁰ COX, 1832, p. 325

²¹¹ FRANCHERE, 1854, p. 279

²¹² COX, 1832, p. 325

²¹³ GIBBS, 1855, p. 417

²¹⁴ THOMPSON, 1916, pp. 466/7

according to I. A. Meyers²¹⁵ and Wilkes²¹⁶, “basket people,” and would, thereby, bear testimony of pre-European development of salmon-fishing with basket traps at Kettle Falls. However, the ethnonym has alternatively been interpreted to refer not to the salmon baskets, but to the form of the falls²¹⁷.

In light of all of this, it should not be forgotten that basket traps of the type used at Kettle Falls were also used by the Sanpoil and Nespelem, and by the Spokane, Wenatchi, Chilcotin, and Carrier to catch salmon²¹⁸. This wide distribution clearly suggests Indian development of these very productive fishing apparatuses, whose use, however, was limited to certain locations at waterfalls.

Summarizing the given facts and speculations produces the following generalized outline of the organization of salmon fishing at Kettle Falls:

There is no doubt that the salmon-fishing and trade center at Kettle Falls got its importance from its especially favorable natural conditions for salmon fishing and, moreover, for the use of large basket traps. The technical and organizational management of fishing with this large-scale equipment and especially the division of the fish caught therein was in the hands of a responsible official, the Salmon Chief (“*Salmon-Chief*,” “*Chief of the Waters*”). During salmon season at Kettle Falls he possessed unlimited authority in all matters related to salmon fishing. This authority was probably reinforced—especially in the face of the large number of outsiders present—by the exclusive use of just one basket trap during the peak salmon run. The operation of this basket trap and the division of the salmon caught therein fell under the direct authority of the Salmon Chief, so much so that it appeared this official may have had a fixed legal right to the basket trap and, in Kane’s report, the Salmon-Chief was referred to as “owner” of the large salmon basket. However, it is not clear whether the Kettle Falls Salmon-Chief—whether it be as compensation for his work or an extra portion of the catch due to his potential usage right to the large basket trap—had any special economic privileges.

D. Kutenai

By Turney-High’s estimates, salmon fishing did not play a decisive role in the economy of the Kutenai; it took second place to trout fishing. It should, however, also be noted that the Upper Kutenai fished more salmon than the Lower Kutenai²¹⁹.

The territory of the Kutenai only included a few places with salmon runs worth mentioning; the Lower Kutenai traveled all the way to the headwaters of the Columbia River to fish salmon and had confrontations with the Indians at Arrow Lake, which, however, suggests that they wished to acquire rights to salmon-fishing spots²²⁰. Participation of Kutenai in the salmon fishing operations of neighboring Salish groups, like the Lake Indians or Colville, probably never occurred on a large scale, as they and the Kutenai were enemies for a long time²²¹.

Turney-High only reports on one salmon fishing method of the Kutenai, night-time spear-fishing from canoes²²². Perhaps this method was developed specially to work for the late natural salmon

²¹⁵ THOMPSON, 1916, pp. 467

²¹⁶ WILKES, 1845, p. 444

²¹⁷ TEIT, 1930, p. 201

²¹⁸ RAY, 1940, p. 108; also see CURTIS, VII, p. 71 and HILL-TOUT, 1907, p. 93

²¹⁹ TURNEY-HIGH, 1941, p. 51; see CHAMBERLAIN, 1893, pp. 564/5 and CHAMBLERAIN, 1906, p. 183.

²²⁰ TEIT, 1930, p. 258. HENRY, 1897, II, p. 708 reports on the lack of fat of the salmon in the Kutenai River after the long migration to the spawning grounds.

²²¹ TURNEY-HIGH, 1941, p. 30-2

²²² TURNEY-HIGH, 1941, p. 50; BOAS adds a Kutenai story, according to which salmon were also caught in weirs (BOAS, 1918, pp. 177-9).

season; it certainly produced respectable yields²²³. There was by no means any kind of cooperation here, and, in all likelihood, no need for centralized management of the salmon catch.

Kutenai trout fishing, in order to adapt to different natural landforms on the river, adapt to seasonal water levels and the behavior of the fish, required the use of diverse fishing tools, and led to various methods of dividing the labor, ownership of tools, distribution of the catch, and management of operations.

For both the Upper Kutenai and the Lower Kutenai the spring catch was especially important. While among the Upper Kutenai fishing was carried out by smaller work groups, each made up of one or two families, the Lower Kutenai seem to have formed larger, temporary groups that worked together to catch trout. The individual small work groups of the Upper Kutenai were not directed, during fishing itself, by a supervisor, however the distribution of the trout they caught among the whole community, in other words, also to other families that did not take part in trout fishing, was regulated by the decisive arbitration of a leader. Among the Lower Kutenai, all spring trout fishing operations were coordinated by a responsible specialist, the technical execution was directed and the division of the caught fish was overseen by him.

a) Spring trout-fishing of the Upper Kutenai

In spring, no other form of procuring nourishment could compete with fishing. The winter bison hunts did not overlap with trout season in early spring²²⁴. Because the trout migrate to the upper reaches in spring to spawn, weirs and fish fences could be very successfully employed for trout fishing²²⁵. In the relatively flat portions of the river in Kutenai territory, it required the work of only one or two families to construct a fish fence or weir at a suitable location²²⁶. Thus, it was usually one or two families that built their weir with their trap for trout fishing. In accordance with a law observed across the entire Columbia River Plateau, the yield of personal efforts generally belonged to whoever had done the work, but the weir builder also had a claim to the caught trout.²²⁷ Turney-High draws attention to the fact that this claim clashed with the rights of others. Every family that had constructed a weir had to give up a predetermined portion of their catch, or a tax, to certain other families²²⁸. Turney-High names two reasons for this rule: the communal ownership of all-natural sources of nourishment in the territory by all members of the tribe required it, and also the fact that there just weren't enough fishing spots for every family²²⁹. While the first reason seems to stem from a misinterpretation or exaggeration on the part of Turney-High, the second reason could have been very important. There were surely—like all over in the Plateau region—only a limited number of places suitable for weir fishing; it must also be considered that the use of too many weirs could have lowered the yields at each individual weir. What's more, trout fishing with barriers could only have been practical for a short period of time—during the spawning migration—but the number of fish caught at the weirs was large and was more than that needed for immediate use by the builder of a weir or fish fence²³⁰. Therefore, the obligation to give up a portion of one's catch, or a tax, to other families, stemmed less from a recognition of equal rights to use of tribal territory, its waters and fish, by weir-fishing families, and much more from the need to make the caught fish available to all members of the tribe by distributing them. In early spring the need for freshly caught and very nutritiously-dense trout must have been great.

²²³ TURNEY-HIGH, 1941, p. 50

²²⁴ TURNEY-HIGH, 1941, p. 54/5

²²⁵ TURNEY-HIGH, 1941, p. 50

²²⁶ TURNEY-HIGH, 1941, p. 46/7

²²⁷ TURNEY-HIGH, 1941, p. 47

²²⁸ TURNEY-HIGH, 1941, p. 47

²²⁹ TURNEY-HIGH, 1941, p. 47, 52

²³⁰ TURNEY-HIGH, 1941, p. 52

Management of the use of trout weirs and determination of the amount of the tax fell to the command of a permanent leader of the community²³¹. He gave permission to practice weir fishing at a given location, announced when the weirs should be set up, and determined the group of people fish would be given to. This leader, like the Salmon-Chiefs of the Interior Salish tribes, was responsible for equal provision of the whole population with fish. While he did not conduct a daily division of fish at a large—communally built—weir, he still determined how all the fish caught at the individual trout weirs during the season would be distributed.

This leader, according to Turney-High, was not a political representative of a community, but an official, a “Guide Chief”—as Turney-High refers to him—that, with a detailed knowledge of the land and all its potential had to organize and lead all daily activities, not the least of which being acquisition of food (for the Upper Kutenai weir fishing as well as bison hunting, during which time he was assisted by a “Hunting Chief”)²³². To a large extent the “Guide Chief” of the Upper Kutenai had the same duties as the local group leaders of many Interior Salish tribes, and it is plausible that the “War Chief” first became the highest-ranking leader in the community when buffalo hunting with horses began.

Regarding Turney-High’s claim that the weir-fisher, despite all the “taxes” he had to pay, kept the lion’s share of the catch²³³, several comments and speculations should be added. This claim to an especially large portion of the catch can be viewed as compensation for the work performed, it could derive from the use of family-owned traps for weir-fishing, or it could also be hypothesized to be an incentive for the weir fisher. Although it is not unlikely that such an incentive was determined by the weir fisher’s own personal group, the question remains whether the “Guide Chief” delegated the right of use of fishing spots to different groups of people every year—or at some other interval—in order to even out the distribution of the work and the extra portion of the catch. When attempting to answer this question, one must remember that after the arrival of Europeans the Upper Kutenai were not first and foremost trout fishermen but bison hunters, and it’s completely possible that families with the technical knowledge necessary for the construction of even small weirs and ownership of traps that were used again and again became specialized in weir-fishing. It is plausible that this included, above all, families that did not own many horses and, therefore, possessed slim chances of a successful hunt on the plains, or perhaps were less capable or suited for the move to the region east of the Rocky Mountains made dangerous by the Blackfeet Indians.

b) Spring Trout-fishing of the Lower Kutenai

Spring trout-fishing was a communal undertaking for the Lower Kutenai. This cooperation was probably a result of the local and seasonal conditions, as Turney-High describes:

“While the Kootenay River often cuts through deep gorges and traverses falls of some impressiveness, the lower reaches of the stream are characterized by valleys several miles wide and filled with flat meadows from mountain to mountain. The river, flowing through high mountains with heavy winter snows, is subject to very high spring floods. These flat meadows are therefore annually dotted with a vast number of sloughs and ponds. The water stays in these ponds from one to two months. During this time the river fishes enter the ponds to feed on the grasses and mosses.”²³⁴

When the water receded in the summer, and with it the fish, barriers were built at the outlets of the flood ponds²³⁵.

It must have been the length of the barriers that made a communal effort necessary. As organizer of this undertaking, a temporary leader emerged, the so-called “Fishing Chief.” He observed the retreat of

²³¹ TURNEY-HIGH, 1941, p. 47

²³² TURNEY-HIGH, 1941, p. 148

²³³ TURNEY-HIGH, 1941, p. 47

²³⁴ TURNEY-HIGH, 1941, p. 44

²³⁵ TURNEY-HIGH, 1941, p. 48/9

the floodwaters in the valleys and determined, based on this, the time to begin weir construction²³⁶. He led the weir construction work²³⁷. He must have managed multiple operations simultaneously²³⁸.

The Kutenai followed the receding waters by building barriers further and further downstream throughout the course of a season:

“They began by fishing the upper reaches of their range, moving farther and farther downstream as the recession continued.”²³⁹

It’s understandable, considering the repeated relocation of the fishing spots and the changing natural conditions, that a specialist emerged for the direction and coordination of all these tasks.

The Fishing Chief inspected the traps embedded in the weirs each evening, determined the number of fish therein, and, based on this, determined the number of men and canoes necessary to transport them to the settlement²⁴⁰. The captured fish were laid out in front of the Fishing Chief’s tent and divided up:

“When the Fishing Chief, or some principal man deputized by him, returned from emptying the traps, he filled his own basket as a measure and gave this to the first lodge in the camp circle, the same to the next, and so on until the fish had been evenly distributed. Should the supply not come out evenly, the chief would note where he left off and begin his distribution at that spot the next day. Should any strangers move into the camp, they received the same share as if they were residents. They had only to assume a position at the end of the camp circle. This procedure was continued throughout the much longer Lower Kutenai season.”²⁴¹

The presence of “outsiders” during the division of the fish, was not a coincidence, as Turney-High notes explicitly in another spot:

“As the Upper Kutenai invited the Lower bands to hunt with them on the Plains, so the chiefs of the Lower bands returned the hospitality by sending up word inviting the Upper folk to join them in weir fishing.”²⁴²

While the Lower Kutenai only joined the Upper Kutenai in small groups for the bison hunt, in addition to communal spring and summer fishing, they also joined them for communal hunting of waterfowl and deer in the fall²⁴³. These activities were also led by specialists.²⁴⁴ A comparison of Turney-High’s information about their duties and rights with the preceding analysis of the leaders of collective weir-fishing of trout by the Lower Kutenai reveals that fishing, duck hunting, and deer hunting were distinguished by many common features: seasonally-limited appearance of the food, accrual of the food in large amounts (mass-accrual), preservation (?), communal efforts to acquire the food, leadership by a specialist that was himself a distinguished hunter or fisher and was familiar with both the habits of the wild game and fish as well as the conditions of the land, division of the catch among all member of the community, and inviting strangers to join²⁴⁵.

The collective use of three sources of food demonstrates the complex character of the procurement of food of the Lower Kutenai in contrast to the all-important role of the bison hunt for the Upper Kutenai, who fished and hunted deer individually. The organization of each of the important branches of

²³⁶ TURNEY-HIGH, 1941, p. 44

²³⁷ TURNEY-HIGH, 1941, p. 48

²³⁸ See TURNEY-HIGH: “Weirs were set across as many outlets as the slough had, ordinarily from three to five” (TURNEY-HIGH, 1941, p. 48).

²³⁹ TURNEY-HIGH, 1941, p. 48

²⁴⁰ TURNEY-HIGH, 1941, p. 49

²⁴¹ TURNEY-HIGH, 1941, p. 53

²⁴² TURNEY-HIGH, 1941, p. 44

²⁴³ TURNEY-HIGH, 1941, p. 36

²⁴⁴ TURNEY-HIGH, 1941, p. 39, 42/3

²⁴⁵ TURNEY-HIGH, 1941, p. 39, 42/3

food-acquisition by a specialist is, at the same time, evidence of the looser political organization of the Lower Kutenai in comparison to the Upper Kutenai, for whom the “Guide Chief” managed both the arrangement of individual trout fishing as well as the preparation for and execution of the bison hunt on the plains to a large extent.

For the Lower Kutenai, the leaders of the communal fishing operation and waterfowl and deer hunts had only a temporary right to influence the economic activity of the group. During the duck hunting season, for example, the “Fishing Chief” was equally as subordinate to the “Duck Chief” as every other member of the community²⁴⁶.

E. Shoshone of the middle reaches of the Snake River and Lemhi River Shoshone

Salmon fishing played an important, if not the most important role in the economic life of the Shoshone of the middle reaches of the Snake River²⁴⁷. Salmon season was probably not significantly shorter than in the Columbia River-Plateau region²⁴⁸. In the months without salmon runs, late fall to spring, the nutritional status of the Shoshone of the middle reaches of the Snake River was very unfavorable. It improved greatly with the arrival of the salmon²⁴⁹. This abrupt annual switch between seasonal surplus and extreme lack of food was somewhat attenuated by potentially being able to preserve a portion of the salmon they caught²⁵⁰. Several Shoshone groups along the Snake River stayed near their salmon stores in winter²⁵¹. The establishment of such stores was likely largely dependent upon possession of horses, as the salmon fishing spots were not always anywhere near winter villages²⁵². The Shoshone and Bannock of the Fort Hall region did not have any salmon in their waters—the salmon run in the Snake River ends at Shoshone Falls. However, having many horses allowed them to travel to regions west of Shoshone Falls to fish or trade for salmon²⁵³. Transporting the fish was not difficult for them. The destinations of these expeditions were the large salmon fishing centers on the Snake River, of which Salmon Falls was the most important. Irving recorded reports from trade merchants about the catch at this vital point of salmon fishing; they refer to the early part of the previous century:

“On the 25th of August they reached a great fishing place, to which they gave the name of the Salmon Falls. Here there is a perpendicular fall of twenty feet on the north side of the river, while on the south side there is a succession of rapids. The salmon are taken here in incredible quantities, as they attempt to shoot the falls. It was now a favorable season, and there were about one hundred lodges of Shoshones busily engaged in killing and drying fish. The salmon began to leap, shortly after sunrise. At this time the Indians swim to the centre of the falls, where some station themselves on rocks, and others stand to their waists in the water, all armed with spears, with which they assail the salmon as they attempt to leap, or fall back exhausted. It is an incessant slaughter, so great is the throng of the fish
....Mr. Miller, in the course of his wanderings, had been at these falls, and had seen several thousand salmon taken in the course of one afternoon.”²⁵⁴

²⁴⁶ TURNEY-HIGH, 1941, p. 153

²⁴⁷ STEWARD, 1938, p. 165

²⁴⁸ STEWARD, 1938, p. 167/8

²⁴⁹ STEWARD, 1938, p. 166/7

²⁵⁰ STEWARD, 1938, p. 165

²⁵¹ STEWARD, 1938, p. 165

²⁵² STEWARD, 1938, p. 165/6; also see pp. 162, 175

²⁵³ STEWARD, 1938, pp. 169, 203

²⁵⁴ IRVING, 1869b, pp. 377/8; see FREMONT, 1845, p. 168

While the fact that Salmon Falls is almost on the edge of the salmon's range and was visited by Indians of neighboring regions that lacked salmon draws a parallel with the salmon fishing center at Kettle Falls, it is also reminiscent of The Dalles²⁵⁵ or Willamette Falls,²⁵⁶ in that fishing spears, in other words, individually-operated tools, are employed. The concentration of at least 300 to 400 Indians at the salmon fishing center at Salmon Falls, which was established due to its equally favorable natural conditions, need not shy away from comparison with the above-mentioned locations. The productivity of fishing here cannot have been significantly lower: in one afternoon approximately 100 to 200 Indians caught "multiple thousands" of salmon. The preservation of the fish is explicitly mentioned in the report of eyewitnesses.

If, at the beginning of the present work, the thesis was presented that the final leg of the salmon run in the Columbia River Plateau Region led to the development of specialized forms of organization of salmon fishing, this also applies to salmon fishing by Shoshone groups at Salmon Falls. Wyeth writes:

"...the paucity of game in this region is, I have little doubt, the cause of the almost entire absence of social organization among its inhabitants; no trace of it is ordinarily seen among them, except during the salmon-times, when a large number of the Snakes resort to the rivers, chiefly to the Fishing Falls (Salmon Falls), and at such places there seems some little organization; some person called a chief usually opens a trade or talk, and occasionally gives directions as to times and modes of fishing; and the same is the case with the bands who go into the buffalo region. Other than this, I have perceived no vestiges of government among them..."²⁵⁷

There is substantial evidence that the above-mentioned leader of salmon fishing was not a "band chief." Wyeth says explicitly: "...some person called a chief usually opens a trade or talk..." (emphasis added). This is reminiscent of the Shoshone custom of naming many temporary leaders of food-acquisition efforts with a "title," that was formed by combining the term for the given food animal with the general term for "leader."²⁵⁸

The leader of salmon fishing at Salmon Falls is compared by Wyeth with the Shoshone Organizers of the Bison Hunt. In fact, both officials emerged only when a larger number of Shoshone of different tribes or tribal subgroups assembled: the western groups moved to the East for the bison hunt and the eastern groups moved to the West to fish salmon. There would have been enough occasions where contact between the two groups required that a temporary leader step up to mediate between all of the parties. He would not only have initiated but also led important negotiations.

It is difficult to say what specific tasks such a leader would have had to complete for the organization of salmon fishing at the salmon fishing center at Salmon Falls. Neither Wyeth nor Irving mention a controlled division of the fish caught. In fact, this probably didn't occur, as, according to Irving's statements, only spear fishing was practiced at Salmon Falls. While spear fishing did not require the same kind of central management for its technical execution as the construction of a salmon weir, it is possible that with the seasonally fluctuating water levels, the best places for spear fishing in summer and fall were different from those in spring, and the Salmon-Fishing organizer of Salmon Falls had to direct the different Indians that were present to use certain salmon fishing stations multiple times throughout the year. Fixed rights of use of particular spear-fishing stations hardly existed at this seasonal meeting place. Perhaps another duty of the Salmon Fishing Organizer was to announce the beginning of different salmon fishing phases of the year. At Salmon Falls, which was toward the end of

²⁵⁵ See p. 92 of the present work.

²⁵⁶ WILKES, 1845, 4, pp. 344/5

²⁵⁷ SCHOOLCRAFT, 1851, part 1, p. 207

²⁵⁸ *Battle Mountain-Shoshone: Kahmudagwani= "jack rabbit chief"*(STEWARD, 1938, p. 163); *Grouse Creek-Shoshone: Kumbidagwani= "ground squirrel chief"= "hunt chief"*(STEWARD, 1938, p. 176); also see p. 50 of the present work (*pangwidagwani= "fish chief"*).

the salmon run in the Snake River, the date of the appearance of the individual salmon runs must have varied somewhat from year to year. One can imagine that news of the arrival of the fish was sent to groups outside of the range of the salmon. Even the Shoshone that lived near Salmon Falls abandoned the Snake River, at least between the second and third salmon runs, to travel to the root-harvesting grounds of Camas Prairie north of the Snake River²⁵⁹. Even if a portion of these Indians did not return to the Snake River—during fall a lot of weir-fishing was practiced²⁶⁰—Irving’s reports testify that in summer and fall a large number of Shoshone reassembled at Salmon Falls. Perhaps they received news of the arrival of the salmon while they were still in the Camas Prairie region.

Just as fishing with hand nets and spears along the Columbia River was mainly at waterfalls and rapids and salmon fishing with weirs was restricted to tributaries²⁶¹, salmon fishing on the Snake River was at centers of hand and spear fishing while barriers were employed on tributaries²⁶². An important point of weir fishing was probably in the territory of the *koa’agai*, a group of the *Northern Paiute*. This ethnonym can be translated to mean “fall salmon eaters” or “salmon weir people.” The meaning remains about the same, as fall salmon were commonly caught with weirs—probably due to the low water levels²⁶³. In the traditional territory of the *koa’agai* between Weiser Creek and Bruneau River²⁶⁴ the Snake River is joined by many small tributaries, that surely provided favorable conditions for the use of weirs. The Shoshone also practiced weir fishing on the tributaries of the middle reaches of the Snake River near Salmon Falls²⁶⁵. While, according to Steward, there were no fixed rights to fishing spots here, the locations along the river and shore that were suitable for weir fishing seem to have each been visited repeatedly by the same group²⁶⁶. As far as the size of these weirs is concerned, they did not compare with those of the Columbia River Plateau region; in most cases they were built by just a few families:

“When a dam or weir was built, . . . , four or five families cooperated in its construction under the direction of a person with the necessary knowledge. The director was called *kuwedagwani*. He was considered to be the owner of the dam. He took the responsibility of visiting the dam to remove the fish from the basket traps and of distributing them among the people who had assisted him. For his trouble he kept the greater share of the catch. Dams and weirs were rebuild [sic] each year. If the director died any other competent person took charge. A single stream often had several dams along it.”²⁶⁷

Despite the fact that at any such weir only four to five families gathered to fish salmon, they did not all necessarily come from the same winter village, as, according to Steward, in the area of Salmon Falls only about three families would overwinter together at one location²⁶⁸. Therefore, the weir fishers were not necessarily in contact with one another during the rest of the year and were not necessarily relatives. Surely, above all, individual families from the local area joined the Indians of one winter village for weir fishing. However, it is also plausible that “foreign” families or groups of families took part in weir fishing. Whether the Shoshone or Bannock of the Fort Hall region came, however, is very questionable. On the one hand, a potential temporal overlap with the bison hunt would have made this difficult, and, on the other hand, the move to centers of salmon fishing (like that at Salmon Falls) was more natural for the

²⁵⁹ STEWARD, 1938, p. 167

²⁶⁰ See p. 49 of the present work.

²⁶¹ See pp. 14, 23/4 of the present work.

²⁶² STEWARD, 1938, p. 268

²⁶³ STEWARD, 1938, p. 168

²⁶⁴ STEWARD, 1941, map 1; However, according to Steward this same territory was occupied by the “*Yahandüka*”(= “*Groundhog Eaters*”)(STEWARD, 1938, p. 172).

²⁶⁵ STEWARD, 1938, p. 167

²⁶⁶ STEWARD, 1938, p. 169

²⁶⁷ STEWARD, 1938, p. 169

²⁶⁸ STEWARD, 1938, p. 171

eastern Shoshone groups with their more fixed political organization. It is hard to imagine that their families would have broken up and spread out across many small weirs. Perhaps the Shoshone of the middle reaches of the Snake River were joined by the Wongogadu from the regions on the border between Idaho and Nevada, whose overall food situation was not very favorable²⁶⁹. It is hard to say why weir fishing was only practiced by small groups. The width and depth of the streams likely did not allow for it to work any other way, so that the individual Shoshone groups preferred to set up multiple weirs one behind the other in a stream. It can be assumed that each of the builders of the weir complexes on a given stream reached agreements with one another.

Steward names the most important person among the builders of a weir with the Shoshone term "*kuwedagwani*," which, when translated literally, can mean "fish fence chief" (*kuwep*=fence, weir; *dagwani*=speaker, chief) or "fall salmon chief" (*kua'agai*=fall salmon, salmon caught with the fish fence, *kwep*)²⁷⁰. A translation of the Shoshone term "*kuwedagwani*" with "weir construction specialist" is preferred to a translation with "weir construction leader," as this "*kuwedagwani*" must have been foremost concerned with technical direction and the guidance of the organization of labor could not have been as important, considering the small number of workers. When Steward says that the weir construction specialist was seen as the "owner" of the barrier, this is probably due to the fact that the *kuwedagwani* was the builder of the barrier, that this apparatus was seen as "his work." Even the division of the fish between families present performed by him fell under the scope of his general responsibility for the salmon fishing at a weir. This division does not necessarily derive from ownership of the spot where the weir was constructed or of the weir itself by the weir construction specialist. Even when Indians from distant communities sometimes took part in weir-fishing, the core of the workers must have been the same for long periods of time, and all Indians present had the right to the same fixed amount of product. The larger portion, which the weir construction specialist took, corresponded to the special amount of work he had performed, his knowledge, and abilities. The weir construction specialist was not a permanent leader of the community, but a man with certain practical knowledge that, under certain circumstances, possessed a certain "power"²⁷¹. Even the rules of succession for weir construction specialists suggest that this position had nothing to do with the duties of a permanent representative of the community, which were in the hands of hereditary leaders²⁷².

While the Shoshone groups on the middle reaches of the Snake River between Shoshone Falls and Bruneau River only had a few horses, not many of them took part in the bison hunts on the plains, and they did not have any kind of large scale political organization²⁷³, the Lemhi (River)-Shoshone had many horses, regularly participated in the hunting expeditions on the Plains, and formed more stable alliances of multiple families under chiefs with a certain authority²⁷⁴. However, this was with one qualification: up until recent times the Indians in the mountain regions along the Lemhi River and the Salmon River lived in small autonomous villages, like the majority of the western Shoshone groups. Steward compares these "mountaineers" (they were called *Tukadueka*, "mountain sheep eaters") with the Lemhi Indians:

"There was a significant difference in the nature and function of chieftainship between the *Tukadueka* and the Lemhi. Prior to consolidation with the Lemhi, the mountain dwellers lacked even formal village chiefs. Instead, a man possessing the necessary qualifications and prestige directed those activities which required supervision. Thus, *Woygowuetavi*, the *degwani* of the village of *Pasasigwana*, did little more than direct fishing. When several related families camped together during the winter and

²⁶⁹ STEWARD, 1938, p. 169

²⁷⁰ See STEWARD, 1938, p. 168

²⁷¹ STEWARD, 1938, p. 171

²⁷² STEWARD, 1938, p. 169

²⁷³ STEWARD, 1938, pp. 165/6

²⁷⁴ STEWARD, 1938, p. 189

foraged together during the summer, the oldest man, or, if he were infirm, perhaps his son, directed their movements.”²⁷⁵

Steward writes more extensively about the above-mentioned Woygowuetavi and the village Pasisigwana in other spots:

“Pasisigwana (pa, water+sasip, blood+gwana, smell), at a warm spring in the mountains north of Clayton. About 30 families. These wintered together but in summer groups of two or three families moved together on foot, gathering vegetable foods and hunting small game around the headwaters of the Salmon River, East Fork of the Salmon River, the Lost River Range, and the Salmon Range. The head man was Wonjgowuetavi, his duties consisting mostly of directing fishing (pangwidagwani, fish chief) in the Salmon River. Once these people went to Camas Prairie where they procured some horses and subsequently joined other Shoshoni in Buffalo expeditions to the east.”²⁷⁶

According to this, the 30 families that overwintered at Pasisigwana on the upper reaches of the Salmon River searched for edible vegetables and hunted small game in small groups of two or three families across a large area during the summer²⁷⁷. At this time, in August, the Chinook salmon reached the eastern plateau. It must be assumed, then, that the “Fishing Chief” practiced his role mainly in winter or spring, when all 30 families were together and the “spring-salmon” (*tahmaagai*; *tahma*=spring, *agai*=salmon), probably meaning *Salmo gairdneri*, migrated into the headwater streams in March to spawn²⁷⁸. Perhaps rapids were main points of fishing with spears or nets, because, according to the statement by Steward, there were weirs in the Lemhi River, but not in the upper reaches of the Salmon River before it met the Lemhi River²⁷⁹.

Although the Lemhi-Shoshone regularly went to the bison hunt, they practiced quite a bit of salmon fishing. They were called *Agaidueka* (“Salmon-eaters”) and also called themselves that²⁸⁰. In early spring they must have caught the *tahmagai* and in summer Chinook salmon.

The Lemhi River Valley, in recent times, served the Indians of the eastern Plateau as a retreat from the Blackfeet; the travelers of the previous century encountered Shoshone, Bannock, Pend d’Oreilles, Nez Perce, and Flathead in the Lemhi Valley²⁸¹. At least during certain seasons, permanent or temporary “residents” of the Lemhi River Valley stayed in larger groups along the main river²⁸². It can’t be said whether this was encouraged by fishing. We know only that there were fishing weirs in the Lemhi River, the construction of each one requiring the work of about 20 families:

“Construction of fish weirs involved several families...Usually three or four families cooperated....For construction of more ambitious weirs, especially in the Lemhi River, about 20 families cooperated, erecting their tipis on the bank at each end of it. A man was stationed at each end of the weir to watch for the fish while the people danced. When the fish came he requested a number of men to go along the weir and help him remove the fish. They strung the fish on willows and carried them to shore, distributing them among the families. There was no shamanism or ceremony connected with fishing. Any interested men were leaders.”²⁸³

In this account of communal weir fishing there is no statement regarding which species of fish was being caught. The use of larger weirs, whose construction during the spring flood may have presented difficulties, suggests Chinook salmon. Weir fishing for *Salmo gairdneri* in spring, on the other hand, is

²⁷⁵ STEWARD, 1938, p. 193

²⁷⁶ STEWARD, 1938, p. 187/8

²⁷⁷ STEWARD, 1938, p. 190

²⁷⁸ STEWARD, 1938, p. 190

²⁷⁹ STEWARD, 1938, p. 190/1

²⁸⁰ STEWARD, 1938, p. 186/7

²⁸¹ STEWARD, 1938, p. 187

²⁸² STEWARD, 1938, p. 186, 188/9

²⁸³ STEWARD, 1938, p. 190/1

made probable by the fact that one had reservations about taking on an intensive salmon fishing operation (with 20 families at a large weir) in addition to the bison hunt and the move to Camas Prairie.

According to the quote above, there were two supervisors of salmon fishing at each large weir²⁸⁴. They observed the movement of the fish and, depending on the sometimes-different yields at each end of the weir, regulated the removal of the fish from the weir. The size of the weirs in the Lemhi River also suggests that leadership was needed for their construction and for management of the distribution of the caught fish, and it is plausible, therefore, that these two supervisors came into power at the same time.²⁸⁵

Although Steward does not make any affirmative statements about the status and qualifications of the supervisors of salmon fishing in the Lemhi River, they were definitely not shamans and did not lead any kind of Ceremony of the First Salmon. However, they probably weren't permanent leaders, either, as he says, "Any interested men were leaders." However, several qualifying statements are necessary regarding this observation: this statement at first seems to suggest that any Indian can take up a leadership position during weir fishing, which does not quite agree with the former conditions. Both Yolanda and Robert Murphy, as well as Steward, emphasize the specific suitability of certain people for the leadership of cooperative weir fishing operations. Y. and R. Murphy write:

"Certain men were considered especially proficient in the construction and operation of fish weirs and assumed supervision over the operation."²⁸⁶

Steward elaborates:

"Special activities not involving the entire group were directed by various qualified individuals. Thus, fishing was managed by some fishing expert when several families cooperated. Hunting was usually directed by Yumapai."²⁸⁷

On the other hand, the second quote can be interpreted to mean that, above all, smaller fishing operations were led by specialists. Such an interpretation draws attention to a statement by Y. and R. Murphy, according to which the leadership of the establishment, and probably also preparation for construction, of a salmon weir—it must be assumed, because of the stronger political centralization of the Lemhi-Shoshone in recent times—was part of the duties of the leader of all of the Lemhi²⁸⁸. Obviously he cannot have supervised all of the activities related to weir fishing, and one must consider the existence of other large weir construction projects outside of his control, as long as one does not attribute the activities of 20 families mentioned above, which was, after all, almost one fifth of all of the Lemhi-Shoshone²⁸⁹, to a time before the political consolidation of the Lemhi.

The leader of all of the Lemhi in recent times potentially influenced the salmon fishing of the tribe, in that he held discussions with different influential Indians before the beginning of salmon fishing

²⁸⁴ The question remains, whether one supervisor was the number one leader and the other was appointed as his assistant. It is completely possible that they both had equal responsibility, each overseeing salmon fishing on one end of a large weir.

²⁸⁵ It can also be assumed that they coordinated the deployment of different weirs in the Lemhi River with one another.

²⁸⁶ MURPHY, 1960, p. 331

²⁸⁷ STEWARD, 1938, p. 194. In another spot STEWARD writes about *Yumapai*: "Antelope were surrounded on horseback and shot with bows and arrows. Such surrounds were usually held in midwinter, when the snow was deep. People came down from the Salmon River to near the present town of May. They were usually led by the general hunt chief, dugapavi (duga, hunt+pavi, leader), who was named Yumapai. Shamanistic drives with corrals were unknown" (STEWARD, 1938, p. 190). In the Lemhi River Valley, in addition to the organizers of weir fishing and antelope drives there were probably also organizers of waterfowl drives: "Young waterfowl were sometimes taken in drives in August, under any leader" (STEWARD, 1938, p. 190).

²⁸⁸ MURPHY, 1960, p. 331

²⁸⁹ STEWARD, 1938, p. 188/9

season²⁹⁰, as before the beginning of the bison hunt, and, thereby, coordinated the deployment of the weirs. Steward, in his discussion of the Chiefdom of the Lemhi-Shoshone, quotes Lowie's perspective, that the chief led fishing expeditions²⁹¹, but it is hard to imagine that the Lemhi traveled very far to fishing spots.

Finally, it should be added, that Y. and R. Murphy mention the storage of weir construction materials during winter, and, thereby, report practices that fall outside of those normally associated with weir fishing in the interior region of the Columbia River Plateau and Snake River region²⁹². One can ask the question of whether the weir construction materials were stored by individual families, who likely each prepared a certain portion of them and offered them for the communal construction of the weir, or whether the leader of weir fishing operations had control of all of the materials.

Outside of the range of the salmon migration, there were two regions of the Great Basin in which Organizers of Fishing probably appeared. The information on the Pavógowunsih or "Fish Ute" in the upper reaches of the Sevier River is very sparse and unclear:

"Pavógowunsih —This band occupied the upper portion of the Sevier River south of the Salina River. Gottfredson (1909, pp. 327/329) suggests two groups here: one small group under Old Poganeab or "Fish Captain" at Fish Lake; . . ." ²⁹³

We have much more thorough information about fishing on the Humboldt River. Steward writes, regarding the fishing conditions on this river:

"The main species was a trout (?), said now to be extinct, called agai (the Snake River name of salmon; the Shoshoni name for fish is usually pangwi), probably the Tahoe trout. There were also several suckers, chubs, and minnows." ²⁹⁴

Fishing could be practiced in both summer and winter; unfortunately, nothing is said about when the communal fishing operations took place²⁹⁵. Because this was barrier fishing (rock dams and weirs of wicker) it must have been largely dependent upon water levels. In poor years it must have been impossible to fish by weir during the summer²⁹⁶. It's to be assumed that the Tahoe trout migrated during the spring; as far as the rest of the species of fish are concerned, it is known that the Lahontan sucker traveled to the upper section of the stream in July²⁹⁷.

There were multiple fish dams or fish weirs in the Humboldt River. Steward says, regarding one fish dam, that its location was determined by the availability of suitable stones materials. A different dam on Swiss Creek was not far from the confluence of this tributary with the Humboldt river, a third was erected on the South Fork about 12 miles south of the confluence with the Humboldt River²⁹⁸. Without saying that the establishment of rock dams could only occur at certain locations depending on the availability of suitable materials, or that the construction of a rock dam or fishing weir with wicker was more frequent in the tributaries near the mouth of the Humboldt River, these fishing apparatuses seem to have been fixed at certain locations for longer periods of time. The rock barriers needed only to be fixed up a bit each year and not rebuilt from scratch like the fish fences.

Many large fish dams or fishing weirs (perhaps even all?) were each supervised by a specific person. Of the three fish dams whose locations are given above, Steward is able to give the names of the

²⁹⁰ MURPHY, 1980, p. 331

²⁹¹ STEWARD, 1938, p. 193

²⁹² MURPHY, 1960, p. 331

²⁹³ STEWARD, 1938, p. 228. The term, "Fish Captain," might just mean that this person was chief of the "Fish Ute."

²⁹⁴ STEWARD, 1938, p. 159

²⁹⁵ STEWARD, 1938, p. 159

²⁹⁶ STEWARD, 1938, p. 41

²⁹⁷ STEWARD, 1938, p. 41

²⁹⁸ STEWARD, 1938, p. 159

supervisors of two²⁹⁹. It is, therefore, not very likely, that the supervisors changed very often. Steward writes about their duties:

“The maker of a trap or dam was director of fishing operations. He called for assistance to drag out the baskets full of fish every 2 to 4 days, as each weighed up to 200 pounds. The fish were then distributed among the various families.”³⁰⁰

The expression, “The maker of a trap or dam...” should surely not be interpreted literally. Undoubtedly what is meant is that the leadership of all technical operations was in the hands of this “director.”

The productivity was not as high as at the large salmon weirs in the Columbia River region. Even when one assumes that a barrier on the Humboldt River had 5 traps attached, this would result in a daily average of no more than about 150 kilograms. There was a corresponding concentration of people in the region of the three named fish dams between Susie Creek and the mouth of the South Fork at that time. At Huntington Creek alone, which joins the South Fork, about 250 people lived, who, according to Steward moved to the Humboldt River, and on the Humboldt River between Susie Creek and the South Fork River about 1000 Indians, although this number might be from the time after the introduction of horses³⁰¹. Under certain conditions, however, the potential existed to take turns at different fish dams or fishing weirs. Steward tells of the grandmother of one of his informants, that she occasionally helped with fishing at two locations³⁰². The question of how the fish caught at one dam or weir were distributed among the families present and whether the supervisor or Organizer of Fishing regulated the distribution can unfortunately not be answered based on the available information.

F. Yurok (Karok, Hupa, Shasta, Wiyot, Chilula, Matole)

The entire Yurok way of life and culture was centered around the Klamath River³⁰³. The two terms “upstream” and “downstream³⁰⁴” were used in place of the four cardinal directions. All of the Yurok villages lay along the Klamath River; the population density here was twice as high as on the Pacific Coast³⁰⁵. The river was the most important transport route: the Yurok had better relationships with their neighbors along the river, the Karok and Hupa, than with their direct neighbors on the Pacific Ocean, the Tolowa³⁰⁶. The Yurok canoe was excellent for river transport, but completely unsuitable for traveling by sea³⁰⁷. However, most importantly, the Klamath River provided the main source of food, the salmon. The word for salmon in the Yurok language essentially meant “Food” (“That which is eaten”).³⁰⁸

Large stretches of the Klamath River are riddled with boulders that stick out from the banks or the middle of the river. Directly downstream of these boulders there are eddies or small stagnant areas near the shore. Yurok salmon fishing was largely dependent upon these natural features. They dipped very special A-frame plunging nets into these eddies and stagnant areas from wooden platforms that were built out over the water from the boulders along the shore. This mode of salmon fishing was brilliantly suited for the first and most important salmon season in spring and early summer during high water flow in the Klamath River. The swift flow of the Klamath River during this time makes it difficult for the salmon to swim up the middle of the stream, pushing them toward the shore, where the fish, which are

²⁹⁹ STEWARD, 1938, p. 159

³⁰⁰ STEWARD, 1938, p. 159

³⁰¹ STEWARD, 1938, p. 155/6

³⁰² STEWARD, 1938, p. 159

³⁰³ WATERMAN, 1920, p. 184

³⁰⁴ WATERMAN, 1920, p. 183; KROEBER, 1925, p. 15

³⁰⁵ WATERMAN, 1920, p. 184; KROEBER, 1925, pp. 8, 116

³⁰⁶ WATERMAN, 1920, p. 184

³⁰⁷ WATERMAN, 1920, p. 184/5; HEIZER, MASSEY, 1953, p. 296

³⁰⁸ WATERMAN, 1920, p. 185

exhausted from swimming upstream, congregate in the calm areas³⁰⁹. Only one man could fish by dip net at each platform—the same went for spear fishing, although this was not as important for the Yurok. The number of fishing stations along the Klamath River was relatively large. The stations were not distributed completely uniformly along the banks of the river, but they were much more spread out than the spear fishing stations of the Sanpoil and Nespelem on the Columbia River³¹⁰.

The Yurok fishing stations were owned individually and could be traded, rented, acquired through marriage, or inherited³¹¹. They were also used by non-owners, who, in contrast to the Sanpoil, gave a certain portion of their catch to the owner of the fishing station³¹². What's more, any passersby could take some of the salmon caught at a fishing spot, but it's not known how much³¹³. At a good salmon station, multiple co-owners would often take turns fishing for a few hours, depending on how great a portion they owned³¹⁴. They had either purchased their portion or acquired it through marriage or inheritance³¹⁵. Considering such a system of sharing, the productivity of the salmon fishing stations must have been relatively high; obviously, however, it varied a lot between individual locations. Fishing stations could sell for very different prices³¹⁶. Changes in the position of the station with relation to the shore could quickly raise or drop the value of a fishing station³¹⁷. However, overall, the value of a salmon fishing station—compared to other objects—was not very high³¹⁸. A great depreciation of the fishing stations was prevented by the fact that besides those already existing, no new ones were allowed to be set up. The reason given for this was that if there were too many fishing stations the productivity of those farther upstream would be harmed³¹⁹.

³⁰⁹ Fishing with drag or towed nets was only possible in a few places in Yurok territory, during low water levels in the fall in calm sections of the lower portion of the river (KROEBER, BARRETT, 1960, pp. 41, 49); "scoop" nets were used in moving water, especially at rapids. There were no waterfalls in Yurok territory (KROEBER, BARRETT, 1960, pp. 42-44). Gill nets were in use in the lower portions of the river, but only in deep water (KROEBER, BARRETT, 1960, pp. 51-53); for the conditions necessary for the construction of salmon weirs see p. 57 of the present work.

³¹⁰ KROEBER, BARRETT, 1960, pp. 75/6. There were about 70 fishing stations along the Klamath River between the village of Erner and the village of Wahsek, a stretch of about 40 km, at which most salmon fishing was conducted with A-frame plunging nets. The number of salmon fishing stations was not directly correlated with the resident population; along the above-mentioned stretch of river there were 36 stations and 7 villages encompassing 27 houses upstream of Kepel, while downstream there were 22 villages encompassing 142 houses, but only 35 salmon fishing stations (from WATERMAN, 1920, maps 10, 11, 17, 23; COOK, 1956, p. 92, Table 2).

³¹¹ WATERMAN, 1920, pp. 219, 223-6; KROEBER, 1925, p. 20; KROEBER, BARRETT, 1960, p. 3. According to HEWES, only the stations where fishing was conducted with A-frame plunging nets were individual private property (KROEBER, BARRETT, 1960, p. 4). It required a lot of work to set up these stations: "As is evident from almost all of our illustrations showing fishing places, the building of one of these scaffolds or platforms (Karok, imwir) is attended by much arduous labor" (KROEBER, BARRETT, 1960, p. 34).

³¹² KROEBER, 1925, p. 34

³¹³ KROEBER, 1925, p. 34. There was almost no other way to use a surplus of salmon that was not needed for immediate consumption by the fisherman and his own family, because the Yurok generally did not sell food (KROEBER, 1925, p. 40). However, it is undeniable that in the thinking of the Yurok the concepts of "salmon" and "wealth" were related: in their world view the oceanic kingdom of salmon and home of the Dentalium-shell were closely connected (WATERMAN, 1920, Fig. 1). The Yurok of Welkwau also appealed to the First Salmon to bring them "wealth" (SPOTT, KROEBER, 1942, p. 176).

³¹⁴ KROEBER, BARRETT, 1960, p. 3; KROEBER, 1925, pp. 33/4; WATERMAN, 1920, p. 219.

³¹⁵ WATERMAN, 1920, p. 219

³¹⁶ WATERMAN, 1920, p. 219

³¹⁷ WATERMAN, 1920, pp. 219/20; KROEBER, BARRETT, 1960, p. 37

³¹⁸ KROEBER, 1925, pp. 27/8; also see WATERMAN, 1920, p. 219

³¹⁹ WATERMAN, 1920, p. 220; KROEBER, 1925, p. 34; KROEBER, BARRETT, 1960, p. 3

It has already been pointed out that ownership and usage rights to salmon fishing stations could be transferred by marriage and inheritance. Despite the tendency of the Yurok to remain in their own villages or move to a neighboring one after marrying³²⁰, in some cases one family would end up with the rights to a number of salmon fishing stations that were spread quite far apart along the Klamath River³²¹. Owning multiple salmon fishing stations that were spread out must have provided greater security in the face of sudden changes in the course of the river, which could change the yield of a salmon fishing station from one year to the next.

While only salmon swimming near the shore could be reached from hand net stations, the fishing weir at Kepel blocked the entire width of the Klamath River. Besides this fishing weir there was only one other large weir in Yurok territory at Lolego, right on the border with the Karok³²². According to Waterman and Kroeber, it was the following conditions that allowed the section of the River near Kepel to emerge as the most suitable stretch for erecting a large salmon weir:

“In the first place, the river here is, or was, rather broad and shallow, with a gravel bottom which permitted the easy driving of stakes. In recent years the current has cut a deep channel near the north shore, and the Indian say it would be much more difficult to build the dam now. Upstream from Kepel the river is, generally speaking, narrow and deep, even close along the shore. There are numerous ponds and eddies, often deep and overshadowed with rocks, where the salmon congregate and are readily taken with a dip net. A boulder with a deep pool beside it, together with a staging of poles from which the net is handled, constitutes a regularly recognized ‘fishing place.’ Such places are much more numerous upstream than down. Where the river bed is broken up with boulders and rapids, fishing places occur every few yards where it is broad, however, and shallow at the edges, the salmon swim up the middle, so that some device must there be contrived for reaching them. The dam was built in a locality where fishing places were few and not much good.”³²³

To construct the salmon weir at Kepel the labor of 60 to 100 men was required³²⁴. Ten days of communal effort completed the weir³²⁵. These 60 to 100 men were from villages that lay about 10

³²⁰ WATERMAN, KROEBER, 1934, p. 14

³²¹ WATERMAN, 1920, pp. 223-6; KROEBER, BARRETT, 1960, pp. 3/4

³²² See KROEBER, BARRETT, 1960, Map 1 (p. 149).

³²³ WATERMAN, KROEBER, 1938, p. 51. The quote above provides information regarding three important points:

- a) The natural conditions of a section of river are subject to constant change; even the traditional locations for the construction of large weirs may have changed over time.
- b) Weir construction occurred along a flat stretch of the Klamath River. According to KROEBER and GIFFORD (1949, p. 82) the average depth of the Klamath River at Kepel was measured at 6 to 7 feet on June 1, 1902. It's likely that weir construction occurred during a season when the Klamath River had low water flow, in other words, late summer or (and) early fall. While WATERMAN and KROEBER (1938, p. 49) make the case for weir construction in early summer, according to KROEBER and BARRETT (1960, p. 11) the Kepel weir was erected in August or September (as water levels began to dip).

- c) The stretch of the Klamath River near Kepel that was well-suited for weir construction was not as appropriate for fishing from platforms with dip nets. According to WATERMAN (1920, Maps 11, 17, 23) there were 4 stations in the first three kilometers downstream of Kepel, and 8 in the third section. Within the first three kilometers of shore upstream of Kepel there were 2 fishing stations, but in the next three kilometer-sections 14 and 18 stations.

³²⁴ WATERMAN, KROEBER, 1938, pp. 55, 73; ERIKSON, 1943, p. 279. The Kepel weir was over 100 meters in length (KROEBER, BARRETT, 1960, p. 14), and there have been difficulties gathering the amount of workers needed for weir construction since at least the turn of the century (WATERMAN, KROEBER, 1938, p. 74). According to KROEBER and GIFFORD (1949, p. 82) the last salmon weir was built at Kepel in 1913. According to WATERMAN and KROEBER (1938, p. 80), an average of about 150 adult men gathered for the Yurok ceremonial activities.

³²⁵ WATERMAN, KROEBER, 1938, p. 50

kilometers upstream and 25 kilometers downstream from Kepel³²⁶. It is not likely that they all suffered from a lack of good fishing stations.

The salmon weir, which had required a great amount of work to erect, was destroyed after 10 days:

“Ten days were required to build it, and after being used for ten days more it was deliberately torn down,...Whether there was any special significance in the number ten in this undertaking I do not know, but five and ten are the usual ritualistic numbers of the Yurok.”³²⁷

Waterman’s report that the fishing weir was torn down after 10 days in consideration of neighbors³²⁸ upstream is confirmed by other authors³²⁹. Furthermore, in these 10 days a sufficient amount of salmon could be caught for winter reserves³³⁰.

The distribution of the salmon caught in the Kepel weir depended on ten large “traps” that were built into the weir. These “traps” were gates with small enclosures that were connected upstream, from which the salmon could be removed with hand nets. A group worked together on each one of these barriers and divided up the fish caught in it among themselves³³¹. It is very likely that these teams were not first formed at the weir, but that they each represented certain Yurok villages. The construction of one such barrier was connected with the recitation of “phrases,” that must have belonged to certain Yurok subgroups. The barriers each had their own names, and this also suggests a traditional connection with certain Yurok groups³³². The barriers were of varying value³³³, however it does not appear that they were traded or randomly assigned each year. The width of the openings in the weir was regulated and all ten were equal³³⁴. Waterman and Kroeber indicate that the yields at each of the traps were subject to a certain “tax.” Unfortunately, nothing more can be deduced from their statements, except that the workers who were not directly involved with erecting the weir also shared in the catch:

“All who had worked on the dam, including the stake cutters miles away, shared in the catch.”³³⁵ Before work began on the salmon weir at Kepel, the residents of Yurok villages up- and downstream received word that they should come to the region of Sa’a and Kepel on a certain day. This message was sent by the Organizer of Salmon weir construction at Kepel, who also led all of the ceremonial activities related to weir construction³³⁶. Waterman and Kroeber call him “dam chief,” his Yurok “title” is *wi-lohego*, “That-one-dam-he-makes,” often shortened to “Lo.”³³⁷

³²⁶ KROEBER, BARRETT, 1960, p. 12

³²⁷ WATERMAN, KROEBER, 1938, p. 50

³²⁸ WATERMAN, KROEBER, 1938, p. 50

³²⁹ KROEBER, BARRETT, 1960, p. 12. Erikson sees the Yurok reason for the weir fishing time restriction as being that they did not want to delay the arrival of the salmon to their spawning grounds for too terribly long (ERIKSON, 1943, pp. 278/9). He points out that three gates in the weir below the surface of the water were opened at night (p. 279). According to another report, some salmon were even allowed to pass through the weir during the day, and on the south shore the weir was never completely closed (KROEBER, GIFFORD, 1949, pp. 83/4).

³³⁰ There were no less than 10,000 salmon (1,000 per day) for about 100 families. WATERMAN writes: “The fish were split and dried, and very large quantities were in this way preserved” (WATERMAN, KROEBER, 1938, p. 50).

³³¹ WATERMAN, KROEBER, 1938, pp. 49, 58/9; KROEBER, BARETT, 1960, p. 12

³³² WATERMAN, KROEBER, 1938, pp. 58/9

³³³ WATERMAN, KROEBER, 1938, p. 56

³³⁴ WATERMAN, KROEBER, 1938, pp. 58/9

³³⁵ WATERMAN, KROEBER, 1938, p. 59

³³⁶ WATERMAN, KROEBER, 1938, p. 52; also see p. 72; the completion of weir construction was announced upstream (WATERMAN, KROEBER, 1938, pp. 65, 72).

³³⁷ WATERMAN, KROEBER, 1938, pp. 51/2

The 60 to 100 Yurok involved in building of the weir were broken into multiple work groups that had special duties. Most importantly there was a work group that cut down and prepared the necessary wood and another that was in charge of assembling the weir itself.³³⁸

The “dam chief,” responsible for the entire operation, selected five or six “foremen,” that were probably entrusted with leading each of the work groups³³⁹. He himself only participated in the construction of the first salmon fishing device out from the north shore³⁴⁰. The rest of the time he observed the progress from his somewhat raised seat.³⁴¹ Once the most important work was completed he inspected the weir, making sure that any opportunity for the salmon to escape was blocked.³⁴²

“Lo,” unlike the other Organizers of Salmon Fishing, had nothing to do with the distribution of salmon caught at the weir. It is, however, plausible that he saw to it that even those who did not own one of the traps in the weir, or, in other words, did not belong to any of the groups that had rights to one of these traps, got a portion of the daily catch. “Lo” and his relatives owned their own trap, probably on the north shore.³⁴³

The organizational duties of the “dam chief” were almost overshadowed by his obligation to ensure the continuity of the salmon run, a favorable outcome from salmon fishing, a productive acorn harvest, and last but not least, the health of all the Yurok.³⁴⁴ Just like the ceremonialists of the world-renewal-rituals of *Inam* and the Ceremony of the First Salmon of *Amaikiaram*, “Lo” was very much connected with mythical prehistory. Certain stones, with which the posts of the weir were pounded into the ground, were in his charge. These stones originated from the mythological figures “Thunder” and “Earthquake.”³⁴⁵ In the time directly before weir construction “Lo” walked along the same trail every year. During this walk he recited texts in such a quiet voice, that even the assistants accompanying him could not understand. They were probably the relevant parts of the mythical tales of when the prehistoric entity traveled the same path.³⁴⁶

Along his way “Lo” also visited the spot where the mythical first builder of the salmon weir was supposed to have still existed in some form³⁴⁷. Other connections to the mythical first weir builder were that “Lo” stayed in a sweat lodge, which was referred to as “Sweat lodge of the first weir builder,” in the period of preparation and also during weir construction.³⁴⁸

According to the reports of informants, “Lo” waited every year for the west wind, the wind from the open ocean, to indicate to him the right time to begin weir construction³⁴⁹. There is no doubt that according to Yurok thinking, this message came from the realm of the salmon (*Kowetsek*), which lay in the west, in the ocean.³⁵⁰ The “dam chief”, for his part, sent news about the progress of weir construction in the direction of *Kowetsek*.³⁵¹ How far “Lo” grew into the role of this mythical entity, whether he merely represented this being or embodied it, is difficult to say. We know only that until the most important elements of the weir were complete he could not speak profanely or be seen by

³³⁸ WATERMAN, KROEBER, 1938, pp. 54-6

³³⁹ KROEBER, GIFFOR, 1949, p. 83

³⁴⁰ WATERMAN, KROEBER, 1938, pp. 54/5, 65.

³⁴¹ WATERMAN, KROEBER, 1938, pp. 55-7, 66

³⁴² WATERMAN, KROEBER, 1938, p. 66

³⁴³ KROEBER, GIFFORD, 1949, p. 84

³⁴⁴ KROEBER, BARRETT, 1960, pp. 12/3

³⁴⁵ WATERMAN, KROEBER, 1938, pp. 53, 73

³⁴⁶ WATERMAN, KROEBER, 1938, p. 53

³⁴⁷ WATERMAN, KROEBER, 1938, p. 62

³⁴⁸ WATERMAN, KROEBER, 1938, p. 73

³⁴⁹ WATERMAN, KROEBER, 1938, pp. 52/3

³⁵⁰ See WATERMAN, 1920, Fig. 1

³⁵¹ WATERMAN, KROEBER, 1938, pp. 68, 71

women³⁵². At certain peaks of his ceremonial power he even had to be removed from the sight of men.³⁵³

Powers for safeguarding human life in all its forms, were contained not only in the leader of weir construction, but also in the materials used to construct the weir themselves. If the weir was not erected, according to the beliefs of the Yurok, sickness and death would come over the people.³⁵⁴

“Lo” appealed to the “main” posts used in the weir to guarantee a good acorn harvest and keep sickness away³⁵⁵. Until construction of the weir was complete, neither women nor outsiders could come near it.³⁵⁶ Any logs intended for weir construction but not used were ceremonially burned and, thereby, protected from profane contact.³⁵⁷ Even after the end of fishing the “dam chief” and his assistants stayed near the weir for one or two months, probably to prevent inappropriate treatment of the weir even after it had fulfilled its purpose.³⁵⁸ These one to two months could have potentially allowed time for the exaggerated personality of the weir construction leader to subside.³⁵⁹ Unfortunately, nothing is said about whether “Lo” followed the same rules regarding ceremonial purification³⁶⁰ of his person in the months after weir fishing as he did before and during weir construction, as is known to have been the case for other ceremonialists of the Yurok and Karok.³⁶¹

The position of “dam chief” was connected as much to a specific “house” as it was to a specific family³⁶², which, for the Yurok, largely meant the same thing.³⁶³ “Inheritance” of the position occurred via the passing of the prehistoric myth to a different relative.³⁶⁴ Only the “dam chief” and his successor, not even his assistant, who otherwise knew about all of the details of the ceremony, knew the mythical tale about weir construction.³⁶⁵ The fact that a woman, indeed, Mrs. James Marshall, came into possession of at least parts of the weir construction leader’s “medicine” can probably be seen as a sign of the gradual deterioration of Yurok society.³⁶⁶ During this time period the Yurok had to discuss who should succeed “Lo” and it was doubted whether the chosen successor could actually fulfill the duties of “dam chief.”³⁶⁷ This raises the question of whether it was possible, “in the old days” , that the two last leaders of weir construction were “half married,” or they could only pay for half of the price of their brides.³⁶⁸ There were probably difficulties due to this, because a “half married man” usually moved to the wife’s village.³⁶⁹

³⁵² WATERMAN, KROEBER, 1938, p. 66

³⁵³ WATERMAN, KROEBER, 1938, p. 53

³⁵⁴ WATERMAN, KROEBER, 1938, pp. 74, 76; ERIKSON, 1943, pp. 281/2

³⁵⁵ WATERMAN, KROEBER, 1938, p. 55; KROEBER, GIFFORD, 1949, pp. 81-3

³⁵⁶ WATERMAN, KROEBER, 1938, pp. 57, 66

³⁵⁷ WATERMAN, KROEBER, 1938, p. 57

³⁵⁸ KROEBER, GIFFORD, 1949, p. 84; ERIKSON, 1943, p. 280

³⁵⁹ See the information on ceremonialists of Katimin in KROEBER and GIFFORD, 1949, p. 29

³⁶⁰ WATERMAN, KROEBER, 1938, p. 56

³⁶¹ KROEBER, GIFFORD, 1949, p. 39

³⁶² WATERMAN, KROEBER, 1938, pp. 51/2; WATERMAN, 1920, p. 211

³⁶³ WATERMAN, 1920, pp. 208/9

³⁶⁴ WATERMAN, KROEBER, 1938, p. 52; KROEBER, GIFFORD, 1949, p. 82

³⁶⁵ Although two of KROEBER’s informants were assistants to “Lo” (WATERMAN, KROEBER, 1938, pp. 62-8), he only learned fragments of the “dam medicine” from them (see WATERMAN, KROEBER, 1938, p. 75).

³⁶⁶ WATERMAN, KROEBER, 1938, p. 75

³⁶⁷ KROEBER, GIFFORD, 1949, p. 82

³⁶⁸ WATERMAN, KROEBER, 1938, pp. 51/2

³⁶⁹ WATERMAN, KROEBER, 1934, p. 1

Lastly, it is mentioned that the “dam chief”, for his efforts during weir season, received certain “taxes” from the residents of multiple Yurok villages³⁷⁰ and, additionally, was in control of all yields from his trap in the weir at Kepel.

When looking for an explanation for the development of salmon fishing leaders among the Yurok of northwestern California, it seems reasonable to consider the technical and organizational duties of this official.

The construction of a barrier the size of the Kepel weir could only be accomplished with a collective effort. The notification, which likely varied a bit from year to year, of all villages involved with weir construction, necessitated an observer who lived at the location where the weir was built. In order to complete the weir, many, some complicated, individual tasks had to be completed. The weir construction leader oversaw their proper execution from his traditional seat; in this way he was able to get an overview of everything that was going on. The leader himself only helped with certain phases of weir construction. He entrusted “foremen,” who stood at the helm of each work group, with the rest of the work.

It is doubtless that it was the size of the weir, the number of individual technical tasks to be completed, the distribution of the labor, the coordination of the appointed work groups, and, last but not least, a necessary familiarity with the local conditions that led to the development of the position of permanent lead of weir construction. Consequently, the question of the cause of the development of this institution is often as important as the question of the economic necessity or the economic advantages of such a large salmon weir.

It can be hypothesized that the Yurok near Kepel were driven to construct a weir by the probably rather poor local opportunities for hand net fishing. Additionally, the general advantage of late summer weir-fishing for preserving salmon and accruing a winter store could have been an equally as important reason to construct a salmon weir.

All of the weirs of northwestern California seem to have been constructed across the entire width of the streams they were built on. In the lower sections of the Klamath River there must have only been a few spots that were suitable for building such a salmon weir. However, the limitation of the Yurok to the one large weir at Kepel—the other weir at Lolego had more local importance—was also due to the number of laborers that were required for the construction of the over 100m long barrier. On the other hand, the productivity of the Kepel weir was so great, that all Indians present were compensated for the time and effort in just a few days. The salmon can only have been preserved, immediate use was impossible. The existence of many salmon weirs along the Klamath River in the Karok and Shasta territory and the briefness of weir-fishing season leading to the blocking of the river for groups upstream warranted the temporal restriction of fishing to ten days.

The significance of the Kepel weir for the economy of the Yurok can perhaps be demonstrated by the fact that this fishing apparatus was built until 1913. At this time there were probably no more than 700 Yurok, and it must have required the utmost effort of all laborers to continue weir fishing. Admittedly, it must be considered that it was not only the direct economic effect, but also the traditional belief of the continuing necessity of the annual construction of the salmon weir at Kepel that was a driving force mobilizing many Yurok up into the present century.

If, in light of the given facts and hypotheses, the impression is created that the construction of a large weir and, thereby, the development of a permanent leader of weir construction can be explained by the dependence of the Yurok on salmon fishing and on the special conditions for salmon fishing in the lower section of the Klamath River, the ritual duties and function undoubtedly also played a role in the development of the institution of a permanent weir construction leader. The most obvious evidence for

³⁷⁰ WATERMAN, KROEBER, 1938, p. 52. The leader of the Ceremony of the First Salmon at Amaikiaram was not paid (KROEBER, GIFFORD, 1949, p. 21).

this is the regulation of the succession of the position of Weir construction leader. Passing the mythical tale of the first construction of the salmon weir on to a relative transferred the responsibility for weir-fishing at Kepel and, according to the beliefs of the Yurok, also for the maintenance of the existing world order to the intended successor.

While this relationship between succession and the knowledge of an esoteric and superhuman prehistoric myth makes the position of weir construction leader at Kepel similar to that of the Salmon-Chiefs of the Sanpoil and Nespelem, among whose qualifications was a close relationship with certain guardian spirits, the Yurok officials differ significantly from the Salmon-Chiefs of the Columbia River Plateau, in that they were not in charge of leading or overseeing a daily distribution of fish. Hypotheses regarding this point are not supported by any clear records and, based upon the available information, we know only that certain Yurok groups had fixed usage rights to the individual gates in the weir. The portion of fish received by the weir construction leader and his relatives was also determined in this way. The traditional use of a gate on the north shore by this Yurok is not evidence of special status, as the current of the Klamath River at Kepel was about equally strong across the whole width of the river. The material donations flowing from the different Yurok settlements to the weir construction leader for his efforts seem not to have been significant.

Based on all of this it can be concluded that in a society with developed family rights to certain means of production (hand net stations, groves of oak trees) and large differences in property value due to natural conditions, temporary cooperation of economically and politically self-sufficient/autarchic groups occurred. At the top of these community salmon fishing undertakings stood leaders that were trusted with the technical and organizational leadership of the many and complicated weir construction as well as the ritual insurance(?) of the catch.

Although the ethnographic reports on other tribes of northwestern California are not as analyzable, they allow us to see how typical the form of salmon fishing practiced at Kepel was in the overall region.

Hupa salmon fishing had a lot in common with Yurok fishing. In addition to fishing for salmon with A-frame plunging nets in spring, large weirs were also used in the Trinity River in fall.³⁷¹ According to Hewes, a ceremonialist led construction of the weir³⁷²; family traditional usage rights existed for the most productive gate in the middle of the weir³⁷³. On the other hand, according to Hupa informants the leadership of *Takimilding* weir construction was in the hands of the permanent leader (chief) of all of the Hupa in the Trinity River Valley. Only in his old age did he decide—unable to continue supervising and directing the weir construction—that a large salmon weir could be built at Medilding, too.³⁷⁴ Contradictory to this statement by Hewes' informants, there is evidence that in historical times the Hupa from Medilding, not the Hupa from Takimilding, led the Ceremony of the First Salmon³⁷⁵ and, therefore, the alternating construction of salmon weirs—one year at Medilding, the next at Takimilding—likely was older than the decision of this chief of Takimilding and of all the Hupa. Thereby, however, nothing is said about the actual relationship of the ceremonialists, ritualistic weir construction

³⁷¹ GODDARD, 1903, p. 24. According to KROEBER, BARRETT (1960, p. 18), weir construction began when the water was about 1.20 meters deep.

³⁷² KROEBER, BARRETT, 1960, pp. 18/9. According to GIFFORD's Hupa informants, a "sacred fish dam" was built at Cheindehotding, that, however, was no longer being built by the time history began being recorded in this region. A ceremonialist led the construction of the weir. Oddly, construction of this barrier supposedly began in May (KROEBER, GIFFORD, 1949, pp. 60/1).

³⁷³ KROEBER, BARRETT, 1960, p. 19

³⁷⁴ KROEBER, BARRETT, 1960, p. 18

³⁷⁵ KROEBER, GIFFORD, 1949, pp. 59/60. The Indian that led the Ceremony of the First Salmon often came from the village Xaslinding, which also belonged to the southern Hupa section of Medilding (KROEBER, GIFFORD, 1949, p. 60).

leaders, with the local permanent leaders (chiefs). This question cannot be answered on the basis of the available ethnographic material.

The Wiyot also erected a large salmon weir, the gates of which were owned by certain families.³⁷⁶ Nothing is said in the literature about the form of the leadership of the collective weir construction.

According to Dixon, among the Shasta the locations for weir construction were owned by certain families.³⁷⁷ Several facts suggest that this ownership title can be understood in the sense of management for a larger circle of relatives. According to Holt, the right to use a fishing spot was transferred to the son of the brother, whereby the own son received a co-usage right.³⁷⁸ Although it is unclear from the text whether weir construction spots or hand net stations are meant, it can be hypothesized that multiple families were involved in the construction of a barrier and that multiple families used each weir.³⁷⁹ According to statements by Dixon, a salmon fishing spot would not be used for two year after the death of a family member³⁸⁰, and this regulation can certainly be linked to the possibility of avoiding sharing fishing spots of related families.

The Karok erected multiple large weirs in the Klamath River (or in its tributaries?), but they were likely not all in use every year.³⁸¹ In any case, they were built via a collective effort; all participants could fish without restrictions.³⁸² According to Kroeber and Barrett's records, it seems that there was only one opening/gate in the Karok weirs. This fact can speak for the function of the Organizers of Salmon fishing, who, among other things, dealt with the division of fish. On the other hand, the fish might have been divided up directly within the work group of three to four Indians that removed that salmon from the weir.³⁸³ The development of a ritualistic leader of weir construction is not demonstrable for the Karok at all weirs.³⁸⁴

The Bear River Indians set up fewer weirs than existing villages.³⁸⁵ This may have led to cooperation between Indians from different settlements, and leadership of weir construction operations by a certain official is not unlikely under these circumstances.

The weirs of the Chilula and Mattole were relatively small in size, and a large-scale cooperation was not necessary for their construction.³⁸⁶ It is notable that according to Kroeber and Barrett a "headman" emerged as a ceremonialist for the Chilula (at a lamprey weir).³⁸⁷

According to all of this, the Organization of Salmon fishing at Kepel may have had many parallels, above all with Karok weir fishing, while for the Hupa it is possible that permanent leaders (chiefs) may have been in charge. It is possible that for the Shasta the extent of weir construction work did not reach the level it did by the Yurok, Karok, or Hupa, so that leadership of operations by members of a certain resident family must be suspected; the ceremonial side of the construction of the weir was probably also less important. In smaller streams in the coastal regions whose residents were, for example, the Chilula and Mattole, communally constructed weirs certainly did not significantly influence the overall salmon catch.

³⁷⁶ KROEBER, BARRETT, 1960, p. 10

³⁷⁷ DIXON, 1907, pp. 428, 452

³⁷⁸ HOLT, 1946, p. 316

³⁷⁹ DIXON, 1907, p. 428

³⁸⁰ DIXON, 1907, p. 452

³⁸¹ KROEBER, BARRETT, 1960, p. 20

³⁸² KROEBER, BARRETT, 1960, p. 21

³⁸³ KROEBER, BARRETT, 1960, p. 20/1

³⁸⁴ KROEBER, BARRETT, 1960, p. 20

³⁸⁵ KROEBER, BARRETT, 1960, p. 10

³⁸⁶ KROEBER, BARRETT, 1960, pp. 21, 26

³⁸⁷ KROEBER, BARRETT, 1960, p. 22

G. Wintu

The economic livelihoods of the nine subgroups of the Wintu bore the mark of the very different landscapes that they resided in.³⁸⁸

The seasonal surplus that some Wintu groups had was preserved³⁸⁹ and a portion of it was used for trade.³⁹⁰ They also sent invitations to other groups in whose waters salmon did not run.³⁹¹

It is very likely that the visitors invited from other Wintu groups to fish mostly participated in collective salmon fishing:

“The river dwelling Wintu in the Bald Hill area used to invite the hill dwellers to communal fish drives. This was the only source of salmon for the latter, although occasional individuals traveled from the hills to the river for a two or three day’s fishing trip.”³⁹²

Collective modes of salmon fishing seem to have been very important for the Wintu:

“In midsummer large communal fishing drives were undertaken on the McCloud and Sacramento Rivers. The relatively warm water of the Pit River was felt to make its fish less desirable. The last communal drive was held at Baird, about 1886. A net was stretched across the river. Men with torches waded downstream driving the fish into the net. Sometimes it was necessary to swim with the torches, a skill which only a few possessed, so that the same persons were repeatedly chosen for the task. In smaller drives no net was stretched across the river, but individuals with dip nets accompanied the torchbearers and scooped out the salmon. The fish were clubbed and strung on a grapevine rendered pliable by twisting. The fishing continued all night and several hundred might be got at one time.”³⁹³

While it can be said with some certainty that the construction of individual fishing stations, the “salmon houses,” was linked with very specific natural conditions in the upper portion of the Sacramento River³⁹⁴, it can only be guessed that fish drives were also only undertaken in especially suitable, in other words, flat, portions of the river. In years with higher water levels in the Sacramento River and its tributaries the fish drivers had to swim, and the task of driving the fish was, therefore, given to specialists. There must have also been a specialist to lead a large fish drive:

“In the morning the leader divided the catch. If several villages were present, as they were during the large midsummer, drives, he simply divided the fish among the leaders of each local group, who in turn gave each adult male his share. As in deer drives, the leader divided the spoil so generously that he himself was often without any; but according to one informant, he usually provided other males within his family group with a quantity large enough to ensure no hardship for himself. Next day the women prepared the night’s catch.”³⁹⁵

Unfortunately, nothing is said in the literature about the qualifications of the leader of a salmon drive. Perhaps a large number of the nets used belonged to him or his family group.³⁹⁶ Maybe he also

³⁸⁸ DUBOIS, 1935, pp. 6-8

³⁸⁹ DUBOIS, 1935, p. 7

³⁹⁰ DUBOIS, 1935, p. 25

³⁹¹ DUBOIS, 1935, pp. 15/6

³⁹² DUBOIS, 1935, p. 16

³⁹³ DUBOIS, 1935, p. 15

³⁹⁴ DUBOIS, 1935, p. 16

³⁹⁵ DUBOIS, 1935, p. 15

³⁹⁶ Nets (large gill or drag nets) served the Wintu and their neighbors as valuable items of trade and their production provided certain specialists with a generous income: “Loisyali was reputed by his nephew to have ‘sat around’ all day making fish nets, quivers, bows, and arrows, and rabbit skin-robos. He traded them to the Wintun for beads. Once he was paid almost one thousand clam-disk beads for a seine. He took bows and arrows to Turtle to trade for salmon. Four or five men went with him to carry back the fish. Then when he got home he divided the salmon up among the people” (DUBOIS, 1935, p. 22). The fact that Loisyali, who lived in the “Bald Hills,” made fish

had supernatural qualities that made him appear suitable as a leader. A Wintu shaman said he possessed a “trout spirit.”³⁹⁷ Cora du Bois writes about another historical figure:

“Waikati was the headman of a large settlement on the McCloud about two miles north of the present United States Hatchery. He owned a large earth lodge and a salmon house and was a shaman of considerable repute. However, he is chiefly distinguished as one of the prime movers in the development of the 1870 ghost dance in the McCloud area, and is usually spoken of as one of the ‘first who began dreaming.’ One informant said of him: ‘He was just called wi “because he gave away salmon.”’³⁹⁸

Because the roles of leader of a large local group, shaman, and “provider” were all combined in the person of *Waikati*, it can be wondered whether he was the leader of communal salmon fishing operations. Perhaps the wording, “He was just called wi “because he gave away salmon,” suggests this³⁹⁹, however it is also said of him that he was “headman of a large settlement.” The fact that he lived on the McCloud River makes it seem possible that he took a leading position in fish drives; on the other hand it is possible that the salmon he gave away he caught at his “salmon house.”

H. Patwin

The social organization of the Patwin was characterized by groups that each included a series of blood relatives in a paternal line.⁴⁰⁰ The most senior of such a group was its leader.⁴⁰¹ Multiple family groups lived in each village, and their Seniors formed a council that⁴⁰², however, only had limited influence under the autocratic leadership of the “village chief.”⁴⁰³ Each village was autonomous.⁴⁰⁴

In the Patwin villages there were so-called “functional families,” that shared the feature of inheriting membership via a paternal line with the groups of blood relatives.⁴⁰⁵ Unfortunately, on the basis of McKerns’ information, nothing can be said about the relationship between the “functional families” and the blood relative groups.⁴⁰⁶

The functional families fulfilled very specific tasks within a village. As a collective they undertook or supervised a series of economic activities and from their ranks appointed individuals for political and religious functions.⁴⁰⁷

nets for “export,” shows the demand that existed for these devices on the McCloud river despite there being such specialists there, too (DUBOIS, 1935, p. 22). The price paid for the “seine net” also demonstrates that possession of such a net must have been seen as a significant factor in the Wintu economy (DUBOIS, 1935, pp. 26/7).

³⁹⁷ DUBOIS, 1935, p. 54

³⁹⁸ DUBOIS, 1935, p. 33

³⁹⁹ The Wintu used “wi” to denote not only hereditary chiefs, but anyone in the community that was some kind of distinguished man (DUBOIS, 1935, p. 30).

⁴⁰⁰ MCKERN, 1922, p. 238

⁴⁰¹ MCKERN, 1922, p. 240. Because it was common for a young man to move to join his wife’s family for a certain amount of time after their wedding, he was supervised by the Senior of that group during this time.

⁴⁰² MCKERN, 1922, p. 244

⁴⁰³ MCKERN, 1922, p. 242-6

⁴⁰⁴ MCKERN, 1922, p. 242

⁴⁰⁵ MCKERN, 1922, p. 246/7

⁴⁰⁶ MCKERN, 1922, pp. 246/7. Non-blood-related members could be incorporated into “functional families” via adoption (MCKERN, 1922, p. 252/3).

⁴⁰⁷ MCKERN, 1922, pp. 247, 250/1

According to McKern there were two “functional families” that dealt with fishing, the “salmon fishing family” and the “common fishing family.”⁴⁰⁸ The “common fishing family” caught smaller fish with a large net and delivered them to the “village chief,” who distributed the fish—just as he did all other forms of food⁴⁰⁹. The duties of the “salmon fishing family” had to do with weir fishing.⁴¹⁰ However, they did not build the weir by themselves; all of the members of a village erected such weirs in a communal effort.⁴¹¹ The descriptive name of the “salmon fishing family” is literally: “who drive fish into a trap.”⁴¹² It is possible that the members of the “salmon fishing family” actually drove the salmon into the weir, but it’s also possible they were thought to possess “supernatural” means by which they led the salmon into the weir. A member of the “salmon fishing family” (its Senior or leader?) had a stone mortar, that was believed to be the drum of a river spirit. Before a salmon fishing operation this member of the “salmon fishing family” would rub the mortar with his hands and speak to the river spirit.⁴¹³

The members of the “salmon fishing family” must have also had special practical knowledge, which must be assumed for the complicated construction of a weir. They probably did not have anything to do with the distribution of the salmon caught at the weir. This distribution was probably regulated by the “village chief.” He determined how many gates in a weir⁴¹⁴ should be used.⁴¹⁵

I. Summary

In attempting to form a complete picture of the function and status of the Salmon Fishing Organizers in several Indian groups of western North America from many scattered, often isolated, or only indirect details, it was possible, with quite a bit of certainty, to draw conclusions, despite the unanswered questions.

Despite a scarcity of sources, it is possible to pinpoint regions where Salmon Fishing Organizers frequently developed. The central and eastern Columbia River Plateau was, without a doubt, the most consistent area of distribution. However, Salmon Fishing Organizers are also reported in the middle reaches of the Snake River and the region of northwestern California (see Map 1).

The hypothesis that in regions where Salmon Fishing Organizers often appeared the factors that led to the development of these Food Chiefs must have been relatively easy to recognize is substantiated. Especially on the eastern Columbia River Plateau, but also in the Snake River Region and Northwest California, a series of economic and social causes could be identified:

1. The eastern Columbia River Plateau lays on the periphery of the salmon range. Not all species reach all waters in this region. This must have led to a strong dependence of the Indian groups fishing there on one certain type of salmon. Furthermore, there was a small possibility, when necessary, to even out the smaller run of one species by catching more of another species. Fluctuations in the strength of the run had to be taken into account on the periphery of the salmon runs. The entire fishing

⁴⁰⁸ MCKERN, 1922, pp. 248/9

⁴⁰⁹ MCKERN, 1922, p. 248. The “village chief” led the economic activities of his community to a large extent (MCKERN, 1922, p. 244/5).

⁴¹⁰ MCKERN, 1922, p. 248

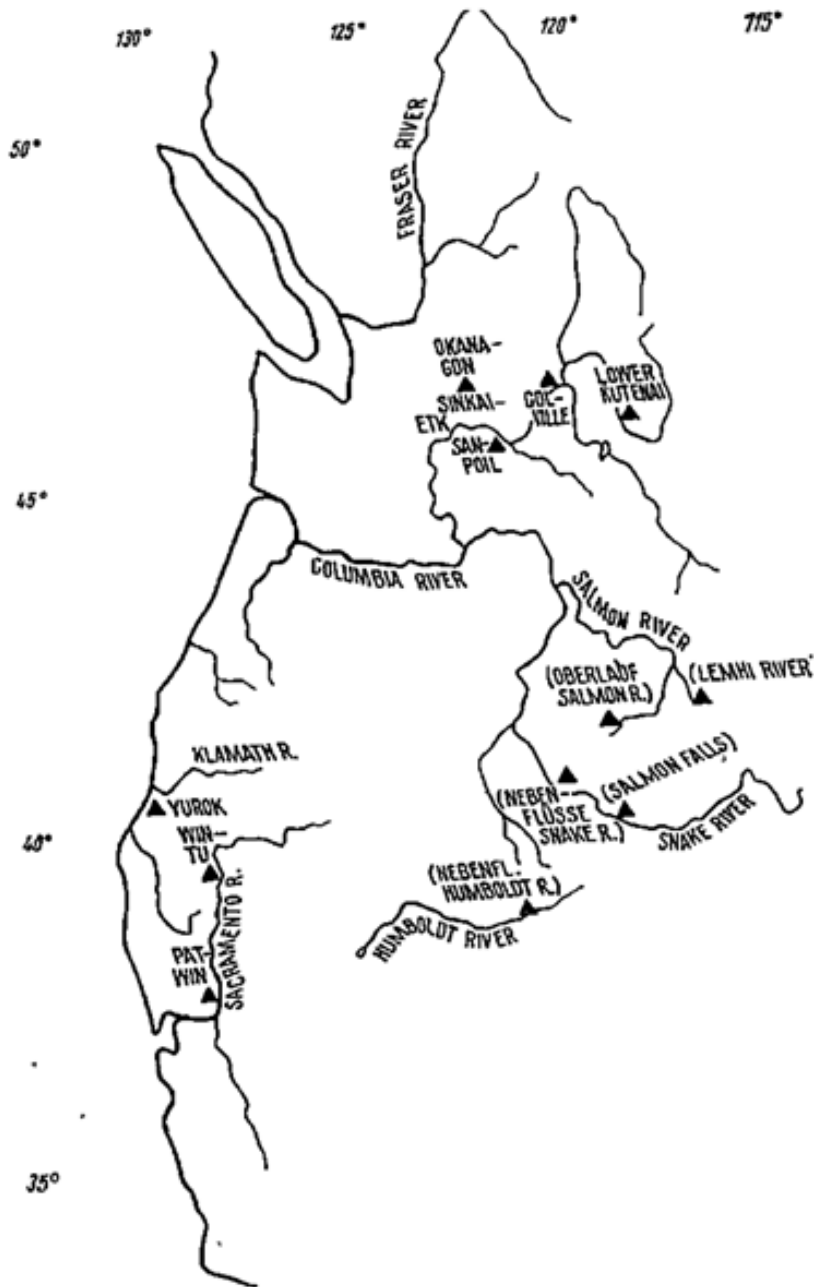
⁴¹¹ MCKERN, 1922, p. 248. Each Patwin village was populated by about 100 to 400 people (MCKERN, 1922, p. 256).

⁴¹² MCKERN, 1922, p. 252

⁴¹³ MCKERN, 1922, p. 254

⁴¹⁴ According to MCKERN, there were always some gates open (!) in the weir, which is suggestive of extensive weir systems (MCKERN, 1922, p. 249).

⁴¹⁵ MCKERN, 1922, p. 249. For other fishing operations, the exact nature of which is unknown, the “village chief” determined the date upon which all members of a village could begin focusing fishing. Before this date fishing was strictly prohibited (MCKERN, 1922, p. 245).



Map 1

Occurrence of Salmon Chiefs or Organizers of Salmon Fishing in Western North America

season was much shorter in many places than near the coast; it had to be especially intensively taken advantage of in many places. The transition from one economic activity to another during the annual cycle occurred without significant breaks. Because all branches of economic livelihood (fishing, hunting, gathering vegetables) were almost equally important for guaranteeing their livelihood, the individual operations had to be scheduled around each other. The temporal variation in the arrival of the salmon from year to year, which was much more noticeable inland, made necessary the timely observation of

the arrival of the salmon and preparation of the weir. One had to keep in mind that this annually fluctuating date had to be coordinated with other activities, most importantly the root harvest.

2. The natural conditions in the region of the eastern Columbia River Plateau were relatively favorable for the construction of large weirs for salmon fishing. The more significant tributaries of the Columbia River offered good opportunities for this. Even the fact that the water level had already fallen quite a bit by the time of the relatively late arrival of the salmon was advantageous for weir construction. Still, the tributaries of the Columbia River were so wide that weirs were only built across the whole width of the stream at a few especially well-suited spots. On the other hand, so many people gathered at these concentration points of weir-fishing that there were plenty of laborers available for the construction of a large weir.

3. The salmon from the communally erected weirs were divided among all Indians present at a salmon fishing center. Not only outsiders from other groups or territories who participated in the fishing operation were included, but also people who were temporarily staying at the weir fishing spot and didn't participate in fishing or preparation. A right to a portion of the catch was acquired just by being present—even only temporarily—at a salmon fishing center. There were probably multiple reasons for this. This can be summed up by the general statement that the overall economic solidarity in a given region must have included a much larger group of people than those that assembled regularly to fish at a salmon fishing center. The division of fish among everyone present may have been a form of counter insurance in case in other years or even just other seasons the resident group itself was forced to travel to neighboring regions to fish for salmon. This equal division could also, to a large extent, have been an expression of “symbiosis,” in which the groups in whose territory the salmon fishing center lay, more or less regularly joined the food acquisition activities (for example bison hunting expeditions or root harvest) of neighboring groups. In addition to this, it should not be forgotten that outsiders at the weir fishing spots were often relatives of the weir builder whose co-usage rights were fixed. Lastly, single men who came to the salmon fishing center to trade or for other reasons (to look for brides or participate in community events) were also included in the salmon distribution; there must have been a general interest in maintaining the most important salmon fishing spots as permanent communication centers and guaranteeing the nourishment of all present.

A main reason for including all Indians present in the division of the catch at salmon fishing centers seems—at least in normal years—to have been due to a daily surplus that could not be immediately used up by the local residents or preserved. However, it should not be overlooked that the division was also conducted when only a few fish were caught. Surely, the leadership or supervision of the daily salmon distribution by the Salmon Fishing Organizers can also be justified by the fact that the mode of division had to be changed from time to time depending on the fluctuating number of salmon caught. Beyond this, despite the general inclusion of all present, there were differences between the “local” Indians and those who came to help work or just by chance. In addition to the necessary supervision of the salmon distribution and the, thereby, intended insurance of a portion for outsiders, the Salmon Fishing Organizer or Salmon Chief probably took up contact with neighboring groups occasionally, as they probably needed to discuss the use of more than one large, closely-spaced salmon weirs in some cases.

4. The appearance of outsiders from different territories and groups at neighboring salmon fishing centers was not unusual. Groups or individuals could also travel to the territories of other neighboring tribes or groups to participate in other food-acquisition activities. In the region of the central and eastern Columbia River Plateau there seem not to have been any or only barely enforced legal boundaries between local group- or tribal territories. There is no evidence that regions rich in forms of food were categorically closed to outsiders. However, it was expected that the local residents would be consulted with and the food resources would be handled correctly. Especially during the summer months, the bands of local groups, which were only loosely organized, anyways, broke up. The familial

relationships determined the geographic relationships between people. Because marriages often crossed local group and even tribal borders, one often left his home territory in summer and joined the food acquisition activities of relatives. Under these circumstances it was not possible for the permanent leaders of the local groups to oversee all members of the group as they harvested vegetables, fished, and hunted. They were restricted to receiving reports about the members of their local groups and leading the core of the group. At the salmon fishing centers the Salmon-Chiefs took over not only the technical and organizational duties, but also maintained, with the distribution of fish, the peaceful coexistence of members of different traditional bands.

5. Fishing with barriers was also practiced in the region of the middle portion of the Snake River and its tributaries. The larger weirs in the Lemhi River were, without a doubt, the product of a communal effort; it must be assumed that they were set up in spring—while the water level was still relatively high. At least in historical times the population density in the Lemhi River Valley was not low. There could never have been a shortage of labor for weir construction.

While it is difficult to make a reliable statement about the extent of fishing activities with barriers in the Humboldt River, there is some evidence that salmon weirs in the Snake river near Salmon Falls were only of small proportions. Here only a few families had to work together.

6. Many waterfalls and rapids in the region of the eastern and western Columbia River-Plateau and the Snake River region were important points of salmon fishing. It can be shown that at the salmon fishing center at The Dalles families of the local Wishram had fixed usage rights to spear and hand net fishing stations; there was no centralized leadership by a Salmon Fishing Organizer here. It was probably different at waterfalls and rapids, distant from permanent villages, that were only seasonally occupied by large numbers of people, along the Snake River and possibly also along the middle reaches of the Columbia River, between the confluence of the Snake River and the tribal territory of the Okanagon. Shoshone from nearby and surely from farther away went to Salmon Falls during salmon season. The Shoshone of the arid northern edge territory of the Great Basin were largely dependent on the salmon runs. They stored a temporary surplus of salmon for the winter months. The extent of preservation seems to have been largely dependent on the ability to transport it to the winter settlements. After the arrival of horses, traveling across large distances became easier. Considering the heterogeneous mixture of salmon fishers at Salmon Falls a coordination of interests was important. Assignment to the use of different river and shore sections was potentially part of this. It's plausible that messages were sent to distant groups to notify them of the arrival of each individual salmon run.

7. Salmon fishing with large basket traps was an especially productive form of fishing developed for rapids and waterfalls. Basket traps were not used at all waterfalls and rapids. At Kettle Falls salmon fishing with nets (hand nets) and spears was also practiced. The construction and maintenance of a large basket trap were surely not the concern of a larger group, but rather seem to have each kept a small group of specialists busy. The high productivity of salmon fishing with basket traps allowed for the distribution of salmon among a large group of people.

8. In northern California, salmon weirs were also often erected by small groups of related people. However, in wide rivers salmon weirs were built that could only be constructed with the collective effort of Indians from multiple local communities. In the example of the Yurok weir at Kepel, it becomes clear that the work it took to build a large salmon weir must have been worth it, even considering other very productive salmon fishing methods (fishing with A-frame nets). The productivity of a large salmon weir was high; a lot of salmon could be caught in a relatively short amount of time. The large weirs were built in early fall when the water level was low; therefore, they may have been especially important for catching salmon intended for preservation. In years that were not as good for salmon fishing, weirs that stretched across the entire width of the river must have been the best way to take advantage of all of the available fish.

9. The frequently reported driving of fish into nets in northern California was, without a doubt, closely linked to the existence of certain natural conditions. Wide, flat stretches of river with a relatively uniform riverbed were especially favorable for holding large, communal fish drives. In the Sacramento River and the McCloud River fish drives in the months of July and August were made difficult some years by high water levels. In such cases the special abilities of some Wintu were required to carry out the fish drive. A centralized leadership of the collective operations with different division of duties for the participating Indians was necessary.

If one rewords the general statements presented in 1-9 about salmon fishing of, above all, the Interior Salish groups (of the central and especially of the eastern Columbia River Plateau) and about the position of fishing within the overall economy, so that they allow for a comparison with other types of economies, one comes to the following comparisons in relationship between (α) *the natural environment and its food sources*, (β) *the modes of food acquisition*, and (γ) *some significant features of the economic and social life of the Indian population of the Columbia River Plateau*.

α) 1. Close interconnection between diverse phytogeographic zones,⁴¹⁶ *diverse natural food resources*, both vegetable and animal in nature, some genera or species distinguished by the frequency with which they appear

2. the food resources are not uniformly distributed across larger regions, but at the points where they appear, are often *very highly concentrated*; little change in the location of their appearance

3. possibilities of procuring vegetable as well as animal food in large quantities are *dependent upon season* (time of ripening, time of migration), but the seasons for each individual genus or species are relatively long (in contrast with the ripening time of plants of the Great Basin), with the exception of the winter months the natural supply of food is sufficient, overlap in appearance of each source of food only during the summer (Salmon runs and the harvest of berries)

4. all sources of food subject to noticeable *fluctuations* in yearly appearance, but in most cases the amount of nutrients is adequate to meet need

β) 1. During the course of the year regular, repeated, *long-distance journeys* for the purpose of food acquisition⁴¹⁷

2. series of different food acquisition activities occurs without significant breaks, necessity for *careful coordination* of the individual plans, but significant overlap in activities only in summer (a problem with scheduling use of laborers not occurring in other seasons: preservation of salmon and berry harvest at the same time by women)

3. *concentration of people in a small area* in the region of intensive food acquisition, when procuring animal foods, also often *cooperation*

4. *movement to neighboring territories* in the case of a cyclical or non-cyclical shortage of a certain form of food in own territory, relief by trading probably difficult in the case of non-cyclical fluctuations, accrual and storage of emergency reserves (able to be stored for multiple years)

γ) 1. *little economic specialization*

2. *stagnation in the development of productive forces*: natural conditions make guaranteeing livelihood possible without using all of the available labor, due to natural conditions productivity of individual methods of food acquisition relatively high even with little technological development, unproductive use of labor when traveling across larger distances during and between food acquisition activities, few opportunities to make use of a surplus of food; considering relative isolation of large regions, mostly intermediary trade on certain trade routes

⁴¹⁶ PIPER, 1906, pp. 10, 34; KROEBER, 1939, maps 2, 3, 4, 5.

⁴¹⁷ See LEWIS, 1906, p. 157; OSBORNE, 1957, p. 130

3. *large “tribal” territories with relatively low population density*⁴¹⁸
4. *little significance of borders* between individual local communities
5. *no exclusive rights* of certain groups to points of intensive food acquisition⁴¹⁹
6. *no fixed, long-term production collective*, changing mixture of participants in different food acquisition activities throughout the year
7. *the individual family as an economic unit* (unit of consumption)
8. *bilateral familial relationships*⁴²⁰
9. *far-reaching familial relationships*, often across “tribal” borders
10. *frequent, long-distance movements of individual families*, even outside of food-acquisition activities, routes often determined by *familial relatives*
10. frequent change of one family to a different local group (“*freedom of movement*”), relatively low stability of local communities, core families held together because they are related
11. *limited authority of the leaders of local communities*; often active as organizers of daily activities, especially food-acquisition; mostly influential by giving “suggestions”
12. *development of Organizers of Food Acquisition (“Food-Chiefs”)* as technical and organizational leaders of cooperative food acquisition projects, as supervisors of places of intensive food acquisition (directing their use), as distributors of the yield of communal food acquisition activities, and as mediator of economic interests of members of different local groups

Although worded differently, and, despite a large degree of overlap in subject matter, sometimes presented under different headings, Steward (especially for the West-Shoshone),⁴²¹ Y. and R. Murphy,⁴²² for the groups of the Great Basin, and, also, more recently, using very similar principles, Suttles’s analysis⁴²³ of the Coastal Salish, illustrate the relationships between a particular geographic environment and its natural food resources, food acquisition by Indian residents, and their socio-economic structure. A comparison with the statements made in in α - γ leads to the following conclusions:

⁴¹⁸ KROEBER, 1939, p. 138: In the Columbia River Plateau region there was also significant variation in population density that corresponded to regional surpluses of certain types of food: In the region of groups with combined fishing, hunting, and gathering economies (Sinkaietk, Sanpoil, Nespelem, and Spokane, among others) the average population density was about 10 people per km², in regions of groups with more hunting (Shuswap, Okanagon, Coeur d’Alene, Pend d’Oreilles) about 2-6 people per km², while in the regions of specialization in river fishing along the lower sections of the Columbia and Fraser Rivers the population density could climb to anywhere from 25 people (Lillooet) to 150 people (Chinook) per km². For comparison it should be mentioned that regions of California that, due to especially favorable conditions, were home to groups that had a combination economy, had a population density from 30-110 people per km² (KROEBER, 1939, pp.136-8).

⁴¹⁹ See LEWIS, 1906, p. 157; DRIVER, 1961, p. 252

⁴²⁰ According to Davenport, bilateral family relationships are typical of communities in which a small collective exercises control over important or limited resources—this can include natural (food) resources (DAVENPORT, 1959, p. 596). This assessment is only correct in that in most cases bilateral family groups did not have control of regions with high availability of food—unlike localized, unilinear family groups—however, Davenport overlooks the fact that—as the present work and Spencer’s investigation of the North Alaska Eskimo demonstrate—in regions with bilateral family groupings a (controlled) appropriation and division of food was also possible in collectives not based on family relations, whose leaders did not function in the capacity of head or Senior of a family group (see pp. 17-20 of the present work; SPENCER, 1959, pp. 62-65, 177-81, 353-7). If the existence of bilateral family groupings is positively correlated with the problem of food acquisition, it is evident that it facilitated wide-ranging economic support of relatives in distant regions with less favorable or at least more widely fluctuating availability of food resources (see pp. 16/7 of the present work; SUTTLES, 1962, pp. 525, 534/5; SPENCER, 1959, pp. 442-9).

⁴²¹ STEWARD, 1938, pp. 230-60

⁴²² MURPHY, 1960, pp. 332-4

⁴²³ SUTTLES, 1960, p. 302; SUTTLES, 1962, pp. 525-36

In the region of the Great Basin the natural food resources were not as diverse as on the Plateau; in large regions a very large percentage of them consisted of vegetables (many genera and species with very different locations, their distribution often sporadic); the ripening times of individual species were very short and the opportunities for harvest, thereby, limited. There were very large fluctuations in the amount available (in the case of *Pinus cyclical?*); due to the annually changing rainfall patterns, the best spots to harvest vegetables changed.

These particular features of the natural environment of the Great Basin have, in recent times, especially *in the region of the western Shoshone groups, been key contributors to the disintegration of their economic and social life*: the fragmentation of the local communities was greater than it was among the Interior Salish groups; larger regions were covered by one family in the search for food. Here, in certain places, there were also leaders of communal food acquisition efforts (especially hunting) that took over the temporary leadership of Indians from multiple territories (see the data on Shoshone in the present work).

For the most part, the same socio-economic relationships were encountered among the Coastal Salish groups as among the Interior Salish groups. However, there was also a tendency for the development of *stronger ties of family groups (extended families) to certain territories of intensive food acquisition, whereby the leaders of these family groups emerged as managers of these territories*.⁴²⁴ This tendency was probably due to the comparatively high level of specialization in fishing and a concentrated and also relatively constant availability of food in certain smaller regions (or especially good opportunities to acquire food at these places). According to Suttles, the fact that diversity of natural resources and a noticeable fluctuation in their appearance can be considered causes for the development of bilateral familial structure with far-branching family relationships and frequent movement of families here, is also confirmed by the fact that in the region of the northern Northwest coastal groups (in the territories of the Tlingit, Haida, and Tsimshian), as the number of plant and animal species decreased, the number of individuals of each species increased, their appearance became more concentrated, and, finally, yearly fluctuations in their appearance became smaller, the fixed relationship of unilinear familial groups to certain territories became a significant feature of social organization in this part of the Northwest coast.⁴²⁵

The development of Organizers of Food Acquisition in relationship with a certain type of economy and social organization, as demonstrated in this paper, can be seen as a starting point for investigations of historical, and some extant, forms of organization of food acquisition in other regions. It is reasonable to predict that comparable states of affairs will be found, especially in regions *that, due to diverse phytogeographic conditions, offered populations good means of subsistence with a relatively low level of development of productive forces*⁴²⁶, *but, due to their geographic isolation, stagnated their development*. It is plausible that the past, and in some places present, economy and social organization of the population, especially in the southern transition zone, of the boreal forest could provide ethnographic material for comparison.⁴²⁷

⁴²⁴ SUTTLES, 1958, p. 502

⁴²⁵ See DRUCKER, 1955, pp. 116/7

⁴²⁶ It is reasonable to use the economic-cultural type of combined hunting and fishing economy in the Taiga zone, which is seen as the foundation for the cultural development of many Siberian tribes, for comparison. For this economic-cultural type see LEVIN, ČEBOKSAROV, 1955, pp. 4/5.

⁴²⁷ In the northwestern region of North America the boreal forest offered good opportunities for hunting individually (in recent times trapping is becoming more and more common) for various forest animals (deer, elk, mountain goats, mountain sheep, beaver, bear, marmot, weasel, martin, caribou); for more see the reports on the Kaska by HONIGMANN (1954, pp. 31-7) and by JENNESS on the Bulkley-Carrier (JENNESS, 1943, pp. 530/1), as well as TEIT and EMMONS on the Tahltan (TEIT, 1906b, p. 343; EMMONS, 1911, pp. 9-11).

Farther north, but still in the Taiga zone, caribou hunting—sometimes in the form of collective drives—became more and more popular (see McKennan on the Upper Tanana; MCKENNAN, 1959, pp. 21, 32, 47/8), until in the tundra region the communally-executed caribou battues, led by a certain person, were the main method of food acquisition for the Eskimo groups of the interior of northern Alaska (SPENCER, 1959, pp. 27-31, 353-7).

To supplement the attempted proof, demonstrating fixed relationships between a certain type of natural environment, certain modes of food-acquisition, and a series of social institutions (above all the leadership of economic life), Leeds' investigations of the economic management of the Yaruro Indians of Venezuela give important clues. Leeds demonstrates that in this ethnic group there was no need to regulate economic life above the family level. Their type of economic management, which is fundamentally different from the types characterized in the present work, is based on Cassava farming (approximately 40% of their diet), which is supplemented by hunting, fishing, and gathering vegetables (about 60% of their diet). Although the Yaruro, thus, also represent a type of combined food-acquisition, the information from Leeds about the character of the natural environment and the modes of food acquisition indicate an almost diametric difference from the corresponding information on groups from the Columbia River Plateau. This difference has nothing to do with the obvious differences between the forest and steppe regions of the subarctic and temperate zones and the tropical rain forest, but pertains to fundamentally comparable categories of amount, diversity, distribution/geographic location, seasonality, and fluctuation of the natural food supply, as demonstrated above. The following are named by LEEDS as the most important characteristics of the relationship between environment and economic management of the Yaruro: 1. Scattered distribution of the natural food sources, 2. Relatively little seasonal variation in availability of food, 3. Little fluctuation in natural supply of food (not even over long periods of time), 4. Little surplus of any form of food (almost no preservation), 5. Individual methods of food acquisition, 6. No significantly above-average labor required for the individual food acquisition activities, no specialization of individual people in certain forms of food acquisition, 8. Low population density and, therefore, few opportunities for large-scale cooperation (LEEDS, 1962, pp. 599-607).

**Table 1
Duties, qualifications, and social status of Salmon Chiefs (SC) or Organizer of Salmon Fishing (OSF)**

Source	RAY, 1932	ROSS, 1932	SPIER, 1938	WILKES, 1945	KANE, 1859	TURNER-Y. HIGH, 1941	WYETH, 1851	STEWART, 1938	STEWART, 1938	STEWART, 1938	STEWART, 1938	WATERMAN, KROEBER, 1938	DUBOIS, 1935	MCKERN, 1922
Group or Location	Sappoil and Neapalem	Okanagan	Sinkiaiek	Colville (Kettle Falls)	Colville (Kettle Falls)	Lower Kluensat	Salmon Falls	Tribunaries of Snake River	Upper Section Salmon River	Lemhi River	Humboldt River	Y'uok	Winnu	Parvin
a) from Indians	x				See-pays							vi-lo-heg		
b) from Authors	Salmon Chief	(one or more of the principal men)	(head-man)	(one of the chief men of the village)	"Chief of the Waters"	Fishing Chief	(some person called a chief)	director	fish chief	leader	director	dam chief	leader	salmon fishing family
a) during weir fishing	x	x	x			x (trouf)		(x)		x		x		
b) during other collective operations				(x)	(x)								x	
c) during non-collective operations							x							
determining timing of fishing operations	x		x			x	(x)					x		
determining location of fishing operations	x		x				(x)							
inspecting materials to be used	x													
division and direction of labor	x		(x)									x		
directly helped with labor	x					x						(x)	(x)	
on-going supervision of fishing operations and complex	x	x				x				x		x		
supervising retrieval of the catch	x					(x)				x	(x)			
division of the catch or its supervision	x	x	(x)	x	x	x		x		(x)	(x)		x	
a) awarded extra share of catch	x													
b) special right to particular fishing device					x			(x)						

Source	RAY, 1932	ROSS, 1932	SPIER, 1938	WILKES, 1845	KANE, 1859	TURNNEY-HIGH, 1941	WYETH, 1851	STEWARD, 1938	STEWARD, 1938	STEWARD, 1938	STEWARD, 1938	WATERMAN, KROEBER, 1938	DUBOIS, 1935	MCKERNY, 1922
Group or Location	Sarpoil and Negealem	Okanagon	Sinkiaek	Colville (Kettle Falls)	Colville (Kettle Falls)	Lower Kutenai	Salmon Falls	Tributaries of Snake River	Upper Section Salmon River	Lemhi River	Humboldt River	Yurok	Winb	Patwin
absolute authority in all matters related to fishing	x	x	(x)		x	(x)								
notifying the chief and coming to agreements with him	x		x											
elected or appointed to position	x	x												
"hereditary" of the position (traditionally passed on to a relative)	x											x		
option to not inherit the position or give it up	x		x											
possession of special guardian spirits for salmon fishing	x		x											
"summoning" fish with help of guardian spirits	x													
"reconciliation" with fish after breaking of taboos	x													
punishment of taboo-breakers by SC or OSF	x													
personal union between SC or OSF and shamans	x													
altercations with shamans affecting outcome of catch	x													
Performing or supervising the Ceremony of the First Salmon	x		(x)											
Regulating salmon fishing before the Ceremony of the First Salmon	x													
influencing the catch via knowledge of a prehistoric myth												x		

b) Table 1 offers an overview of the most important functions and of the social status of the Salmon-Chiefs in different tribal groups of western North America. The gaps are explained by the statement regarding sources at the beginning of this work. Despite this, it is recognizable that some basic functions dominate the picture; they appear again and again, though sometimes are less important or missing altogether, and create, thereby, local variations in the development of Salmon-Chiefs.

1. In many cases the technical leadership of fishing operations was an important duty of the Salmon-Chiefs; this was certainly the case anywhere where weir fishing was practiced. Among the Yurok—where the distribution of caught salmon did not play any role and negotiation with outsiders was probably not very important—the technical and organizational leadership was the most important of the practical duties of the weir construction specialists. A detailed knowledge of the location, familiarity with the behavior of the fish, and, not least, the annual observation of the always changing conditions for the best use of particular salmon fishing devices were, in a more general sense, all part of technical leadership. Only a specialist that had carefully observed the conditions of a section of the river for a long time and had gotten essential experience building weirs or using other fishing devices could meet all of these requirements and be able to complete the tasks mentioned. It is hard to imagine that the technical leaders of larger projects changed very frequently.

2. Centralized management of labor was, understandably, especially important for the construction of large weir systems—the construction of which required many people to work for just a short period of time. A firm, centralized management familiar with all circumstances was especially important, for example, among the Lower Kutenai, where many weirs had to be built one after another in a short period of time to keep up with the receding floodwaters. Even at Kepel, where many processes were determined ahead of time by traditional regulations, it seems that a central manager of the work groups, which were each assigned different tasks, was indispensable.

3. The authority of a universally accepted leader was also a basic requirement for the daily distribution of caught salmon reported at many weir camps. Only Kepel, with its fixed group rights to gates in the weir, is an exception. The division of the salmon was justified by the participation of all Indians gathered in the production collective at a salmon fishing center; most of those present usually took part in the collective construction of large barriers. At large dam systems with only a few gates or at the large basket trap at Kettle Falls, division of fish was also made necessary by the number and the size of the retention tanks.

The division of salmon among the Flathead (see Part II) under the supervision of a permanent group leader suggests that in the absence of outsiders and at smaller weir systems distribution did not necessarily have to be overseen by a specialist.

The regulated assignment of Indians to certain spear or hand net fishing places is comparable to the regulated distribution of caught fish. This regulated division of the catch is also comparable with the agreements between Salmon Fishing Organizers that led to the temporal coordination of deployment of salmon weirs with other groups living on the river and via which the appropriation of a certain portion of the natural supply of fish was determined and regulated. Although these assignments and agreements were also part of distribution, they are distinct from the distribution of salmon, or the distribution for the purpose of consumption, in that in these cases it is means of production that being distributed.

It is understandable that older sources, especially, do not say much about the esoteric practices of some of the Salmon Fishing Organizers for guaranteeing a good salmon catch, as well as the survival of all people. However, based on the monographic information, we can be quite sure that all Salmon-Chiefs attempted to influence the catch in some way that was not merely technical or organizational. While the Salmon-Chiefs of the eastern Columbia River Plateau always used “guardian spirits” to establish a firm connection between the salmon and the Indians, the Yurok Salmon-Chief compelled the salmon to return consistently each year by reenacting a mythological story. It certainly does not need to be explicitly emphasized that the possession of either “guardian spirits” or a mythological story tied the

function of a Salmon-Fishing Organizer to a small group of people and established the social status of the Salmon Fishing Organizer within his community and with respect to outsiders.⁴²⁸

c) The status of the Salmon-Chiefs or Salmon Fishing Organizers within their community was determined by a whole series of factors. Here, geographic variation in the development of Salmon Fishing Organizers can also be recognized:

1. The social status of a Salmon Fishing Organizer rested largely upon special knowledge, abilities, experience, and, not least, according to Indian beliefs, relationships with superhuman entities.

Unfortunately, information pertaining to the rights of the Salmon Fishing Organizers with regard to the means of production is less conclusive. There are two reasons for this: for one, both the older and the modern literature describe the legal relationships of Salmon Fishing Organizers to fishing spots and fishing devices only very vaguely—if at all—and it is always in relation to the portion of the catch that the Salmon Fishing Organizer keeps when dividing the caught fish. It seems that the extra portion that the Salmon-Chief kept during this distribution is to be interpreted as compensation for his special duties and not as stemming from perceived traditional rights. Only at the small weirs of the Shoshone near Salmon Falls may a firmer legal claim by the Salmon Fishing Organizer to the portions of the river in which weirs were erected have contributed to their superior status during the appropriation of the salmon. The problematic relationship of the Salmon-Chief at Kettle Falls to the large basket trap was described in detail: in this case it cannot be determined whether this represents the first step toward the development of private ownership of important means of production.

2. The need for Salmon Fishing Organizers to be able to execute special tasks resulted in there being very specific qualifications for appointment as Salmon-Chief. It has already been said that the circle of people considered for this role was probably always small. However, in the case of the Sinkaietk, it is likely that there were multiple Salmon Fishing Organizers within a tribe at the same time. It also likely that continued occupation of the position depended on how successful a Salmon Fishing Organizer was. Thus, it can be assumed that a Sinkaietk Salmon Fishing Organizer did not always hold his position for life. In contrast, it seems that among the Sanpoil the position was normally taken over by another member of the same family. However, here it is also likely that succession was not understood as a mere formality. Only those who possessed a powerful “salmon power” could take over the position of Salmon Chief from a relative.

In addition to the self-declaration of individual Sinkaietk specialists as organizers of planned fishing operations and the passing on of the position of Salmon Chief to members of the same Sanpoil family, a third mode of succession was the appointment of weir construction leaders via selection by the Indians gathered at the fishing spot, as Ross writes of the Okanagon. Considering the few historic sources on how Salmon Fishing Organizers came into power, the three mentioned possibilities cannot be seen as a historical development series. The Sinkaietk Salmon Fishing Organizers, as specialists of food acquisition in a weakly institutionally stabilized position, can be compared with the specialized hunters and fishers that once appeared in other communities of western North America. However, it becomes clear that these hunters or fishermen occupied only a marginal position in the economic life of most groups, that they occasionally became more involved in social life by providing food for community events, and these hunters and fishermen mostly practiced their specialized form of hunting or fishing individually, while the Sinkaietk Salmon Fishing Organizers were leaders of group efforts. Still, the wording used by Steward with regard to weir fishing on the Lemhi River, “Any interested men were leaders,” suggests that when it came to salmon fishing, the non-traditional take-over of control of community projects by a person with considerable experience could be more important than the social status of leaders of community projects.

⁴²⁸ SPIER, 1926, pp. 328, 360-2; GAYTON, 1948, pp. 70/1, 220, 261.

3. Except for in the case of the Sinkaietk, the rights and requirements of the Salmon Fishing Organizer seem to have been carefully distinguished from those of the permanent leader of the community. The Salmon-Chiefs only had temporary positions. During this time, they were largely independent from the command of the permanent leader. The authority of the Salmon Fishing Organizer was not only limited to salmon fishing season, but also, by all accounts, to a given salmon fishing center. The limited authority of the Salmon Fishing Organizer in comparison with local group leaders (chiefs) must have been founded on their relationship with the realm of the "guardian spirits."

4. The efforts of shamans and Salmon Fishing Organizers to guarantee a good salmon catch probably overlapped in some groups. A personal union between a shaman and a Salmon-Chief may also have occasionally existed, as is reported for the Sanpoil. However, it cannot be assumed that shamans and Salmon Fishing Organizers always had the same interests. Among the Sanpoil, shamans tried to work against the efforts of Salmon Chiefs, who were shamans themselves.

II. ORGANIZATION OF SALMON FISHING BY CHIEFS, INFLUENTIAL PEOPLE, OR HEADS OF FAMILY GROUPS

A. *The Fraser River Region (Thompson, Shuswap, Lillooet)*

In the economy of the Fraser River tribes, the importance of salmon fishing varied between subtribal groups. Of the Thompson, the “Lower Division” on the Fraser River between Spuzzum Creek and Cisco fished the most salmon.⁴²⁹ Among the Lillooet the “Lower Division” (on the Lillooet River and Lillooet Lake), especially, also dedicated themselves to salmon fishing.⁴³⁰ Of the Shuswap, above all, the “Fraser River Division” and the “Cañon Division” on the upper portion of the Fraser River engaged in salmon fishing.⁴³¹

In the Fraser River a salmon run could be expected every year, in fact, the salmon sometimes nearly made it into the Thompson River. The Indians on the Fraser River mostly preserved Chinook salmon, the groups on the Thompson River, Sockeye, which appeared here in great numbers every four years; fishing for Sockeye probably played an important role in the Fraser River region, as well.⁴³² When there was a poor Sockeye run, pink salmon were fished in the Thompson River⁴³³, Coho salmon appeared first in September shortly before the fall hunting season,⁴³⁴ and Chum salmon were obtained by the Lower Thompson via trade with coastal tribes.⁴³⁵

a) *Thompson*

There were not any concentrated points of salmon fishing along the Fraser River in the Lower Thompson territory. Bancroft writes:

“On the Fraser, which has no falls in its lower course, fishing is carried on all along the banks of the river instead of at regular stations, as on the Columbia.”⁴³⁶

According to Teit, the Lower Thompson hardly used weirs, but rather preferred hand nets⁴³⁷; he finds an explanation for this in the river environment of the lower portion of the Fraser River: the quick current drove the fish near the shore, the murky waters of the lower portion of the Fraser River allowed the salmon to swim into nets, and nature itself had created the best conditions for erecting hand net stations with countless rocky projections into the river.⁴³⁸ Thus, in the Fraser River Canyon there was hand net station after hand net station; this corresponded with the distribution of the large population among many small villages that were lined up only a short distance from each other along the Fraser River.⁴³⁹ These villages were stable, were inhabited by the same group of people long-term, and were largely independent from each other.⁴⁴⁰

⁴²⁹ TEIT, 1900, p. 230

⁴³⁰ TEIT, 1906a, p. 222

⁴³¹ TEIT, 1909, p. 513

⁴³² TEIT, 1900, pp. 230/1, 238/9, 251; TEIT, 1906a, p. 224; TEIT, 1909, p. 518

⁴³³ TEIT, 1900, p. 230/1

⁴³⁴ TEIT, 1900, p. 245/6, 239

⁴³⁵ TEIT, 1900, p. 259

⁴³⁶ BANCROFT, 1875, p. 261

⁴³⁷ TEIT, 1900, p. 249, 251, 254

⁴³⁸ TEIT, 1900, p. 249-51

⁴³⁹ TEIT, 1900, p. 168/9, 175

⁴⁴⁰ TEIT, 1900, p. 168/9, 178

Considering the high productivity of hand net fishing—the Lower Thompson traded many dried salmon⁴⁴¹—and considering that one family could provide the labor to construct and maintain a station, it is understandable that the hand net stations were considered part of a family’s heritable property.⁴⁴² Apart from this, only deer hunting spots with converging fences were under the control of families; in the rest of the tribal territory there were no individual rights to property.⁴⁴³

Judging by the available literature, the Lower Thompson had no need to organize salmon fishing above the family level.

b) Shuswap

Salmon fishing with hand nets—here from platforms—was also the most important fishing method for the Shuswap⁴⁴⁴, but, especially on smaller streams, they also practiced weir fishing.⁴⁴⁵ Especially in less favorable salmon years, outsiders from other groups would also gather at these weir fishing spots,⁴⁴⁶ and it is plausible that the collective weir fishing was led by a specialist. However, Teit does not say anything about this; he writes only that the communal deer hunts of the Shuswap had special leaders that were in charge of ensuring an equal distribution of the catch among the participants.⁴⁴⁷

The Indians of the “Cañon Division” were a bit different from the rest of the Shuswap. This group lived in a small area—about 700 people⁴⁴⁸—in the best Shuswap salmon fishing region on the lower portion of the Chilcotin River and at its confluence with the Fraser River:

“The rapids of Chilcotin River at the mouth of the Cañon were probably the most important salmon-fishery in the whole Shuswap country.”⁴⁴⁹

The mention of rapids also makes the use of hand nets by the Indians of the “Cañon Division” likely. While the hand net stations of the Shuswap generally weren’t in the traditional control of a particular group of people⁴⁵⁰, all of the salmon fishing spots of the “Cañon Division” were in the power of a heritable upper class, the “nobility.”⁴⁵¹ The extended families of the upper class marked the best fishing spots with their “crests.” All Indians of the “Cañon Division” that were not part of the “nobility,” and all outsiders, had to pay the members of the appropriate “crest group”⁴⁵² a fee in exchange for the use of a fishing spot; if they fished without permission, they would be driven off.⁴⁵³ Payment consisted of, among other things, dried salmon and fish oil.⁴⁵⁴

Considering the important position of the “Cañon Division” in intertribal trade, in which salmon and salmon oil were largely involved, the interest of the upper class in this payment and the safeguarding of

⁴⁴¹ TEIT, 1900, p. 258-60

⁴⁴² TEIT, 1900, p. 294

⁴⁴³ TEIT, 1900, p. 293/4

⁴⁴⁴ TEIT, 1909, pp. 524; DAWSON, 1892, pp. 15/6

⁴⁴⁵ TEIT, 1909, pp. 524; DAWSON, 1892, pp. 15/6

⁴⁴⁶ TEIT, 1909, p. 572/3

⁴⁴⁷ TEIT, 1909, p. 569, 573

⁴⁴⁸ TEIT, 1909, p. 464

⁴⁴⁹ TEIT, 1909, p. 525

⁴⁵⁰ TEIT, 1909, p. 572

⁴⁵¹ TEIT, 1909, p. 582

⁴⁵² TEIT, 1909, p. 576

⁴⁵³ TEIT, 1909, p. 583

⁴⁵⁴ TEIT, 1909, p. 583

their salmon fishing rights is understandable.⁴⁵⁵ This trade was completely in the control of the upper class.⁴⁵⁶

c) Lillooet

In addition to weir fishing, hand net fishing for salmon also played a large role for the Lillooet, perhaps because they—especially the Lower Lillooet—fished for salmon on broad murky stretches of the river.⁴⁵⁷ Teit mentions multiple centers of salmon fishing with hand nets on the Lower Lillooet River, possibly at rapids—as in the case of the Skookum Chuck Rapids.⁴⁵⁸ On the Fraser River, the Upper Lillooet, like the Thompson and Shuswap, practiced hand net fishing “at different places.”⁴⁵⁹ Among the Lillooet there were fishing spots that were passed down within families⁴⁶⁰ and, therefore, must have been subject to traditional use by this family; they were probably hand net stations. Teit writes that the Lower Lillooet held a Ceremony of the First Salmon at every fishing spot and the clan leader oversaw the ceremony.⁴⁶¹ Because this ceremony was not only conducted at weirs, it can be hypothesized that the clan leader supervised different family fishing spots as representative of a larger family group. The large salmon weirs must have each been used communally by a clan, as the clan groups had legal rights to the spots for weir fishing.⁴⁶² Therefore, this form of salmon fishing was tightly legally bound to clan groups, but it appears very improbable that clan leaders performed any sort of administrative function at the large salmon weirs, as they did at the berry grounds:

“All the large berry-patches in the villages and on the lower parts of the mountains were under the supervision of the clan chiefs, who saw to it that no berries were picked before the proper time, and that the equal rights of all were guarded. Nevertheless, the berry-patches were common property; and people of all clans had the right to pick any patch; so long as they did so at the proper season. When about ready to pick the first berries, each chief gave notice to his own people, to the neighboring clans, and even to other tribal divisions, telling them when he would start picking, and inviting them to come.”⁴⁶³

B. The Western Columbia River Plateau (Wishram)

Unfortunately, we do not have the same amount of monographic information about the tribes of the western Columbia River Plateau as we do about many territories of the eastern Plateau; therefore, the reports of travelers of the previous century are especially valuable. However, these travelers moved almost exclusively along the larger rivers. They often met Indians on the Columbia River and the Snake River that fished for salmon at rapids and waterfalls⁴⁶⁴, which makes it probable that spear and hand net fishing were the most important methods of catching salmon on the western Columbia River Plateau. Additionally, there is evidence, especially on the lower portion of the Columbia River, of the use of drag nets.⁴⁶⁵ However, weir-fishing must have also played a role that should not be underestimated, as

⁴⁵⁵ TEIT, 1909, p. 535

⁴⁵⁶ TEIT, 1909, p. 582

⁴⁵⁷ TEIT, 1906a, p. 227/8

⁴⁵⁸ TEIT, 1906a, p. 227/8

⁴⁵⁹ TEIT, 1906a, p. 228

⁴⁶⁰ TEIT, 1906a, p. 255

⁴⁶¹ TEIT, 1906a, p. 280

⁴⁶² TEIT, 1906a, p. 256

⁴⁶³ TEIT, 1906a, p. 256

⁴⁶⁴ FREMONT, 1845, p. 186; LEWIS and CLARK, 817, II, pp. 228/9, 236, 239; III, p. 220; FARNHAM, 1843, pp. 163, 202; IRVING, 1869a, p. 377; WILKES, 1845, 4, pp. 380, 382, 384, 386, 388/9; ROSS, 1849, pp. 127, 140/1

⁴⁶⁵ THOMPSON, 1916, pp. 486, 488/9, 495/6, 512, 520, 526

suggested by the modern monographs on the Sinkaietk and Sanpoil and the description of Okanagon salmon fishing by Ross, who, in 1830, lived among them for a longer period of time.⁴⁶⁶ Weir fishing was, without a doubt, mostly limited to tributaries and then must have only been possible relatively far from the confluence with the main river. Thus, it was largely removed from observation by early travelers.⁴⁶⁷

At rapids on the Columbia River and the middle reaches of the Snake River, Lewis and Clark, Thompson, Ross, Farnham, and the members of Wilkes' expedition encountered many large groups of Indians, several tens or hundreds of people, fishing for salmon.⁴⁶⁸ Although the use of spears or hand nets makes a traditional large-scale cooperation unlikely, it is possible that at rapids and waterfalls there was some general regulation of salmon fishing, in the sense of coordination of all interests. The appearance of Organizers of Salmon Fishing at Salmon Falls in Shoshone territory supports such a supposition.⁴⁶⁹

The few detailed statements about the regulation of fishing at rapids on the western Columbia River Plateau were delivered by Spier and Sapir and Curtis in their descriptions of Wishram salmon fishing. These tribal groups occupied the territory of the once famous trading post in western North America, The Dalles, on the lower portion of the Columbia River. The Dalles was not only a key point of trade, but also a salmon fishing center.⁴⁷⁰ The highly branched portion of the river created good opportunities for spear and net fishing in a small area. This is reported by the travelers of the previous century⁴⁷¹, Spier, Sapir⁴⁷², and Curtis.⁴⁷³ There was a series of permanent stations for hand net and spear fishing that, according to Spier and Sapir, were each the "property" of six to ten related old men.⁴⁷⁴ Considering the patrilocal marriages of the Wishram⁴⁷⁵ and the fact that one of their villages consisted of about eight houses⁴⁷⁶, these elders can be seen as representatives of extended families, and it can be assumed that one fishing station was jointly used by one village.⁴⁷⁷ According to Spier and Sapir a "chief" or "headman" functioned as supervisor for each salmon fishing station.⁴⁷⁸ Even considering that the Wishram had multiple chiefs at the same time⁴⁷⁹, it is not likely, that "chiefs" were active as supervisors for the fishing stations of the 19 Wishram villages. It is much more likely that each had a "head man" that, as the oldest man of the village, oversaw salmon fishing. It is possible that he determined the time for construction of the platforms, and he perhaps also completed religious tasks that were related to

⁴⁶⁶ See pp. 14-18, 23/4 of the present work.

⁴⁶⁷ See pp. 14-18, 23/4 of the present work. According to Lewis and Clark (1817, III, pp. 154/5) it can also be assumed that the weir near the mouth of the Walla Walla River was on the Walla Walla River itself. Weir systems that did not reach across the entire river were set up on the Snake River, between islands in the river (IRVING, 1869a, pp. 377/8). According to the report by FREMONT (1845, p. 169) however, there may have also been weir systems in the Snake River near Salmon Falls that went across the entire river.

⁴⁶⁸ LEWIS, CLARK, 1817, III, p. 220; THOMPSON, 1916, pp. 495/6; ROSS, 1849, pp. 127/8; FARNHAM, 1843, p. 163; WILKES, 1845, 4, pp. 380, 382.

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⁴⁷⁰ ROSS, 1849, pp. 127/8

⁴⁷¹ WILKES, 1845, 4, pp. 384/5; IRVING, 1869, pp. 101/2

⁴⁷² SPIER, SAPIR, 1930, p. 175

⁴⁷³ CURTIS, VIII, 1911, p. 95

⁴⁷⁴ SPIER, SAPIR, 1930, p. 175

⁴⁷⁵ SPIER, SAPIR, 1930, p. 221

⁴⁷⁶ SPIER, SAPIR, 1930, p. 171

⁴⁷⁷ The statements by CURTIS (VIII, 1911, p. 95) contradict the reports of SPIER and SAPIR to a certain extent; they allow for the conclusion that fishing stations were owned by one extended family. According to Curtis, the head of the family allocated usage of salmon fishing station to his sons, and when the household grew too large, members of the family paid to use other stations

⁴⁷⁸ SPIER, SAPIR, 1930, p. 175

⁴⁷⁹ SPIER, SAPIR, 1930, p. 211

salmon fishing. It is not very likely that he was a very influential leader of salmon fishing, as, considering the fact that the families of a village were related, the rights of each fisher must have been clearly spelled out. It can, thus, be hypothesized that the “head men” established regulations each summer when Indian groups came from far way to Wishram territory to gather at The Dalles. However, as much as this concentration of people at The Dalles was due to salmon fishing, the outsiders from other groups, according to Ross’s testimony, did not personally participate in salmon fishing.⁴⁸⁰ Although, at certain times of the year, in addition to salmon fishing at hand net and spear fishing stations, spear fishing was practiced along the shore and along the sandbars or rock formations in the Columbia river, it could not have been very significant. According to Curtis, both the Wishram and—for a certain period of time—outsiders from other groups paid to use hand net stations.⁴⁸¹ Based on this, even considering the participation of strangers in salmon fishing at The Dalles described by Curtis, a more systematic integration of outsiders into the salmon fishing activities is not very likely; the inclusion of outsiders occurred via individual agreements at each station.

It can be hypothesized that hand net and spear fishing at stations with specific fixed property and usage rights was not necessarily typical for salmon fishing at rapids on the western Columbia River Plateau. The development of permanent salmon fishing stations, and with them property and usage rights, was probably due to the fact that salmon fishing at The Dalles occurred directly at permanent Wishram villages. It is doubtful that regulation of salmon fishing via permanent property and usage rights was common for other salmon fishing points at rapids or waterfalls where during salmon fishing season, three or six times as many people practiced hand net or spear fishing as lived there year-round.⁴⁸² This brings us back to the question posed above, whether the management of salmon fishing there likely followed the same principles as at Salmon Falls.

C. Flathead

In more recent times the bison hunt on the Plains has taken on a dominant position in the economic life of the Flathead. Before the acquisition of horses, fishing was much more important for the nourishment of this tribal group.⁴⁸³ Thus, fishing, and especially trout fishing, was probably practiced throughout the year.⁴⁸⁴ Trout fishing seems—at least according to historical records—not to have resulted in seasonal cooperation of larger Flathead-groups, as it did among the Kutenai. Though Turney-High is vague, according to his reports it can be assumed with some confidence that weir-fishing was only seldom used for trout fishing.⁴⁸⁵ While the Upper Kutenai left the trout to the Plains Indians during the spring spawn, the Flatheads returned later from the winter buffalo hunt and practiced no other significant economic activities until the beginning of “bitterroot season” (end of April-May).⁴⁸⁶

In contrast to trout season in spring, salmon season in summer did not overlap with the Plains fishing as much. The summer buffalo expedition of the Flatheads only remained east of the Rocky Mountains for a short time.⁴⁸⁷ According to Turney-High, the Flatheads set out to start salmon fishing

⁴⁸⁰ ROSS, 1849, pp. 127/8

⁴⁸¹ CURTIS, VIII, 1911, p. 95

⁴⁸² LEWIS, CLARK, 1817, II, pp. 225, 229, 236, 239, 256/7, 264/5, 270; WILKES, 1845, 4, pp. 336, 380, 388/9; ROSS, 1855, p. 213. Platforms for salmon fishing may have also been erected on the Snake River (ROSS, 1855, pp. 260/1), and Shoshone groups may have also developed fixed family usage rights to such stations.

⁴⁸³ TURNEY-HIGH, 1937, p. 123

⁴⁸⁴ TURNEY-HIGH, 1937, p. 123/4

⁴⁸⁵ TURNEY-HIGH, 1937, p. 123/4

⁴⁸⁶ TURNEY-HIGH, 1937, p. 122

⁴⁸⁷ TURNEY-HIGH, 1937, p. 116/7

when the water level in the rivers fell again in the summer.⁴⁸⁸ This timeline fits well with Rostlund's report that the salmon enter the Columbia River in spring and don't reach the Snake and Salmon Rivers until June or later.⁴⁸⁹

Because there were no more salmon in their region, the Flatheads were forced to move out of the Bitterroot River valley over Lolo-Pass to the headwaters of the Clearwater River. In this region, according to Turney-High's informant, no other Indian groups were encountered; they didn't need to stick together in large groups for fear of enemy attack. The natural features of the region where they fished for salmon also prompted their splitting into smaller groups. On the headwater streams of the Clearwater River each small Flathead group set up their own salmon weir.⁴⁹⁰ Oddly, these weirs were so built that they caught fish swimming downstream. This statement cannot be a mere misunderstanding, as in a detailed description of the construction of one of these such weirs, it is mentioned several times that fish swimming downstream were caught.⁴⁹¹

One could suppose that the weirs were not for salmon, but for the trout that were headed downstream in fall, but the arrival of the Flatheads with the fall of the spring waters was too early for fall trout. What's more, when Turney-High discusses the construction of weirs, it very likely has to do with salmon. In any case, immediately after spawning some numbers of Chinook salmon abandoned the headwaters of the streams.

It has already been mentioned that the weirs were mostly set up on headwater streams. The fact that they could not have been very large is confirmed by the following statement from Turney-High:

"Ordinarily weirs had but one such trap, though wider streams might have more."⁴⁹²

The traps themselves were also not very large, according to a description of the construction of the fish weirs.⁴⁹³ It's not likely that more than 20 to 30 salmon could be taken from one trap. If a trap was emptied twice a day or if there were two traps in one weir, one of the small headwater streams could yield a daily catch of 40 to 60 salmon; two weirs, one right behind the other, in such a stream would surely not have made sense. Because Turney-High writes that on a "good" day one family would get about four salmon⁴⁹⁴, about 10 to 15 families could have been gathered at one such weir. Such a rough estimate is possible due to the fact that the daily yield of a weir was divided equally among all families present, under the supervision of the chief:

"The weir, conceived of as production capital, was the result of group effort, so the fish, regarded as consumption goods, were community property. The catch once taken ashore was gathered into a large

⁴⁸⁸ TURNEY-HIGH, 1937, p. 125

⁴⁸⁹ ROSTLUND, 1952, p. 21

⁴⁹⁰ TURNEY-HIGH, 1937, p. 125; see CURTIS, VII, 1911, p. 45

⁴⁹¹ TURNEY-HIGH, 1937, p. 126

⁴⁹² TURNEY-HIGH, 1937, p. 126

⁴⁹³ TURNEY-HIGH, 1937, p. 126

⁴⁹⁴ TURNEY-HIGH, 1937, p. 126. TURNEY-HIGH clearly mentions that the Flathead preserved salmon for winter (TURNERY-HIGH, 1937, p. 126). If every family preserved three salmon a day, they could allocate at least 250 or 300 kg of salmon meat for preservation over the course of salmon season. This salmon meat was made into salmon pemmican. Although the pulverization of salmon meat was not limited to the zone of contact with the Plains Indians (see ROSTLUND, 1952, map 43, p. 301), in the case of the Flathead, it seems likely that the production of salmon pemmican was derived from the preparation of buffalo pemmican, particularly as TURNEY-HIGH indicates that the same tools were used to make both (TURNERY-HIGH, 1937, p. 126). In any case, preparing salmon pemmican made the salmon easier to transport to home territories.

pile under the chief's supervision. Bearers would then proceed from lodge to lodge around the circle while the chief counted aloud the number of each lodge. As the chief counted, a fish was laid before each lodge. It was considered a good day's work if the bearers made rounds of a fair-sized camp as many as four times."⁴⁹⁵

It is not likely that this so-called chief was a salmon- or fish chief. If there had been any evidence upon which to base such a supposition, Turney-High, with his distinct interest in questions of food-acquisition, certainly would not have overlooked it.⁴⁹⁶ It is, by all means, conceivable that the distribution of the salmon, and probably also the construction of the weir, was supervised by a "band chief." Each "band" of Flatheads, according to Turney-High, had at least two "band chiefs."⁴⁹⁷ If each of them was in charge of a salmon weir⁴⁹⁸ and approximately 10 to 15 families, the total population of a "band"—keeping in mind the family members that did not accompany them on the trek over Lolo-pass—could have added up to 150 to 200 people, 20 to 30 families or tents. 150 to 200 people per "band" does not seem unrealistic, since we know that at least 6 Flathead bands existed⁴⁹⁹ and the Flatheads, at the time they acquired horses, before the wars with the Blackfeet, numbered at least 2000.⁵⁰⁰

The equal sharing of a daily salmon catch between all Indians that had set up their tents at a weir is reminiscent of—even if there was no salmon chief or fish chief to regulate—the principles of salmon distribution of such specialists.⁵⁰¹ Only here it seems to have depended less on whether someone was a newcomer to the group and more on equal compensation for all who took part in weir construction and fishing. The spoils of communal red deer hunts were also shared equally among those who participated in the battues.⁵⁰² It should be noted, however, that, for the Flathead, cooperation during red deer hunts was not a main focus and for such battues, no more than three to five families came together.⁵⁰³ Fundamentally different norms applied for the bison hunt, as a dead buffalo was the sole property of the hunter that had felled it. Sharing of buffalo meat did not follow set rules. Unsuccessful or less fortunate hunters acquired buffalo meat, depending on the situation, on a completely voluntary basis from their campmates.⁵⁰⁴

D. Quinault

A peculiarity of the Indian settlements of the north American west coast between Cape Flattery and Grays Harbor is that every tribe had its own coastal river as the center of its livelihood.⁵⁰⁵ With a length

⁴⁹⁵ TURNEY-HIGH, 1937, p. 126

⁴⁹⁶ See pp. 40-5 of the present work.

⁴⁹⁷ TURNEY-HIGH, 1937, p. 51

⁴⁹⁸ The idea that three "bands," each divided in two sections, occupied 6 headstreams, may have corresponded to the natural conditions.

⁴⁹⁹ TEIT, 1930, 309

⁵⁰⁰ TEIT adds that the Flathead population in the years 1905-9 was about 600. It can be reasonably assumed that during this time period a maximum of one third or one fourth of their original population survived (TEIT, 1930, p. 315).

⁵⁰¹ See pp. 24, 32, 35/6, 44 of the present work.

⁵⁰² TURNEY-HIGH, 1937, p. 121

⁵⁰³ TURNEY-HIGH, 1937, p. 111/2

⁵⁰⁴ TURNEY-HIGH, 1937, p. 120/1

⁵⁰⁵ OLSON, 1936, p. 14

of only 80 to 100 km the Quinault River goes through large changes in altitude and flows through diverse vegetation zones that left their mark on the economy of the Quinault. The hunting and gathering grounds lay along the upper reaches (up to Quinault Lake) , while in the lower reaches mostly fishing was practiced.⁵⁰⁶

The Quinault economy was largely based on salmon fishing; salmon was one of the most important, if not the most important, component of their diet.⁵⁰⁷ Because all five species of salmon spawn in the Quinault River, salmon could be caught all year round with fluctuating intensity.⁵⁰⁸ Although most of the species of salmon don't run until August and September, peak salmon fishing season, due to the predominate importance of Sockeye salmon, was from April to June.⁵⁰⁹ During this time all members of the tribe dedicated themselves to fishing.⁵¹⁰

The largest portion, by far, of the salmon caught by the Quinault were caught using weirs⁵¹¹, and each village on the Quinault River had a fishing weir:

"It is said that every village from no'skatla'n to the fork of the upper river had its weir (ska'lip) stretching across the river....Several of the larger villages had two or even three weirs."⁵¹²

Although it is doubtful that all of these weirs stretched across the entire river (assuming it is the Quinault river that is meant)⁵¹³, the amount of work required to build a salmon weir was not insignificant⁵¹⁴, and it must be wondered, why larger settlements erected two to three weirs, for which there were probably only ten to fifteen men available.⁵¹⁵ Perhaps in a larger village there were multiple family units, that, in principle, were comparable to smaller villages and their economic self-sufficiency and mutual support of family members.⁵¹⁶

Even if the construction and maintenance of a salmon weir was performed jointly by members of a village⁵¹⁷, the so-called households (all of the residents of a house, two to six families)⁵¹⁸ were the important economic units that appeared when it came to food acquisition, as the following accounts demonstrate:

Salmon were caught at a weir with hand nets; during the stronger current in spring and on the lower portion of the Quinault River this was the preferred method.⁵¹⁹ The hand net was used from platforms that were built into the weir. According to one of Olson's sources, there were always four platforms on a

⁵⁰⁶ OLSON, 1936, p. 14

⁵⁰⁷ OLSON, 1936, p. 15; see WILLOUGHBY, 1889, p. 269

⁵⁰⁸ OLSON, 1936, p. 26

⁵⁰⁹ OLSON, 1936, p. 26

⁵¹⁰ OLSON, 1936, p. 24

⁵¹¹ OLSON, 1936, p. 96

⁵¹² OLSON, 1936, p. 26

⁵¹³ See OLSON, 1936, p. 29

⁵¹⁴ OLSON, 1936, pp. 24, 29

⁵¹⁵ According to OLSON one village encompassed, on average, four houses, each with two families, thus, about 40-50 people (OLSON, 1936, p. 22). Large villages had, according to OLSON, up to ten houses, about 120-150 people (OLSON, 1936, p. 93). If such a village erected two or three weirs, there were about 40-50 people per weir (10-15 men). The question remains, whether 10 men were capable of building a weir across the entire Quinault River during high water levels.

⁵¹⁶ See OLSON, 1936, p. 90

⁵¹⁷ OLSON, 1936, p. 94

⁵¹⁸ OLSON, 1936, p. 93

⁵¹⁹ OLSON, 1936, p. 33

weir, and even if this number fluctuated from case to case, as Olson assumes⁵²⁰, it is clear that only one “household” fished at each platform.⁵²¹ The Senior of the “household” was the formal owner, he inherited the right to fish at a given platform. However, in practice, he was the manager of his relatives:

“At intervals along the weir were fishing platforms where the fishermen stood in manipulating the dip nets. Each head of a family (or each household) had his platform where he fished year after year and where his father had fished before him. The village “chief” usually controlled the rights to the platform most favorable located, where the water was deep.”⁵²²

In a footnote regarding this point Olson elaborates:

“Although in theory these platform locations were owned by individuals, it was seldom so in practice. The oldest son merely inherited the right as a trustee, his brothers shared in it. It was at least an indefinite type of individual ownership. Besides it was impossible for one person to man the platform both day and night during the fishing season, so two or more men shared the labor and the catch.”

It’s notable that the leader of a village had special privileges. It might be that he took from the catch a portion of his above-average claim, as leader of the community, to their material goods.⁵²³ It is possible that leaders took up a key position in trade—salmon were traded to the north!⁵²⁴—however, there is only evidence for this for fur trading after the arrival of the whites.⁵²⁵

E. The Coastal Tribes of Oregon

Almost every tribal group along the Oregon Coast occupied a region that corresponded with the watershed of a large coastal river.⁵²⁶ Each tribe had little backcountry. Most of the coastal rivers come from the Coast Range, which forms a drainage divide about 50 km from the coast; only the Umpqua River and the Rogue River cut through the barrier of the coastal range. There was not only little contact with the inland groups, such as those of the Willamette Valley⁵²⁷, but connections among coastal groups were also weak. Densely forested mountainsides separate the valleys, and poorly structured cliffs hindered communication between tribes.⁵²⁸ The individual larger villages of a tribe—they sometimes consisted of multiple, smaller villages—were largely politically and economically independent.⁵²⁹ They lay along the mouths and lower portions of the rivers, rarely farther inland; on the middle and upper portions of the river there were temporary hunting and fishing stations.⁵³⁰ The villages of the Tolowa lay directly on the coast⁵³¹, but theirs was the only territory with much flat coastal land and offshore rock formations. While the rest of the coastal tribes of Oregon mostly fished for salmon, gathering mollusks and hunting ocean mammals was very important for the economy of the Tolowa.

⁵²⁰ OLSON, 1936, p. 28

⁵²¹ OLSON, 1936, p. 92/3

⁵²² OLSON, 1936, p. 94; see CURTIS, IX, 1913, p. 10

⁵²³ OLSON, 1936, p. 94/5

⁵²⁴ OLSON, 1936, p. 87

⁵²⁵ OLSON, 1936, p. 87

⁵²⁶ BERREMAN, 1937, pp. 11/2, 30-33, 36/7, 39; see FRACHTENBERG, 1920, p. 235

⁵²⁷ BARNETT, 1937, p. 202

⁵²⁸ DRUCKER, 1937, p. 224

⁵²⁹ BERREMAN, 1937, p. 39; DRUCKER, 1937, pp. 222, 226; DORSEY, 1888, p. 57

⁵³⁰ BERREMAN, 1937, p. 37

⁵³¹ DRUCKER, 1937, p. 226

a) *Tillamook*

As the Tillamook did not live in the region of the acorn harvest, salmon played a dominant role in their economy.⁵³² With the exception of drag net fishing, the Tillamook seem to have employed all the major methods of Indian fishing.⁵³³ Unfortunately, we can't get a clear picture of the frequency of use or the productivity of each of these methods.

The statements by Boas and Barnett about the use of tribal territories for hunting agree; both emphasize that there were no personal ownership rights within the tribal territory.⁵³⁴ Regarding fishing spots, the statements of the two authors differ. Boas observes:

"There was no law forbidding the people on one river to catch fish in another river."⁵³⁵

According to Barnett, however, there were individual rights to fishing spots, these rights could be inherited. In addition to borrowing nets and traps, according to Barnett, the use of the spots at the fishing dams could be purchased for a fee.⁵³⁶ People from the same village would have been considered first.

Although individually-built salmon weirs could be given to others for a fee, in the case of collectively built weirs, this is more questionable. Barnett himself hints at this, in his elaboration upon the general statement about all tribes of the Oregon Coast, in which the Tillamook are included, "Dams owned by builders":

"It is not inconceivable that a dam, though erected by several men, should belong to the owner of the site. In fact, it is true that there a prominent man nominally may own the dam, but at the same time his aids and subordinated share its products and so in effect own it too."⁵³⁷

The above-mentioned "dam" was probably a village's fishing weir or fishing dam. Considering the general fact that on the Oregon coast, the "chief" or the "chiefs" of a village, including Tillamook villages, were the people with the greatest ownership of material goods⁵³⁸, the wording "a prominent man nominally may own the dam" could mean one of the two heads of a village⁵³⁹, particularly as those that helped build the fishing dam are spoken of as "aids and subordinates." These "aids and subordinates" are potentially "poorer" segments of the population⁵⁴⁰, but they are probably simply several residents of a village that had to help build a large fish dam or weir, as it could not be completed otherwise. They were entitled to their portion of the catch not only as compensation for helping with

⁵³² BARNETT, 1937, pp. 165/6

⁵³³ BARNETT, 1937, pp. 163/4

⁵³⁴ BOAS, 1923, p. 5

⁵³⁵ BOAS, 1923, p. 5

⁵³⁶ BARNETT, 1937, p. 186

⁵³⁷ BARNETT, 1937, p. 196

⁵³⁸ BARNETT, 1937, p. 185

⁵³⁹ In each Tillamook village there were two heads, one occupied the position of "assistant chief" (BARNETT, 1937, p. 185; also see BOAS, 1923, p.4).

⁵⁴⁰ The word "subordinates" could not have meant slaves, as these people shared in the catch, however, poorer members of the group are suggested: BOAS mentions errand boys of the "chiefs," "poor people of the tribe, not slaves, who carried out their order" (BOAS, 1923, p. 4). BARNETT writes of people that borrowed nets or traps from others for a fee (fish) (BARNETT, 1937, p. 186) or had to limit themselves to fishing with the less productive methods, such as fishing hooks, spears, and rods (BARNETT, 1937, pp. 186, 196).

construction, but also as residents of the village, whose heads were, above all, responsible managers of the group of relatives that constituted a village.⁵⁴¹ Because the inheritance of the role of head of a village was tied to property and person⁵⁴², it is completely plausible that a large fishing dam or weir was erected at the traditional fishing spot of the head of a certain family year after year together with the labor of a large portion of the community.

b) Alsea

The Alsea also lived outside of the region of intensive acorn harvest⁵⁴³, they were, above all, salmon fishermen.⁵⁴⁴ With the late natural salmon season⁵⁴⁵ and the corresponding low water flow in the rivers, the focus was on spear fishing and salmon fishing with weirs.⁵⁴⁶

In fall, with the water level low, it did not require very much work to erect a weir, particularly on the creeks and brooks flowing into the main river. If you estimate that of the 500 Alsea at least 150 to 200 people stayed back in the area of the permanent villages, up to 300 Alsea could have distributed themselves among the fishing spots along the creeks and brooks. If you assume that of the about 25 “camps and fishing places up the two rivers”⁵⁴⁷ only ten of these were fishing spots, there were no more than 30 Indians at each spot, or 10-12 men, that directly participated in fishing. By all means they could have been able to erect a small weir if the water level was low. Therefore, nothing stands in the way of assuming that every village—there could not have been more than twelve⁵⁴⁸—owned their traditional salmon fishing spot as a family group (“paternal kin group”)⁵⁴⁹, even though the literature does not say anything about this.

However, if a permanent weir fishing spot belonged to a village, it is plausible that the leader of the village or family group⁵⁵⁰ took over the leadership or supervision of the communal weir construction. It is, of course, possible that the leader of a village did not leave his village during salmon fishing season, but one of Drucker’s sources emphasizes that he took part in the work just like everybody else.⁵⁵¹

c) Tolowa

It has already been pointed out that in the Tolowa economy, in addition to salmon fishing, gathering mollusks and hunting ocean mammals significantly contributed to their means of subsistence; it should be added that, in addition to salmon fishing, acorns formed the basis of their diet.⁵⁵²

⁵⁴¹ “Almost every man related to his chief” (BARNETT, 1937, p. 185). “The village is essentially a group of male relatives and their wives, bound together by blood and common interests” (BARNETT, 1937, p. 196).

⁵⁴² BARNETT, 1937, p. 186

⁵⁴³ DRUCKER, 1939, p. 84

⁵⁴⁴ DRUCKER, 1939, p. 82-5

⁵⁴⁵ DRUCKER, 1939, p. 82, 90

⁵⁴⁶ DRUCKER, 1939, p. 82

⁵⁴⁷ DRUCKER, 1939, p. 82

⁵⁴⁸ DRUCKER, 1939, p. 81

⁵⁴⁹ DRUCKER, 1939, p. 92/3

⁵⁵⁰ Because a village was generally led by one “headman,” but larger villages by two or three “headmen,” there are grounds for suspecting that these leaders were each the heads of groups of related people.

⁵⁵¹ DRUCKER, 1939, p. 92

⁵⁵² DRUCKER, 1937, p. 231

Three types of salmon (Chinook, Coho, and Chum) and the steelhead trout spawn in the Smith River. There are two clearly distinguishable salmon runs in this river, one in spring and one in late summer and fall.⁵⁵³ From the annual economic cycle of the Tolowa we can see that the fall salmon season was limited by the acorn harvest, which began directly after it, and for which the men accompanied their women in moving to the mountains. On the other hand, the annual cycle also shows that the fall catch was the more important of the two, due to the accrual of winter reserves.⁵⁵⁴ In late summer and fall, with the water level in the streams low, large weirs could be set up; the construction of these barriers began in summer:

“Communal weir (uss tcu`), built at summer low water on riffle at musontun and/or militcuntun (latter site probably older).”⁵⁵⁵

It is notable that there were only two large salmon weirs in the Smith River, which were set up at especially favorable spots (“on riffle”); otherwise smaller weirs on the tributaries and brooks seem to have been typical for the Tolowa.⁵⁵⁶ According to Drucker these smaller weirs were erected by individuals.⁵⁵⁷ This statement raises the question of whether such weirs were also used at Alsea.

Drucker characterizes the ownership relationships at the spots of intensive food acquisition as follows:

“Deer-hunting acorn-picking tracts; riffles for spearing, trapping salmon, etc., most small streams which fish entered; sites of 2 annual weirs in river, all private, hereditary property. Almost never transferred outside of family. Hereditary owner nominal owner only; he was boss for it but all his kin had right to utilize; only outsiders had to ask permission (which was ordinarily freely given).”⁵⁵⁸

Thus, there were also individual and hereditary rights to the spots for erecting the two large weirs; however, this observation is immediately qualified by the comment that the existence of special rights to these places did not exclude their use by a larger group of people. The “owner” represented a family group to outsiders. As “boss,” he prepared the building materials, notified workers, and divided the salmon caught in the retention tanks among all that helped with construction or fishing.⁵⁵⁹ There is no doubt that this person conducted the Ceremony of the First Salmon.⁵⁶⁰

Were these “owners” the leaders of paternally organized family groups? This question, after looking at the Alsea, seems justified. It also seems reasonable, because among the Tolowa, family groups appeared as economic units and grouped themselves around an economically and politically influential man with many rights to points of food acquisition.⁵⁶¹

The two weir fishing spots *munson tun* and *militcuntun* were 8-12 km from the next large village *yotokut*.⁵⁶² Only a few Tolowa had their permanent residences near or at them, probably no more than a total of five families.⁵⁶³ These families were related to people in *yotokut*⁵⁶⁴ and, without a doubt, Tolowa

⁵⁵³ DRUCKER, 1937, p. 232

⁵⁵⁴ DRUCKER, 1939, p. 232

⁵⁵⁵ DRUCKER, 1939, p. 232

⁵⁵⁶ DRUCKER, 1939, p. 232

⁵⁵⁷ DRUCKER, 1939, p. 232

⁵⁵⁸ DRUCKER, 1939, p. 243

⁵⁵⁹ DRUCKER, 1939, p. 232

⁵⁶⁰ DRUCKER, 1939, p. 261

⁵⁶¹ DRUCKER, 1937, p. 235, 241, 243-5

⁵⁶² DRUCKER, 1937, maps 2, 3.

⁵⁶³ DRUCKER, 1937, p. 226/7

⁵⁶⁴ DRUCKER, 1937, p. 227

from *yotokut* and, potentially, other Tolowa, took part in their weir fishing.⁵⁶⁵ When Drucker writes that the “owners” of the weir fishing spots were *yotokut* men⁵⁶⁶, this does not necessarily mean that their permanent residences were in *yotokut* and couldn’t have been at the weir fishing spots. The last “owner” of the spot at *munsontun* left *yotokut* and built himself a dwelling at *munsontun*.⁵⁶⁷ However, the importance of *munsontun* may have, by this time or even before, been diminished⁵⁶⁸, and the “owner” of the spot at *militcuntun* absolutely might have lived at *militcuntun* year-round.

Thus, it is not possible to find a clear answer: it is possible that the leaders of a larger family group left *yotokut* for a certain amount of time and observed their rights and obligations at *munsontun* and *militcuntun* during weir fishing; on the other hand it is also plausible that the “owner” of a traditional weir fishing spot lived there, conducted all preparation there, and, at the appropriate time, notified his relatives and friends. In this case he was not the leader of a family group, but the leader and supervisor of weir fishing, whose function was not very different from the “dam chief” of the neighboring Yurok.

F. Pomo of the Russian River Valley

The region once inhabited by the Pomo can be broken into three geographic areas: the coastal region, the Russian River Valley, and the Clear Lake region.⁵⁶⁹

While the Russian River Valley must have offered good opportunities for salmon fishing, it should not be overlooked that the salmon could not have been the sole focus of their economy. Vegetable food—above all, acorns, additionally, grass seeds and berries—played an almost equal role.⁵⁷⁰ This multifaceted use of the abundant natural food supply was reflected in the unusual distribution of the Pomo groups in the Russian River Valley. While in many areas of western North America one community inhabited a large section of a whole river valley or smaller valley, along the Russian River Valley one tribal group followed very closely after the other; 3 to 15 km of river bank, valley bottom, and forested mountainsides offered so many opportunities to procure food in different vegetation zones that it could support a tribal group of 1000 people or more.⁵⁷¹

The tribal subgroups, living in large numbers in small areas, of the Russian River Valley had a political organization that often combined multiple villages under one leader. Often there was a relatively highly populated “capital city” surrounded by smaller villages that were sometimes only occupied seasonally.⁵⁷²

At the head of a subtribal group there were two chiefs under whom there were multiple leaders—probably representatives of family groups and village communities.⁵⁷³ The leaders each had one or more assistants (*hogus tcaiyadul*) that they selected from certain families. These assistants were mostly in charge of organizational tasks: they supplied firewood, built sweat houses, and were responsible for the hunts before large gatherings.⁵⁷⁴ Whether they also were involved as managers of other community

⁵⁶⁵ DRUCKER, 1937, p. 227

⁵⁶⁶ DRUCKER, 1937, p. 227

⁵⁶⁷ DRUCKER, 1937, p. 226

⁵⁶⁸ See DRUCKER, 1937, p. 226

⁵⁶⁹ BARRETT, 1908, pp. 121-4; KROEBER, 1925, pp. 222-39; KNIFFEN, 1939, p. 353; STEWART, 1943, pp. 55/6

⁵⁷⁰ KNIFFEN, 1939, pp. 377-9

⁵⁷¹ STEWART, 1943, p. 39, 43, 45, 55

⁵⁷² STEWART, 1943, p. 39/40, 43, 45, 57

⁵⁷³ STEWART, 1943, p. 46

⁵⁷⁴ STEWART, 1943, p. 46

food acquisition activities cannot be deduced from the literature. However, it seems reasonable to compare them to the “boy chiefs” of the northern Pomo:

“The duties of the boy chiefs consisted in acting as assistants to the chiefs. If there was to be a feast, everyone in the village would contribute food which they brought to a designated spot. It was the duty of the boy chiefs to distribute this. In the gathering of acorns, each family would usually gather its own. Sometimes, however, all the families would gather the acorns from a common area. The acorns would then be placed in a large pile which would later be divided and distributed by the boy chiefs. In hunting, the boy chiefs divided the animals killed by this party. If a deer were killed, the boy chief would divide it according to a definite system among all members of the party.”⁵⁷⁵

The Central Pomo of the Russian River Valley had much more individual rights (probably family rights) to places of food acquisition than the North Pomo.⁵⁷⁶ However, during community efforts to acquire food, these rights were not in effect and it is plausible that a *hogus tcaiyadul* or even multiple worked as organizers and mediators. Such activities were also involved with fishing:

“Although SK admitted the general rule of private ownership and said that a man with a good dam could get rich, he also mentioned that the fish poisoning was a communal affair and that there were special communal fish drives when the private ownership of dams was disregarded. This latter scheme of things was also true of communal hunting. An individual or family controlled certain spots recognized as good places to do individual snaring or shooting of game; however, these rights were not respected during communal hunts when game, especially deer, were caught for the group as a whole.”⁵⁷⁷

The communal fishing mentioned above could not have been for salmon; during the salmon run in winter and early spring poisoning fish and a fish drive would not have been possible, considering the high water flow. However, in the tributaries of the Russian River weir fishing for salmon was practiced.⁵⁷⁸

Finally, it should not be forgotten that some tribal groups of the Russian River Valley participated in fishing (always salmon fishing?) with other groups.⁵⁷⁹ Perhaps the *hogus tcaiyadul* were present to take up contact and hold conversation between the groups.

G. Coastal Yuki

Each subtribal group of the Coastal Yuki occupied a strip of land from the coast to the redwood belt and the drainage divide between the coastal rivers and the tributaries of the South Fork of the Eel River.⁵⁸⁰ However, it can be concluded that only the coastal territories—especially the many lagoons with the opportunity to gather mollusks in very large numbers—were essential for the economy of the Coastal Yuki.⁵⁸¹

During salmon season the Coast Yuki regularly traveled inland to the South Fork of the Eel River and its tributaries. There they fished in the territory of the Athapaskan groups, whose superiority as salmon

⁵⁷⁵ LOEB, 1926, p. 238

⁵⁷⁶ See LOEB, 1926, p. 238

⁵⁷⁷ STEWART, 1943, p. 44

⁵⁷⁸ KNIFFEN, 1939, p. 376

⁵⁷⁹ KNIFFEN, 1939, p. 375/6; STEWART, 1943, pp. 47, 53

⁵⁸⁰ GIFFORD, 1939, p. 296

⁵⁸¹ GIFFORD, 1939, p. 326

fishermen they recognized.⁵⁸² These trips inland by the Coastal Yuki were not the only evidence of an economic “symbiosis” of the Inland- and Coastal groups. In summer the Coastal Yuki undertook short trips inland and the Kato to the coastal region to get food from their hosts.⁵⁸³ As the invitation and transfer of food did not occur on a family level, but between tribal groups, the organization was in the hands of so-called “head men.”⁵⁸⁴ The “head men” of the Coast Yuki were local group leaders (chiefs?), that were not so much men with many material goods or political influence, but rather stepped forward as stewards of all affairs related to daily life.⁵⁸⁵ It is plausible that they also oversaw the trips to go salmon fishing and managed the stay in the Athapaskan territory, but they certainly didn’t personally accompany the men⁵⁸⁶ who traveled in winter. Therefore, it is still unknown who led weir fishing⁵⁸⁷ for salmon in the South Fork of the Eel River and whether there were special leaders for this.

H. Pit River Indians

The unique economic situation of the Pit River Indians, the *Achomawi* and *Atsugewi*, was that only some of them, strictly speaking the subtribal groups of the Achomawi, the Ilmawi, Itsatawi, and Madesi, were in possession of waters frequented by salmon. The salmon run in the Pit River ended at the confluence with the Fall River. As the range of the oaks also did not stretch much farther to the east, the economy of the eastern Pit River Indians is more similar to those of the Great Basin than California. This included intensive utilization of non-migratory fish species, waterfowl, to a lesser degree antelope and rodent hunting, and gathering grass seeds.⁵⁸⁸ The very diverse environmental conditions and the, therefore, very diverse forms of food acquisition practiced by the individual Pit River groups seem to have led to an active exchange of opportunities:

“Where communication was fairly easy there was an exchange of gathering, hunting, or fishing privileges between the different groups if these groups happened to be on friendly terms.”⁵⁸⁹

The territories along the portions of the rivers that contained salmon had a significantly higher population density, as the permanent residences were here, in most cases on the Pit River or the lower reaches of its tributaries.⁵⁹⁰

While among the Itsatawi there probably weren’t any family rights to fishing spots⁵⁹¹, the two main residents on the Pit River, the two groups with the largest populations, the Madesi and Ilmawi, recognized individual rights to certain sections of the river:

Ilmawi: “Large villages were found the length of the area along the river, and the whole of the river front was divided into sections. Each of these was said to ‘belong’ to a certain man. On this lived his relatives. He announced when it was time to gather or hunt. He was the headman whose word was authority. It was a sort of patriarchy, the title to the site being passed down from father to son. Prominent among these sites were Katsade; immediately below the mouth of the canyon leading from

⁵⁸² GIFFORD, 1939, p. 296/7, 299, 304, 321, 325; KROEBER, 1925, p. 174

⁵⁸³ GIFFORD, 1939, p. 304

⁵⁸⁴ GIFFORD, 1939, p. 304/5

⁵⁸⁵ See GIFFORD, 1939, p. 296-303, 357/8

⁵⁸⁶ GIFFORD, 1939, p. 321

⁵⁸⁷ GIFFORD, 1939, p. 325

⁵⁸⁸ GARTH, 1953, pp. 133-9; also see KNIFFEN, 1928, p. 302 and map 1

⁵⁸⁹ KNIFFEN, 1928, p. 303; also see pp. 305/6

⁵⁹⁰ KNIFFEN, 1928, p. 312, 314

⁵⁹¹ KNIFFEN, 1928, p. 313

Fall River valley; Seku'iyuwadi, at the mouth of Hat creek; Tuwa-temi, at the mouth of Burney creek; and Sutite'okgeloi, in Cayton valley. There appears to have been no main chief over the whole area."⁵⁹²

Madesi: "The banks of the river (Pit River, D.T.) were carefully divided into plots, each of which had its characteristic name and was owned by one man. One such man might own a pond frequented by geese. He 'owned' the geese, but permitted others to come and conduct communal hunt. He was the director of the hunt and ostensibly owner of all the birds killed. Madesi, the whole Big Bend area, included at least twenty-one of these smaller units."⁵⁹³

An analysis of the two quotes results in the following conclusions: the "owners" of the portion of land along the Pit River were custodians of an area in the interests of their relatives. The over 20 pieces of land in the Madesi territory suggests about 400 people⁵⁹⁴ of a branched family group were the users. Even if such a custodian was not the same as a temporary leader of communal food acquisition efforts, it is clear to see that he led community activities (Imawi: "He announced when it was time to gather or hunt."—Madesi: "He was the director of the hunt.").

There are a few indications that the supervision of communal salmon fishing operations may have also fallen within the scope of duties of these custodians. According to Kroeber, the Achomawi did not use the A-frame plunging nets of the Klamath Indians, they practiced fishing with spears, drag nets, and traps (nets or baskets) at waterfalls or constructed barriers.⁵⁹⁵ These waterfalls and artificial barriers (weirs or stone dams?) could very well have been important salmon fishing points. Does Kniffen's observation that in the Ilmawi territory, especially at the confluence of tributaries of the Pit River, there were important sections of river not suggest that there were concentrated points of salmon fishing there?

One fact deserves more careful attention: according to Kniffen, the right to a certain section of the river—in the sense described above, of supervision and stewardship on behalf of a family group—was passed down from father to son.⁵⁹⁶ Thus, this right was not bound to a "Senior council" within a family group. It almost appears that there was a tendency to keep certain rights to important points of food acquisition within a tight family circle and, perhaps, even in the aim of accumulating of wealth and, thereby, acquiring a superior position within the not very organized community. Garth brings an example of this kind of endeavor in the Atsugewi territory to our attention:

"Justicini was a rich man living at Rising River in a settlement a short distance from the main settlement. He took his name from the land on which he resided and which he owned. SP said that he had more land than did the chief Buckskin Jack. He was also a successful hunter and fisherman and owned several canoes. According JS, he was second man to the chief. Sometimes he divided deer meat among the villagers when the chief was sick or was absent. Fifteen or twenty people lived with him in his large earth lodge. He could take the initiative and call a sweat dance in his own house. His wife was blind and was unable to do much work, and when he grew old he became lame. His relatives then supplied him with food. He had an only daughter who inherited little or nothing from him. His land and possessions went for the most part to his cousin, Buckskin Jack."⁵⁹⁷

⁵⁹² KNIFFEN, 1928, p. 313

⁵⁹³ KNIFFEN, 1928, p. 314

⁵⁹⁴ KNIFFEN, 1928, p. 314

⁵⁹⁵ KNIFFEN, 1928, p. 309

⁵⁹⁶ KNIFFEN, 1928, p. 313

⁵⁹⁷ GARTH, 1953, p. 184

J. Maidu

Salmon played, without a doubt, a large role in the diet of the Maidu.⁵⁹⁸ Although plant-based foods, above all else, the various types of acorns, were the most important⁵⁹⁹, the wealth of salmon in the large rivers—the Sacramento River, American River, Feather River, Yuba River (and in Big Butte Creek)—was not insignificant. The Mountain Maidu did not practice salmon fishing to the same extent as the Valley Maidu.⁶⁰⁰

The few records regarding Maidu fishing methods can be combined to form the following picture: in the larger rivers drag nets were used. In the tributaries of the Sacramento River salmon weirs were built; additionally, platforms were probably erected, from which hand nets could be used. In the smaller creeks and brooks at higher elevations, especially in the territory of the Northeastern Maidu, simple hand nets and traps were used, probably mostly to catch non-migratory fish. It should be noted that, according to Dixon, in the Northern Maidu territory the use of nets (hand nets) may have been more common than catching salmon in weirs.⁶⁰¹ This image of the regions of use of different fishing methods, however, does not seem to completely correspond to the fishing spot usage rights in Dixon's statements:

"Property in land was never individual, but always communal: Each community or group of communities owned its territory in common, including hunting and fishing grounds. In the case of fishing-places, these were, as a rule, common property, and any member of the community could fish there. Certain holes, however, seem to have been private property belonging to families, and no outsider could fish there without the requisite permission. This private ownership in fishing holes seems to have been a little more common along the Northeastern Maidu than elsewhere."⁶⁰²

Above it is stated that in the territory of the Northeastern Maidu simple hand nets (dip nets) were used, but in the quote, it is stated that the Northeastern Maidu recognized family rights to fishing spots. Based on general experience, family rights would be expected more for A-frame plunging net fishing spots than for dip net stations. Such hand nets were also used by the Northern Maidu—almost in the same form and way of the Yurok—and it is, therefore, possible, that family rights to fishing spots also commonly existed outside of—or only outside of?—the territory of the Northeastern Maidu, along the lower and middle portion of the tributaries of the Sacramento River, which were especially suitable for the use of A-frame plunging nets.

Unfortunately, we do not have any historical records regarding the organization of weir fishing by the Northern Maidu. However, it can be hypothesized that the chief of a village or local group did not lead salmon fishing at weirs. At least the following quote can be taken to suggest this:

"Among the Northern Maidu, the chief seems not to have fared much better than the other members of the community. He had to hunt and fish as well as the others; and while he received his share of all meat and fish distributed, yet there seems to have been no larger portion given to him, as the rule, than to the others."⁶⁰³

⁵⁹⁸ DIXON, 1905, p. 184

⁵⁹⁹ DIXON, 1905, p. 181

⁶⁰⁰ DIXON, 1905, p. 192

⁶⁰¹ DIXON, 1905, p. 143, 197/8

⁶⁰² DIXON, 1905, p. 224/5

⁶⁰³ DIXON, 1905, p. 224

Thus, there was a division of fish (at Weirs?), but the chief does not seem to have had anything to do with this division. Perhaps the local leader of the “secret society” conducted organizational tasks related to salmon fishing, although Dixon only mentions that he organized the acorn harvest and, as cult leader, attempted to positively influence the salmon run:

“Besides the duties already mentioned, the leader had others to perform. He was supposed to look for the most favorable spot for the gathering of acorns, and to make known to the village in a speech where this place was. He had to find out if the trees were within the limits of the land controlled by the village, and, if not, had to negotiate with the village on whose land the trees were, for the privilege of gathering acorns there. This permission was obtained only by means of paying. He was also supposed to make it rain when it was needed, to insure a good crop of acorns and a good supply of salmon;...”⁶⁰⁴

The southern Maidu of the Sacramento River Valley, the Valley Nisenan, also fished for salmon, according to Kroeber:

“Salmon were taken by means of weirs across the river, built communally. The fish passed through gates into enclosures from which they were scooped with nets.”⁶⁰⁵

The construction of such a large weir system and also the division of the caught salmon may have been directed by a certain person. However, the fact that the “village chief” of the southern Maidu had a special right to all game caught in his territory⁶⁰⁶, may not be interpreted to mean that he also influenced the appropriation of the fish caught at a weir.

K. Summary

Although the statements in this Part are difficult to compare with each other—tribe to tribe, condition to condition—due to the gaps in the available ethnographic material, some general conclusions can be formed:

a) Salmon was a significant form of food for all groups. For Californian groups mollusks (Tolowa and Coastal Yuki), ocean mammals (Tolowa), and, above all, acorns (Yurok, Hupa, Pomo, Wintu, Maidu, etc.) were other important components of the Indian diet.

The main salmon fishing season only significantly overlapped with the harvest of wild berries and seeds; it was preceded in the spring by the root harvest and followed in the fall, in California, by the acorn harvest, and, throughout the greater region, by the large fall deer hunts (see Appendix III).

b) Except for the relatively short natural salmon season in Californian streams with winter salmon runs and in some Coastal Oregon streams with spring or fall salmon runs (see Appendix III), the possibility existed in many rivers, above all, the Fraser-Columbia River-, Klamath River- and Sacramento River-systems, to catch salmon in spring, despite the high water flow, or in late summer or early fall, during low water levels. These two possibilities corresponded to two main methods of Indian salmon fishing in western North America: fishing from individual platforms with hand nets along a stream in spring and weir fishing in late summer or early fall. Both methods played a very large role in salmon fishing in this region, as drag net fishing, which was very productive in and of itself, was mostly concentrated on the lower reaches of larger rivers (but not including the Klamath River!). Other methods are not likely to have competed with this, as fishing with cast nets was largely limited to rapids

⁶⁰⁴ DIXON, 1905, p. 330/1

⁶⁰⁵ KROEBER, 1929, p. 262

⁶⁰⁶ DIXON, 1905, p. 224

and waterfalls, and spearfishing could only compete with the productivity of weir or hand net fishing under special conditions—in clear and relatively narrow streams in fall from canoes (see Appendix III).

c) Considering the preeminent importance of Chinook salmon (in all large rivers from the Fraser River to the Sacramento River) and Sockeye salmon (in the coastal rivers, especially of British Columbia and Washington) for Indian fishing economies, spring and late summer were always the main salmon fishing seasons (also see Appendix III). Despite this, it cannot be concluded from this that weir fishing was less important than hand net fishing; in fact, for certain regions the opposite is true. While, namely, in spring, on the lower and middle sections of larger rivers hand nets were commonly used from platforms (especially by the Lower Thompson and Wishram; also see Yurok salmon fishing), weir fishing along tributaries and in the short coastal rivers was completely possible (among the Quinault). The construction of larger weirs was restricted to the late summer or early fall (hypothetically for the Tolowa). However, it should not be forgotten that for some groups (the Alsea and Tolowa) the fall salmon catch played an important role for the accrual of salmon reserves for winter.

d) The two most significant and well-documented salmon fishing methods, which differed in the time and place of their use, corresponded with different forms of cooperation for salmon fishing, usage rights to fishing spots, and distribution or appropriation of fish.

Having to find a suitable stretch of shore (a “salmon resting place” on a projection from the bank), the limited number of such spots on each river, their arrangement, and the construction of platforms, when combined with the relatively high yields, allowed for the hand net stations to end up in the heritable possession of families (even extended families)—so it was for the Lower Thompson and Wishram, and possibly also for the Northern Maidu.

At such stations there was no cooperation during salmon fishing, nor was there a high concentration of people in a small area, as there was in the case of cast net fishing at rapids. The hand net stations had to be a certain distance away from each other in order to avoid decreasing each other’s productivity (see the example of the Yurok).

The smaller salmon weirs erected on the upper portions of the tributaries of larger rivers and on the short coastal rivers, which, however, often stretched across the whole width of the stream, and of which, in some rivers there were many in a row, were not intertribal fishing centers. They were built by family groups that often represented one village. For the construction of such a weir—which on Oregon coastal rivers usually occurred in fall during low water levels—leadership by special Salmon Fishing Organizers was surely not as necessary as at the large weirs discussed in Part I of this work. There are also no records of such specialists in the literature. Instead there are reports (like those about the Tillamook, Alsea, and Tolowa) that a certain person was the “owner” of a weir or—more accurately—the suitable location for the construction of a weir. This person was probably in many cases the leader—or most economically influential man—of a family group, in the region discussed here, a “paternal kin group.” His position as “owner”—better interpreted as “custodian” than “owner”—likely required familiarity with the local landscape, practical knowledge of weir construction, determining the right time to build the weir, regulating the catch at the weir, division of caught fish, or even representing his own family group and their rights in dealings with other groups. Regarding the last point, it is important to note that the coastal groups of Oregon had the least contact with neighboring tribes. However, it should also be considered that with the use of multiple weirs in a row in one river, agreements may have been

reached within subtribal sections, if this wasn't—as in the case of the Quileute⁶⁰⁷—regulated by specific rules of common law.

At the salmon weirs of the Quinault, in contrast with the principles of distribution on the Columbia River Plateau, the salmon were not equally distributed among all present. They were appropriated by certain family groups that were probably also the builders of small weirs. These groups had traditional usage rights to the platforms built into the weir. Special rights of heads of villages are thereby transmitted.

Regarding the weirs of the Lillooet, we know only that larger—extending beyond family bands—family groups (“clans”) claimed rights to weir fishing spots. How the work at these weirs was organized is as equally unknown as the rules regarding the division of caught fish.

e) Large holes remain in the knowledge of the organization of salmon fishing in the region discussed in this work, especially for the “Intermediate and Intermountain Areas;” thus, to round out the picture we’ve formed, beyond the framework of the present work, it should at least be mentioned what form the organization of salmon fishing took among groups directly neighboring the groups in this region:

Without a doubt, the collective usage rights to places of weir fishing of the Lillooet corresponded with legal norms of the continental and river fishing Indian groups of the Northwest coast. Among the Carrier of the Bulkley River, the Owikeno Kwakiutl, or the Bella Coola, family groups, each with their own lineage traditions, whether they be “clans” or “crest groups,”⁶⁰⁸ held the legal rights to weir fishing spots or the individual “traps” of a weir.

The salmon weirs of the Quinault found their technological counterparts in the salmon weirs of some tribes of the Puget Sound. The Snuqualmi, Puyallup, and Nisqually also had multiple platforms for fishing with hand nets (or spears?) built into their weirs. At these weirs the catch was not divided up, rather each family or group of a few related families got the fish that were caught at their traditionally used platform.⁶⁰⁹

Smaller salmon weirs built by one or just a few related families along the coastal rivers and their tributaries, as was typical for salmon fishing in the coastal regions of Oregon, also could be found among the Quileute and Klallam of the Washington coast. Among the Klallam, village leaders had special rights to the best weir of a river.⁶¹⁰ Such special privileges also existed among the Quinault. They appeared during the “reef” net fishing of the Lummi, which was largely conducted from canoes, and during which the leader of operations, as “owner” of fishing rights to certain fishing grounds, recruited people (relatives?) that owned portions of the “reef” net, and gave them the yields of certain portions of the net, depending on the catch, but saved the largest portion for himself.⁶¹¹

To sum up everything said in a) through e), the hypothesis is mostly supported that for the tribes for which the ethnographic literature does not mention Salmon-Chiefs *other representatives of the community fulfilled the duties of a Salmon Fishing Organizer*. Among the Tillamook, Alsea, Tolowa, and perhaps also the Quinault and the Pit River Indians, it was the most economically influential representative of localized family groups, for the Pomo of the Russian River Valley it may have been the village leaders or their assistants, and for the Northern Maidu, in some cases, even the cult leader.

⁶⁰⁷ PETTIT, 1950, pp. 7/8

⁶⁰⁸ JENNESS, 1943, pp. 485-8; OLSON, 1954, p. 216; MCILWRAITH, 1948, I, pp. 296, 299, 307-12, 328/9, 332-4.

⁶⁰⁹ HABERLIN, GUNTHER, 1924, pp. 17-19; SMITH, 1940, pp. 145, 258-61; also see EELLS, 1889, p. 634.

⁶¹⁰ GUNTHER, 1927, pp. 199-200; PETTIT, 1950, pp. 7/8

⁶¹¹ STERN, 1934, pp. 43-6

Later in this Part it was demonstrated that for some groups (like the Lower Thompson or the Northeastern Maidu) *collective salmon fishing likely did not play a significant role*. Therefore, organization of salmon fishing above the family or small family group level probably did not exist.

The form of cooperation and leadership that existed for Shuswap or Southern Maidu weir fishing remains unknown; the evidence about the organization of salmon fishing among the Coastal Yuki also remains very unclear.

The leaders of family groups or villages—these two functions were often the same—often appear, with regard to leadership of salmon fishing operations, as “owners” of certain salmon fishing spots. It was pointed out many times that this position included, or, perhaps even was characterized by duties such as the technical leadership or division of labor, regulation of the division of caught fish, and representation of the group’s rights in dealings with outsiders. In the Tolowa version and Drucker’s account, this relationship, as you know, is expressed like so: “Hereditary owner nominally owner only, ‘he was boss for it’...” . Suttles, in an investigation of the interplay between economy and society among groups of the Puget Sound, also came to the conclusion “owner”=“boss.”⁶¹² Under the unique economic and social conditions of many of the Indian communities discussed here (small, stable settlements of related people with economic autarchy and political autonomy under the leadership of economically powerful people) this equation can be expanded to the following formula: “Owner”= “boss”= “rich man”= “chief man.” It should, therefore, be noted that the ownership of fishing spots did not necessarily only mean a custodianship for the remaining members of a community. Many reasons have been given to not view the concentration of material goods, including food, in the hands of one man, simply as a reserve for the many necessary and typical expenditures of or for the community, but as leverage for the continuous consolidation of property and for social promotion, as was the norm among groups of the northwest coast, perceivable in its infancy among the Tolowa, Atsugewi or Achomawi.

CONCLUSIONS

This work has demonstrated that in a series of Indian groups of western North America, in addition to permanent leaders (chiefs) or representatives of the community, Food-Chiefs or Organizers of Food Acquisition existed. They each supervised one branch of food acquisition. Their authority was generally restricted to the season of acquisition of a certain food animal or food plant, during which time, however, it was constrained by the authority of permanent leaders. In most cases the Food-Chiefs led community food-acquisition efforts.

For the characterization and analysis of the duties and social status of the Food-Chiefs, the example of Salmon Fishing Organizers or Salmon-Chiefs was chosen. This choice is justified by the availability of sources and by the fact that the economic basis for and causes of the development of Salmon-Chiefs are relatively easy to recognize.

The impetus for the development of Salmon-Chiefs was, without a doubt, the seasonal appearance of the salmon runs. Salmon was an important component of the diet of many groups, but the procurement of other—no less important for a balanced diet—foodstuffs, and the frequent overlap of the natural salmon season with vegetable harvests, led to the intensive and, therefore, regulated utilization of the salmon runs.

⁶¹² SUTTLES, 1960, pp. 300/1

The very productive weir fishing on the Columbia River Plateau led to temporary concentrations of Indians in small areas; on the edge of the range of the salmon runs, this often included outsiders from other groups. A weir construction specialist's detailed knowledge of the land and his yearly observation of the water levels and fish migration were requirements for the construction of a large weir. The weir construction, which was slightly different depending on varying annual conditions, and the relatively large number of Indians working together required strict leadership that could stay on schedule. It was all the more important that the many tasks involved in weir construction be managed and carefully coordinated by a specialist, as a collaborative focus of larger portions of the communities on a certain form of salmon fishing or primarily practicing fishing in general was only rarely observed in the backcountry of the northwest coast. The mixture of Indians gathered at a weir fishing center, which was slightly different each year, must also have made it difficult to form coordinated work groups.

The development of the position of Salmon Fishing Organizer, caused by economic circumstances, was significantly influenced by social factors. Because in most of the Indian groups of the Columbia River Plateau and in numerous communities of California there were no special group rights, let alone individual rights, to the means of production, the division of the salmon caught in the large traps was not regulated by fixed rights of the Indians present. The division of fish, or its supervision, thus, fell within the scope of duties of the Salmon-Chief. They may have also dealt with large fluctuations in the size of the catch by altering the method of division. During the widespread dissolution of local groups and while opportunities existed to join in the efforts of neighboring groups during the months of intensive food acquisition, the Salmon-Chiefs temporarily took over the role of managing the interests of the members of different communities.

By characterizing the general socio-economic conditions, above all on the Columbia River Plateau and the middle reaches of the Snake River, the following basic functions of the Salmon-Fishing Organizers were identified:

- a) The technical leadership of certain operations, especially the construction of weirs or dams; this included a detailed knowledge and constant observation of natural conditions for the deployment of salmon fishing devices.
- b) The formation and management of work groups entrusted with different tasks; the notification of groups that often lived far apart from each other before work began.
- c) The division of salmon from communally constructed dams or weirs among all Indians present or supervision of this division; this entailed, in the sense of recognizing the interests of Indians from other groups or tribes, the likely assignment to hand net or spear fishing spots at concentration points of the use of such devices and intertribal agreements about the temporally coordinated construction of multiple salmon weirs in close succession in the same river.

As a result of the unpredictable annual fluctuations of the fish populations, salmon fishing was surrounded by numerous rituals and taboos, that, in the eyes of the Indians, were real factors that were said to guarantee a good salmon catch.

- d) The information about a series of tribes demonstrate that Salmon Fishing Organizers conducted such rituals or supervised their execution, they ensured compliance with taboos, and provided for the restoration of normal conditions in the case of violations. With the execution of supervision of the Ceremony of the First Salmon, the Salmon-Chiefs had the opportunity to determine the date of the beginning of salmon fishing season.

Although, considering the fragmented availability of sources, which has been repeatedly acknowledged, it cannot be demonstrated that every Salmon-Chief performed all of the functions

mentioned above, and, considering that the emphases in the duties of Salmon-Chiefs varied from place to place,

It seems to have been typical for the groups of the eastern Columbia River Plateau to consolidate all four of these basic duties in the hands of the Salmon Fishing Organizer. Although there had been no significant developments toward division of labor or specialization in certain branches of food acquisition, only a few people in each community met the requirements for execution of such a complex job as that of Salmon Fishing Organizer. According to the beliefs of the Indians, the suitability of an Indian for leading Salmon Fishing Operations was made most obvious by his possession of a powerful guardian spirit, in other words, based on the success or non-success of a past salmon fishing operation.

The recognition of an Indian by the community as Leader of Salmon Fishing Operations could last for a season or for life. Among the Sinkaietk, a weir construction leader introduced himself each year when he announced the time and location of his planned weir construction operation in winter. This notification was important so that the members of the local group could make their plans before they went their separate ways in spring. If Ross's claim that the Salmon Fishing Organizers of the Okanagon were selected before the beginning of weir construction is taken literally and is not just referring to reconfirmation for the season, this mode of appointment might be interpreted as evidence of the presence of Indians from different local bands, whose job it was to help determine the leader of a jointly undertaken salmon fishing operation. In contrast, the appointment of a Salmon-Chief by the Sanpoil was, by all appearances, long-term. Perhaps the fact that in their territory there were only a few large salmon weirs played a role in the relatively strong institutional stability of the institution of Salmon-Chief.

Although unequivocal evidence is not available, it can be assumed that during the likely cooperation of one village and family group for the construction of a modest weir in the coastal waters of Washington, Oregon, and California, the development of a special leader was not necessary. There may have also been technological specialists within such communities. However, the organization of the work, a possible division of fish, and representation in dealings with other groups did not have the same social importance as they did at the large salmon weirs of the Columbia River Plateau and were taken over, when necessary, by influential people that also stepped forward on other economic and social occasions. It must be said that in the coastal regions of Washington, Oregon, and California, with the widespread economic and social autarchy of the villages, developed rights of family groups to certain spots of intensive food acquisition, and the predominant role of economically influential heads of families in their own river sections, large weirs were occasionally built. Among the Tolowa there were individual Indians with rights to the places where such weirs were erected. There is some evidence that they held their titles, above all, in the sense of custody for a certain group of people, probably for a group of relatives. It is notable that duties similar to those of a Salmon-Chief were consolidated in their hands: a custodian prepared the weir construction materials, notified the workers, gave permission to participate to outsiders, and carried out the distribution of the fish. The example of the Tolowa shows, therefore, that under widely varying social conditions the organization of salmon fishing—especially with technical and organizational duties similar to those of a Salmon-Chief—was taken over by Indians that exercised their control over a point of intensive food acquisition mostly as custodian of a certain group. In any case, these Tolowa surely used their position to improve their economic and social standing, and the heritability of the right to the spots for the construction of large weirs makes it clear that from situations similar to that of the Tolowa, lines of development could have originated, as can be seen among the Nootka of the Northwest Coast. Here, the chiefs of the individual subtribal groups did

not have anything to do with the leadership of large-scale fishing operations; however, having control of the usage rights of whole rivers, they did regulate fishing in these waters to a large degree: they opened fishing season (salmon season) and gave their relatives permission to fish.⁶¹³ This direct dependence of relatives marked the greater authority of the Nootka chiefs. It is also reflected in the fact that the first catch by the members of the group was usually given to the chief.⁶¹⁴ However, he mostly used these donations for holding feasts in which all members of a subtribal group participated.⁶¹⁵ Thus, the Nootka chiefs aimed not only to procure, via usage rights to fishing in certain good salmon rivers, direct economic advantages, but also to demonstrate their important privileges, especially with regard to economic affairs.

Another developmental tendency toward separating the technical-organizational leadership of large fishing operations from the right to the catch is seen in the organization of weir fishing by the Yurok at Kepel. At this place of communal construction of a large weir system, the division of caught salmon or regulation of participation by outsiders were not duties of the weir-construction leader. The participation of individual groups from different villages was determined up front by fixed rights to gates in a weir. The scope of duties of the weir construction leader at Kepel encompassed the technical and organizational supervision of the operation, which was inseparable from his position as mediator between the mythical past and the present. It is probably not just by coincidence that the idea of a ritual world-renewal or stabilization of the existing world order was associated with the extensive work of constructing a fishing system upon which all their lives depended, as it was also connected with the renovation of certain sweat houses.

This restriction of the basic functions of a Salmon Fishing Organizer, in the case of the weir construction leader from Kepel—especially the absence of the division of the caught fish from the duties of the Organizers of the workflow—was also observed in post-indigenous societies. Without providing details here, there are some examples at hand that give an idea of the width and direction of this development:

Documents from the 16th and 17th century mention the activity of Fishing masters (“barrier master,” “weir master,” “fishery master”) during the construction of large barriers on the streams that flow into the Gulf of Bothnia. As officials that inherited their positions nominally,⁶¹⁶ these fishing masters organized and led extensive projects to construct fishing weirs and especially salmon weirs.⁶¹⁷ They served territorial lords as technical specialists and, not being tied to a particular river or population, they sometimes worked here, sometimes there.⁶¹⁸ For their efforts they received remunerations⁶¹⁹, but by all

⁶¹³ DRUCKER, 1951, p. 248-51. When numerous small salmon processing facilities were built in British Columbia starting in around 1890, they sought to hire influential native people that could serve as mediators between the employers and the Indian population: “A practice that grew up very early was for the canner to hire one or more “Indian bosses.” The cannery managers tried to pick out men who combined various qualities: enough English or Chinook jargon to make communication easy, and influence among the Indians. In many cases young chiefs were selected. One of the important functions of the Indian boss was to act as a recruiter, trying to get the services of the best fishermen for his particular cannery” (DRUCKER, 1958, p. 123).

⁶¹⁴ DRUCKER, 1951, p. 251

⁶¹⁵ DRUCKER, 1951, p. 251

⁶¹⁶ SIRELIUS, 1906, pp. 148, 306, 309, 459

⁶¹⁷ SIRELIUS, 1906, pp. 148, 306, 311, 459

⁶¹⁸ SIRELIUS, 1906, pp. 148, 306, 309, 311, 459. The weir construction leaders (“weir masters”) often introduced new methods of fishing in certain regions.

⁶¹⁹ SIRELIUS, 1906, pp. 148

appearances they did not have anything to do with the distribution of fish. Stewards, who, above all, in the interest of the crown, regulated fishing in their assigned regions and were responsible for seeing to it that the required taxes were paid, oversaw use of the waters. In Finnish regions so-called “salmon bailiffs” were appointed as stewards.⁶²⁰

Work groups for fishing with certain large apparatuses probably formed on Ruegen and Hiddensee starting in the 14th and 15th century.⁶²¹ While spokesmen presided over these municipalities, represented them in dealings with the lords of the land, and occasionally also managed the communal budget of the municipality⁶²², by all appearances they did not directly regulate the appropriation of caught fish. This was determined by how much of the work a given member of the municipality carried out, which was also reflected in the size of each member’s share in the communally used instruments of production.⁶²³ The entire work process was organized according to traditional rules so that each member of the municipality, having an approximately equal portion of the work and equal share of the instruments of production, also received an equal portion of the catch.⁶²⁴ The Maszoperia, on the coast of the Baltic Sea from Gdansk to Leba, were also permanent fishing communities, whereby the alliances of the fishermen appear to have been more stable than the associations of fisher-farmers or fishermen and farmers.⁶²⁵ The Maszoperia were under the leadership of permanent or elected leaders⁶²⁶ that, in this case, probably did not have any influence on the division of fish either; a Maszoperia’s share in the instruments of production —especially variable in the fisher- and farmer communities—determined their share of the catch.⁶²⁷ In the Farmer-fishing communities of some regions of West-Finland in the 19th and 20th century, in addition to regulation of fishing via a principal compensation of all interested parties—above all, via regular alternation in the utilization of fishing opportunities⁶²⁸—the division of fishing rights according to the corresponding amount of land owned (also reflected in the tax rate)⁶²⁹ came into effect. Special officials were deployed to regulate the rules of customary law when multiple communities worked together.⁶³⁰ Some of them occupied their positions long-term, because they had qualifications as experienced fishermen⁶³¹; some of them changed out at short intervals⁶³², which suggests that a large group of participants were qualified to perform such a role. If, on the one hand, it was the feudal ownership of land that led to the separation of the technical leadership from the responsibility for the regulation of legal aspects of fishing, in the fishing or fisher-farmer communities

⁶²⁰ SIRELIUS, 1906, pp. 149, 292. A Danish decree from the 17th century regarding salmon fishing in several Finnish rivers demonstrates the influence local representatives of the crown had on native organizers of salmon fishing; it states, among other things: “One of the best and most skillful Laplanders, who draws the lot for fishing, shall be appointed as chief over the others; and as he is instructed, or else in the case of changes in the condition of the rivers, depending upon whether the years bring more or less snow, so the others shall obey” (SIRELIUS, 1906, p. 150).

⁶²¹ PEESCH, 1961, p. 49

⁶²² PEESCH, 1961, p. 94-6, 123/4

⁶²³ PEESCH, 1961, pp. 139-43

⁶²⁴ PEESCH, 1961, p. 138-43

⁶²⁵ KUCHARSKA, 1962, pp. 58-60

⁶²⁶ KUCHARSKA, 1962, pp. 58-60

⁶²⁷ KUCHARSKA, 1962, pp. 58-60

⁶²⁸ NIKANDER, 1938, pp. 52, 55-62, 65-72

⁶²⁹ NIKANDER, 1938, pp. 51, 60, 66, 68

⁶³⁰ NIKANDER, 1938, pp. 68-9

⁶³¹ NIKANDER, 1938, p. 69

⁶³² NIKANDER, 1938, p. 69

either rules of customary law or the varying—depending on amount of work performed or portion of used means of production or even amount of land owned—claim to the catch separated the regulation of division from the management of operations.

Based on our findings up until this point, it seems to have been typical for the socio-economic structure of indigenous societies, to combine the technical-organizational leadership of communal fishing operations, as well as the supervision of the division of the caught fish and the representation of the interests of the group in dealings with outsiders, in the hands of ONE official. Occasionally, guaranteeing the catch by taking up contact with the fish via guardian spirits or primitive myths, believed to have a real effect, was added to this. In early phases of the development of indigenous communities, which were marked by low levels of specialization in distribution of work and little development of privileges of individuals or groups, the tasks mentioned here were fulfilled by Salmon Fishing Organizers or Salmon-Chiefs, who managed the interests of their community, or even multiple communities, at a certain location, without any obvious chance of receiving an above-average portion of the food.

If collective salmon fishing activities were carried out by relatives or people living together in close quarters, their management certainly may have fallen to the permanent leader (chief) of the community, without this implying that he had special privileges.

In cases where social differentiation and rights to the means of production had developed, the functions of a Salmon Fishing Organizer or Salmon-Chief listed here were brought together in the hands of the people who led the communal efforts due to their possession of the usage rights to the spots of intensive food acquisition. By all appearances, there was a wide range of variation in the way these usage rights were manifested, from the custodianship of the interests of one community to the manipulation of usage rights with the goal of obtaining economic advantages via an extra share of food.

If the influential and often decisive status of the “owner” of spots of intensive food acquisition was often directly tied to this legal claim, in the tribes with developed social classes, the control of important fishing waters fell to the hereditary chiefs and their families. Even they saw their control of fishing in certain waters as an important privilege and as an important way to strengthen their positions. By changing regulations and orders regarding use of waters, these chiefs greatly influenced the whole course of fishing.

Where individual rights of interested groups, mostly family groups, to the important means of production existed in indigenous societies, the technical-organizational side of the management of salmon fishing operations, under certain conditions, could be limited to performance of accompanying rituals. Under the conditions of feudalism, the technical and organizational leadership of salmon fishing with large barriers, on the one hand, and the overall management of the use of waters, on the other hand, fell to two different officials. Even in the fisher and fisher-farmer communities of the middle ages and modern times the division of fish was either determined by rules of customary law or by the share of the individual participants in the workload, or ownership of the communally-used instruments of production or land, and were regulated by a leader of communal fishing operations or by the leaders of temporary or permanent fishing cooperatives.

APPENDIX I

Evidence of Food-Chiefs (other than Salmon-Chiefs) in western North America

A review of the ethnographic literature on the Indian tribes of the Columbia River Plateau, Oregon, and California, turned up evidence for the traditional existence of Food-Chiefs (other than Salmon-Chiefs) in the following groups:

a) Leaders of hunting operations that are not described in detail: Chilcotin⁶³³ (?), Shuswap⁶³⁴, Lillooet⁶³⁵, Thompson⁶³⁶, Okanagon⁶³⁷, Sanpoil⁶³⁸ (?), Wenatchi⁶³⁸ (?), Kittitas⁶³⁸ (?), Umatilla⁶³⁸ (?), Tenino⁶³⁸ (?), Klikitat⁶³⁸ (?), Wishram⁶³⁹, Kutenai⁶⁴⁰, Kalispel⁶⁴¹ (?), Coeur d'Alene⁶⁴², Flathead⁶⁴³, northern Shoshone groups (Lemhi River-S.⁶⁴⁴, Fort Hall-S.⁶⁴⁵), Bannock⁶⁴⁶, Gosiute⁶⁴⁷ (Skull Valley-G.⁶⁴⁸, Deep Creek-G.⁶⁴⁹, Spring Valley-G.⁶⁵⁰), western Shoshone groups (Bruneau-S.⁶⁵¹ (?), North Fork-S.⁶⁵², Grouse Creek-S.⁶⁵³, Promontory Point-S.⁶⁵⁴, Battle Mountain-S.⁶⁵⁵, Elko-S.⁶⁵⁶, Pine Creek-S.⁶⁵⁷, Diamond

⁶³³ RAY, 1942, p. 117

⁶³⁴ TEIT, 1909, pp. 569, 573; RAY, 1942, p. 117

⁶³⁵ TEIT, 1906a, p. 255; HILL-TOUT, 1905, p. 130

⁶³⁶ TEIT, 1930, p. 262; RAY, 1942, p. 117

⁶³⁷ TEIT, 1930, p. 262

⁶³⁸ RAY, 1942, p. 117

⁶³⁹ SPIER, SAPIR, 1930, p. 180

⁶⁴⁰ *Upper Kutenai*: TURNEY-HIGH, 1941, pp. 146, 148; *Kutenai*: RAY, 1942, p. 117

⁶⁴¹ RAY, 1942, p. 117

⁶⁴² TEIT, 1930, p. 155; RAY, 1942, p. 117

⁶⁴³ TEIT, 1930, p. 379; RAY, 1942, p. 117

⁶⁴⁴ STEWARD, 1938, p. 194; STEWARD, 1943, pp. 279, 338

⁶⁴⁵ STEWARD, 1943, pp. 279, 338

⁶⁴⁶ STEWARD, 1943, pp. 279, 338

⁶⁴⁷ STEWARD, 1938, p. 137, 139

⁶⁴⁸ STEWARD, 1943, pp. 279

⁶⁴⁹ STEWARD, 1942, p. 345; STEWARD, 1943, pp. 279, 338

⁶⁵⁰ STEWARD, 1938, p. 127

⁶⁵¹ STEWARD, 1941, p. 313

⁶⁵² STEWARD, 1941, p. 313

⁶⁵³ STEWARD, 1943, p. 279

⁶⁵⁴ STEWARD, 1943, pp. 279

⁶⁵⁵ STEWARD, 1941, p. 313

⁶⁵⁶ STEWARD, 1941, p. 313

⁶⁵⁷ STEWARD, 1938, p. 142

Valley-S.⁶⁵⁸, Morey-S.⁶⁵⁹, Great Smoky Valley-S.⁶⁶⁰, Reese River-S.⁶⁶¹), Ute (Pahvant⁶⁶², Taviwatsiu⁶⁶² (?), Moewatci⁶⁶², Wimoenuntci⁶⁶³), Washo⁶⁶⁴, Shoshone of eastern California⁶⁶⁵, Achomawi⁶⁶⁶.

b) Leaders of communal deer hunts: Thompson⁶⁶⁷, Sinkaietk⁶⁶⁸, Sanpoil⁶⁶⁹ and Nespelem⁶⁷⁰, Lower Kutenai⁶⁷¹, Coeur d'Alene⁶⁷², Shoshone or northern Paiute of the Owyhee River⁶⁷³, Gosiute (Skull Valley-G.⁶⁷⁴) western Shoshone groups (Grouse Creek-S.⁶⁷⁵, Promontory Point-S.⁶⁷⁶, Battle-Mountain-S.⁶⁷⁷, Elko-S., Egan-S.⁶⁷⁸, Morey-S.⁶⁷⁹), Fish Springs Paiute⁶⁸⁰, northern Paiute (Tasiget-tviwarai⁶⁸¹, Kuyui-doekado⁶⁸¹), Surprise Valley-Paiute⁶⁸², southern Paiute (Kaibab-P⁶⁸³, San Juan-P.⁶⁸⁴) Ute (Moanunts⁶⁸⁵, Pahvant⁶⁸⁶, Taviwatsui⁶⁸⁵, Moewatci⁶⁸⁷, Wimoenentci⁶⁸⁵), Washo⁶⁸⁸, Achomawi⁶⁸⁹, Wintu⁶⁹⁰, Pomo (eastern Pomo)⁶⁹¹, Yokuts (Chuckchansi)⁶⁹².

⁶⁵⁸ STEWARD, 1938, p. 142

⁶⁵⁹ STEWARD, 1941, p. 313

⁶⁶⁰ STEWARD, 1941, p. 313

⁶⁶¹ STEWARD, 1941, p. 313

⁶⁶² STEWARD, 1942, p. 300

⁶⁶³ STEWARD, 1942, p. 335

⁶⁶⁴ STEWARD, 1941, p. 440

⁶⁶⁵ STEWARD, 1938, p. 76

⁶⁶⁶ KNIFFEN, 1928, p. 314

⁶⁶⁷ TEIT, 1900, p. 247

⁶⁶⁸ SPIER, 1938, pp. 19, 87, 98, 159

⁶⁶⁹ RAY, 1932, pp. 70-80

⁶⁷⁰ TURNEY-HIGH, 1941, 39, 52, 152

⁶⁷¹ TEIT, 1930, pp. 102, 162

⁶⁷² STEWARD, 1938, p. 171

⁶⁷³ STEWARD, 1943, p. 359

⁶⁷⁴ STEWARD, 1943, p. 292

⁶⁷⁵ STEWARD, 1938, p. 179; STEWARD, 1943, p. 292, 359

⁶⁷⁶ STEWARD 1941, p. 271

⁶⁷⁷ STEWARD 1941, p. 271

⁶⁷⁸ STEWARD 1941, p. 271

⁶⁷⁹ STEWARD 1941, p. 271

⁶⁸⁰ STEWARD 1938, p. 115

⁶⁸¹ STEWARD, 1941, p. 366

⁶⁸² KELLY, 1932, pp. 81, 182

⁶⁸³ STEWARD, 1942, p. 240; STEWARD 1943, p. 359

⁶⁸⁴ STEWARD, 1942, p. 240

⁶⁸⁵ STEWARD, 1942, p. 240

⁶⁸⁶ STEWARD, 1942, p. 240; STEWARD 1943, p. 359

⁶⁸⁷ STEWARD, 1942, p. 240, 335

⁶⁸⁸ STEWARD, 1941, p. 366

⁶⁸⁹ STEWARD, 1941, p. 366, 422

⁶⁹⁰ DUBOIS, 1935, p. 10

⁶⁹¹ LOEB, 1926, p. 170

⁶⁹² GAYTON, 1948, p. 183

c) Leaders of bison hunting operations: Kutenai⁶⁹³, Flathead⁶⁹⁴, Coeur d'Alene⁶⁹⁵, Shoshone and Bannock of Fort Hall⁶⁹⁶, Shoshone of Promontory Point⁶⁹⁷, Ute (Moanunts⁶⁹⁸, Toempanoewots-nunts⁶⁹⁹, Mowatci⁷⁰⁰, Wimoenuntci⁶⁹⁸).

d) Leaders of communal bear hunts: Sinkaietk⁷⁰¹, Wintu⁷⁰².

e) Leaders of communal mountain sheep hunts: Okanagon⁷⁰³, Owens Valley-Paiute⁷⁰⁴.

f) Leaders of communal antelope hunts: Northern Shoshone groups (Lemhi River-S.⁷⁰⁵, Fort Hall-S.⁷⁰⁶), Bannock⁷⁰⁷, Shoshone or northern Paiute of the Owyhee River⁷⁰⁸, Gosiute (Deep Creek-G.⁷⁰⁹, Spring Valley-G.⁷¹⁰), western Shoshone groups (Grouse Creek-S.⁷¹¹, Promontory Point-S.⁷¹¹, Battle Mountain-S.⁷¹¹, Elko-S.⁷¹¹, Ruby Valley-S.⁷¹¹, Egan Canyon-S.⁷¹¹, Snake Valley-S.⁷¹², Ely-S.⁷¹³, Hamilton-S.⁷¹¹, Morey-S.⁷¹¹, Smith Creek-S.⁷¹¹, Great Smoky Valley-S.⁷¹¹, Reese River-S.⁷¹¹, Little Lake-S.⁷¹⁴), northern Paiute (Wada-doekado⁷¹⁵, Tagoe-toeka⁷¹⁵, Kidue-doekadoe⁷¹⁵, Atsa'kudoekwa-tuvi-warai⁷¹⁵, Sawa'waktoedoe-tviwarai⁷¹⁵, Kuepadoekadoe⁷¹⁵, Kuyui-doekadoe⁷¹⁵, Tasiget-tuviwarai-Tow-doekadoe⁷¹⁵, Toevusi-doekadoe⁷¹⁵, Pakwi-dokadoe⁷¹⁶), Paviotso⁷¹⁷, Surprise Valley Paiute⁷¹⁸, southern Paiute (Antarianunts-P., Shivwits-P., Kaibab-P., San Juan-P.)⁷¹⁹, Ute (Moanunts, Toempanoewotsmunts, Pahvant, Taviwatsiu, Moewatci)⁷²⁰, Washo⁷²¹, Achomawi.⁷²²

⁶⁹³ CHAMBERLAIN, 1906, p. 185; RAY, 1942, p. 119

⁶⁹⁴ TURNEY-HIGH, 1937, p. 118; RAY, 1942, p. 119

⁶⁹⁵ TEIT, 1930, p. 103

⁶⁹⁶ STEWARD, 1938, pp. 204, 209, 210; STEWARD, 1943, p. 293

⁶⁹⁷ STEWARD, 1943, p. 293

⁶⁹⁸ STEWARD, 1942, p. 241

⁶⁹⁹ STEWARD, 1942, p. 300

⁷⁰⁰ STEWARD, 1942, p. 241, 300

⁷⁰¹ SPIER, 1938, pp. 22/3

⁷⁰² DUBOIS, 1935, p. 11

⁷⁰³ TEIT, 1930, pp. 243/4

⁷⁰⁴ STEWARD, 1933, p. 253

⁷⁰⁵ STEWARD, 1938, p. 190; STEWARD, 1943, p. 338

⁷⁰⁶ STEWARD, 1943, p. 338

⁷⁰⁷ STEWARD, 1943, p. 338

⁷⁰⁸ STEWARD, 1938, p. 171

⁷⁰⁹ STEWARD, 1942, p. 300; STEWARD, 1943, p. 338

⁷¹⁰ STEWARD, 1938, p. 124-6; STEWARD, 1941, p. 313

⁷¹¹ STEWARD, 1941, p. 313

⁷¹² STEWARD, 1938, p. 129

⁷¹³ STEWARD, 1938, p. 123; STEWARD, 1941, p. 313

⁷¹⁴ STEWARD, 1938, p. 82; STEWARD, 1941, p. 220

⁷¹⁵ STEWARD, 1941, p. 407

⁷¹⁶ STEWARD, 1941, p. 313

⁷¹⁷ LOWIE, 1924, pp. 303/4

⁷¹⁸ KELLY, 1932, pp. 83-6

⁷¹⁹ STEWARD, 1942, p. 300

⁷²⁰ STEWARD, 1942, p. 300

⁷²¹ STEWARD, 1941, p. 407

⁷²² STEWARD, 1941, p. 407

g) Leaders of communal rodent hunts: Northern Shoshone groups (Lemhi River-S.⁷²³), Bannock⁷²⁴ (?), Gosiute (Deep Creek-G.⁷²⁵, Spring Valley-G.⁷²⁶), western Shoshone groups (Bruneau-S.⁷²⁷, Grouse Creek-S.⁷²⁸, Promontory Point-S.⁷²⁹, Battle Mountain-S.⁷³⁰, Ruby Valley-S.⁷³¹, Diamond Valley-S.⁷³², Egan Canyon-S.⁷³³, Antelope Valley-S. and Deep Creek-P.⁷³⁴, Snake Valley-S.⁷³⁵, Ely (Steptoe Valley)-S.⁷³⁶, Hamilton-S.⁷³⁷, Morey-S.⁷³⁸, Smith Creek-S.⁷³⁹, Great Smoky Valley-S.⁷⁴⁰, Reese River (Jone Valley)-S.⁷⁴¹, Railroad Valley-S.⁷⁴², Kawich Mountains-S.⁷⁴³, Beatty-S.⁷⁴⁴, Saline Valley-S.⁷⁴⁵, Death Valley-S.⁷⁴⁶, Koso Mountains-S.⁷⁴⁷), northern Paiute (Wada-doekado⁷⁴⁸, Tagoe-toeka⁷⁴⁸, Kidue-doekadoe⁷⁴⁸, Atsa'kudoekwa-tuvi-warai⁷⁴⁸, Sawa'waktoedoe-tviwarai⁷⁴⁸ (?), Kuepadoekadoe⁷⁴⁸, Kuyui-doekadoe⁷⁴⁸, Tasiget-tviwarai⁷⁴⁸, Toe-doekadoe⁷⁴⁸, Pakwi-dokadoe⁷⁴⁸, Fish Lake Valley-P.⁷⁴⁹, Fish Springs-P.⁷⁵⁰), Paiute⁷⁵¹, Paviotso⁷⁵², Surprise Valley-Paiute⁷⁵³, Owens Valley-Paiute⁷⁵⁴, southern Paiute (Antarianunts-

⁷²³ STEWARD, 1943, p. 294

⁷²⁴ STEWARD, 1943, p. 294

⁷²⁵ STEWARD, 1942, p. 243

⁷²⁶ STEWARD, 1938, p. 126/7; STEWARD, 1941, pp. 273, 313

⁷²⁷ STEWARD, 1941, pp. 273, 313

⁷²⁸ STEWARD, 1938, p. 176; STEWARD, 1943, p. 338

⁷²⁹ STEWARD, 1938, p. 179; STEWARD, 1943, p. 294

⁷³⁰ STEWARD, 1938, p. 163; STEWARD, 1941, p. 313

⁷³¹ STEWARD, 1938, pp. 145-7; STEWARD, 1941, pp. 273, 313

⁷³² STEWARD, 1938, p. 141, 143

⁷³³ STEWARD, 1941, pp. 273, 313

⁷³⁴ STEWARD, 1938, p. 128/9

⁷³⁵ STEWARD, 1938, p. 129

⁷³⁶ STEWARD, 1938, p. 122/3; STEWARD, 1941, pp. 273, 313

⁷³⁷ STEWARD, 1941, pp. 273, 313

⁷³⁸ STEWARD, 1941, pp. 273, 313

⁷³⁹ STEWARD, 1938, pp. 105, 108; STEWARD, 1941, pp. 273, 313

⁷⁴⁰ STEWARD, 1938, p. 110; STEWARD, 1941, pp. 273, 313

⁷⁴¹ STEWARD, 1938, pp. 105, 108; STEWARD, 1941, pp. 273, 313

⁷⁴² STEWARD, 1938, pp. 119/20

⁷⁴³ STEWARD, 1938, p. 112

⁷⁴⁴ STEWARD, 1941, p. 273

⁷⁴⁵ STEWARD, 1938, p. 77

⁷⁴⁶ STEWARD, 1938, pp. 76, 89/90; STEWARD, 1941, pp. 273, 313

⁷⁴⁷ STEWARD, 1938, p. 76

⁷⁴⁸ STEWARD, 1941, pp. 368, 407

⁷⁴⁹ STEWARD, 1938, p. 66; STEWARD, 1941, pp. 313, 329

⁷⁵⁰ STEWARD, 1941, pp. 313, 329

⁷⁵¹ LOWIE, 1924, pp. 284/5

⁷⁵² LOWIE, 1924, pp. 197/8, 285, 305; PARK, 1938, p. 62

⁷⁵³ KELLY, 1932, p. 88

⁷⁵⁴ STEWARD, 1933, p. 304 (*Mono Lake*); STEWARD, 1938, p. 53; STEWARD, 1941, p. 254

P.⁷⁵⁵, Shivwits-P.⁷⁵⁶, Kaibab-P.⁷⁵⁵, San Juan-P.⁷⁵⁵), Ute (Moanunts, Tömpanöwotsnunts, Pahvant, Taviwatsiu)⁷⁵⁷, Washo⁷⁵⁸, Achomawi⁷⁵⁹, southern Maidu.⁷⁶⁰

h) Leaders of communal waterfowl hunts: Lower Kutenai⁷⁶¹, northern Shoshone groups (Lemhi-S.⁷⁶², Fort Hall-S.⁷⁶³ (?)), Bannock⁷⁶⁴, Gosiute (Spring Valley-G.⁷⁶⁵), western Shoshone groups (Grouse Creek-S.⁷⁶⁶, Promontory Point-S.⁷⁶⁷), northern Paiute (Wada-doekado, Tagoe-toeka, Kidue-doekadoe, Atsa'kudoekwa-tuvi-warai, Sawa'waktoedoe-tviwarai (?), Kuepadoekadoe, Kuyui-doekadoe, Tasiget-tuviwarai, Toe-doekadoe, Pakwi-dokadoe)⁷⁶⁸, Paviotso⁷⁶⁹, Surprise Valley-Paiute⁷⁷⁰, Ute (Taviwatsiu)⁷⁷¹, Achomawi.⁷⁷²

i) Supervisors of the harvest of various vegetables and leaders of piñon harvest expeditions :

1. Vegetables in general: Lillooet (?), Sanpoil (?), Wenatchi (?), Kittitas (?), Umatilla (?), Tenino (?), Klikitat (?), Kalispel (?), Coeur d'Alene (?), Kutenai (?), Flathead (?)⁷⁷³, northwestern California.⁷⁷⁴

2. Berries: Salish in general⁷⁷⁵, Shuswap⁷⁷⁶, Thompson⁷⁷⁷

3. Wokas: Klamath⁷⁷⁸

4. Piñon: Northern Shoshone groups (Lemhi-S.⁷⁷⁹, Fort Hall-S.⁷⁸⁰), Gosiute (Deep Creek-G.⁷⁸¹, Spring Valley-G.⁷⁸²(?)), western Shoshone groups (North Fork-S.⁷⁸³, Ruby Valley-S.⁷⁸⁴, Diamond Valley-S.⁷⁸⁵,

⁷⁵⁵ STEWART, 1942, p. 243

⁷⁵⁶ LOWIE, 1924, p. 196; STEWART, 1942, pp. 243, 346

⁷⁵⁷ STEWART, 1942, p. 243

⁷⁵⁸ LOWIE, 1924, pp. 196, 285; STEWART, 1941, pp. 368, 407

⁷⁵⁹ STEWART, 1941, pp. 368, 407

⁷⁶⁰ FAYE, 1923, p. 40

⁷⁶¹ TURNEY-HIGH, 1941, pp. 42/3, 152/3

⁷⁶² STEWARD, 1938, p. 190; STEWARD, 1943, p. 296

⁷⁶³ STEWARD, 1943, p. 338

⁷⁶⁴ STEWARD, 1943, p. 338

⁷⁶⁵ STEWARD, 1941, pp. 274, 313

⁷⁶⁶ STEWARD, 1943, p. 296

⁷⁶⁷ STEWARD, 1938, p. 179; STEWARD, 1943, pp. 268, 296

⁷⁶⁸ STEWARD, 1941, pp. 369, 407

⁷⁶⁹ LOWIE, 1924, pp. 197, 285

⁷⁷⁰ KELLY, 1932, p. 90

⁷⁷¹ STEWART, 1942, p. 300

⁷⁷² KNIFFEN, 1928, p. 314; STEWART, 1941, p. 407

⁷⁷³ RAY, 1942, p. 133

⁷⁷⁴ DRIVER, 1939, p. 383

⁷⁷⁵ BOAS, 1906, p. 222

⁷⁷⁶ DAWSON, 1892, p. 21

⁷⁷⁷ TEIT, 1900, p. 294

⁷⁷⁸ SPIER, 1930, p. 162

⁷⁷⁹ STEWARD, 1943, p. 338

⁷⁸⁰ STEWARD, 1943, p. 338

⁷⁸¹ STEWARD, 1942, p. 300, 345

⁷⁸² STEWARD, 1938, p. 126

⁷⁸³ STEWARD, 1941, p. 254

⁷⁸⁴ STEWARD, 1938, pp. 146/7

⁷⁸⁵ STEWARD, 1938, pp. 142/3

Egan-S.⁷⁸⁶, Antelope Valley-S.⁷⁸⁷, Snake Valley-S.⁷⁸⁸, Little Smoky Valley-S.⁷⁸⁹ northern Paiute (Kuyui-doekadoe)⁷⁹⁰, Owens Valley (Mono Lake)-Paiute⁷⁹¹, southern Paiute (Antarianunts-P.).⁷⁹²

j) Persons responsible for the irrigation of areas of wild plants: Owens Valley-Paiute⁷⁹³, northern Paiute of Fish Springs.⁷⁹⁴

APPENDIX II

Salmon runs as the foundation for Indian fishing economies in western North America

The general behavior of the five species of Pacific salmon mentioned in the present work (Genus *Oncorhynchus*) includes the following characteristics—which shaped the traditional fishing economies of the Indian population:

a) The distribution of the salmon in the rivers of western North America is largely dependent on spawning conditions, whereby migration regions of individual species vary from one another. During their migrations the salmon can pass through very different climate and vegetation zones.

b) In the interior of western North America the salmon distribution and the areas of intensive Indian fishing were identical. The areas directly neighboring the regions with salmon runs do not possess any comparable fish population.

c) Not every river within the range of the Pacific salmon species contains salmon. Natural obstacles stop the salmon run in a series of rivers, poor spawning opportunities prevent the development of a strong salmon run in certain waters.

d) In almost all rivers in the North American West salmon can only be found for several weeks or months; they can only be found year-round in areas near the mouths of large rivers.

e) The length of the natural salmon season in a river or section of a river runs from the arrival of the first salmon until spawning and a few days beyond that, it is, above all, determined by the number of salmon species migrating in the river or section of river and by the relationship between the different migration times of these species. On the eastern edges of the salmon range there are often only a few species of salmon; the natural salmon season is usually shorter than it is in regions near the coast. Thus,

⁷⁸⁶ STEWARD, 1941, p. 313

⁷⁸⁷ STEWARD, 1938, p. 129

⁷⁸⁸ STEWARD, 1938, p. 130

⁷⁸⁹ STEWARD, 1938, p. 116

⁷⁹⁰ STEWARD, 1941, p. 407

⁷⁹¹ STEWARD, 1933, p. 304

⁷⁹² STEWART, 1942, p. 300

⁷⁹³ STEWARD, 1933, pp. 247, 304; STEWARD, 1938, p. 53

⁷⁹⁴ STEWARD, 1941, p. 281



Map 2
Geographic distribution of the genus
Oncorhynchus in western North America.
 From: ROSTLUND, 1952, Map 8 (p. 257)

the danger that the absence of one salmon species cannot be compensated for by catching another is greater.

f) A year with a weak run of a certain species of salmon may be directly preceded or followed by a good year; a prediction for the coming year—even for present day commercial fishing!—cannot be made with certainty. In some rivers, however, cyclical fluctuations in the strength of the run of a certain species have been observed. A bad year for one species does not by any means mean it will be a bad year for any other salmon species.

g) The non-cyclical fluctuations in the strength of the salmon runs, with a few exceptions (above all, sinking water levels and interruption of the course of the stream), are not determined by the weather patterns of current year. Usually extensive harm to the fry, due to floods, heavy rains, excessive drying of the river bed, and other causes, is responsible for such fluctuations. This damage first becomes noticeable in the salmon run, depending on the maturation period of different salmon species, two to seven years later.

h) In general, changes in the strength of a run of a certain species of salmon in a given year are observed to be consistent across all waters of the greater region, however there are important exceptions (above all in the Fraser River of British Columbia).

i) In many rivers, salmon migrate in such great numbers that under normal circumstances and even in less favorable years, sufficient fish for the sustenance of a group through the winter months can be caught in a relatively short amount of time. led them to become the most important component of Indian winter reserves in large areas of the North American West.

Regarding a) The chinook salmon (*Oncorhynchus tshawytscha* Walbaum), the sockeye salmon (*O. nerka* Walb.), pink salmon (*O. gorbuscha* Walb.), chum salmon (*O. keta* Walb.), and coho salmon (*O. kisutch* Walb.) migrate every year from the open ocean into the rivers of the Pacific coast of North America to spawn in inland waters. It is mainly the rivers from Point Hope in Alaska down to the coastal region of the Santa Barbara Channel in California that are visited by salmon migrations (see Map 2). However, not every species visits all of the coastal region mentioned; Sockeye and pink salmon do not appear in large numbers south of the Columbia River (small runs of sockeye salmon reach California); the chum salmon, in isolated cases, reaches the California coast; Chinook and Coho salmon still regularly frequent the Sacramento River system (ROSTLUND, 1952, pp. 256/7). It seems, above all, to be a relatively narrow and species-specific adaptation of the fertilized roe and fry to the water temperature that is responsible for the different ranges of individual salmon species and for the North-South distribution of the genus *Oncorhynchus* in general (ROSTLUND, 1952, pp. 16-18; BRETT, 1952, passim; BRETT, HOLLANDS, ALDERDICH, 1958, pp. 587 seqq.).

Within the large ranges of their migrations, the individual salmon species prefer certain rivers or sections thereof: Of all five salmon species migrating in the Columbia River, the sockeye salmon rarely pushes farther upstream than the mouth of the Okanogan River; in the Okanogan River only the Chinook, Sockeye, and Coho run, until the Chinook stop near Oroville (SPIER, 1938, p. 12; RAY, 1932, p.57). Experiments with tagged fish have demonstrated that the Chinook salmon on the coast of Washington and British Columbia preferentially migrate to the Columbia and Fraser Rivers to spawn, while in the same region the Coho salmon visits the numerous smaller coastal rivers of the Puget Sound and Willapa Bay (MILNE, 1957, p. VII and passim; see Map 3, 4). Although the statements of the different authors vary slightly from one another, the following general rules for the preferred spawning regions of the individual species of salmon apply: the chinook salmon run in larger rivers and spawn above all in the many short brooks and streams near the coast between Alaska and the Puget Sound, the coho salmon frequently spawn in the lower portions of rivers—often in regions affected by the tide (BARTZ, 1942, S. 15-17; NEAVE, 1953, pp. 451, 478/9; HOAR, 1958, pp. 391 seqq., also see GIBBS, 1877, p. 194). Hoar attempted to explain these preferences for different spawning regions on the basis of a broad hypothesis for the evolution of the species of the genus *Oncorhynchus* (HOAR, 1958, pp. 391 seqq.).

The fact that the environmental conditions in spawning regions seem to be the most decisive factor for salmon distribution, also explains how the salmon can pass through very different climate and vegetation zones during their runs. That's how they ended up in the Snake River in the arid border region of the Great Basin with its few opportunities for native Indian means of subsistence. With the lack of wild edible plants and game, salmon became the staple of the Indian diet. Fremont reports about the Shoshone near Salmon Falls on the middle reaches of the Snake River:

“Our encampment was about one mile below the Fishing Falls, a series of cataracts with very inclined planes, which are probably so named because they form a barrier to the ascent of the salmon; and the great fisheries, from which the inhabitants of this barren region almost entirely derive a subsistence, commence at this place.”

Regarding these Indians Fremont comments in the same spot:

“...who grow fat and become poor with the salmon, which at least never fail them—the dried being used in the absence of the fresh” (FREMONT, 1845, p. 168).

Regarding b) One of the unique qualities of the fish fauna of the North American West is that, in comparison with eastern North America, it encompasses relatively few orders and genera and the

anadromous fish greatly outnumber—although only seasonally—the freshwater fish species. Among anadromous fish, the salmon has no competition, although the sturgeon played a significant role as a source of food (ROSTLUND, 1955, pp.15, 51, 53, 64). The difference in the diversity of fish between the region of migration of the anadromous fish and the regions directly to the east is very large, with very few exceptions is a ratio between 20:1 and 30:1 (ROSTLUND, 1952, p. 66; also see Map 5).

Regarding c) Within the region of migration of the salmon, there are good, average, and bad salmon rivers. In some rivers only one species runs, in others, several; in any case, the maximum strength of the overall salmon run in a certain river depends on spawning opportunities. These opportunities to spawn are not unlimited and are present to very different extents in different waterways. Rostlund summed up the general requirements for spawning locations of Pacific salmon as follows:

“Suitable spawning beds are found by Pacific salmon on clean, gravelly bottoms or in pockets among rocks in rather shallow water. A certain amount of loose material is required to cover the fertilized eggs lest they be washed away or eaten by predators, but if too much sand or silt accumulates over the eggs they die from want of oxygen” (ROSTLUND, 1952, p. 16).

Rostlund also suggests that Indian fishery prevented a harmful overcrowding of spawning grounds and, thereby, was not only not depleting the salmon run, but keeping it within normal limits (ROSTLUND, 1952; pp. 16/7).

In addition to the specific tendency of each species of salmon to visit certain rivers or sections thereof, there are natural obstacles that often-made progression further upstream impossible, above all waterfalls and sand bars. According to Rostlund, on the basis of prehistoric evidence, at some of these spots there did not used to be deposits of sediment; he believes, however, that in general the boundaries of the salmon runs have not changed very much over time (ROSTLUND, 1952, pp. 17/8).

Regarding d) and e) Just as the migration routes of all salmon species are not the same, the migration seasons of the individual species also vary. Very generally it can be said that: the chinook

Map 3

Tagging of chinook salmon shows that this species mainly spawns in large river systems (*Columbia R.*, *Fraser R.*).

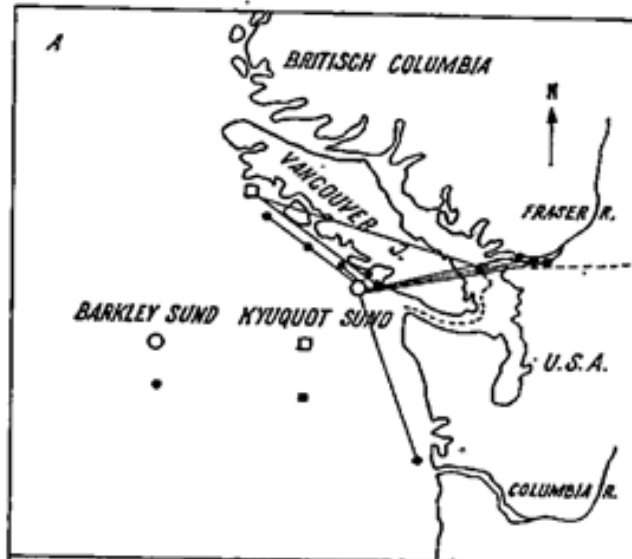
Tagging took place in 1950.

From: MILNE, 1957, Fig. 7 (p. 15)

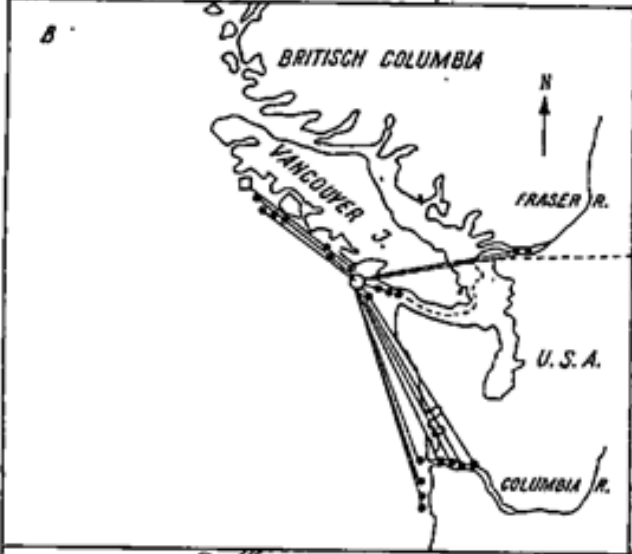
○ Tagging areas

● Locations where re-caught

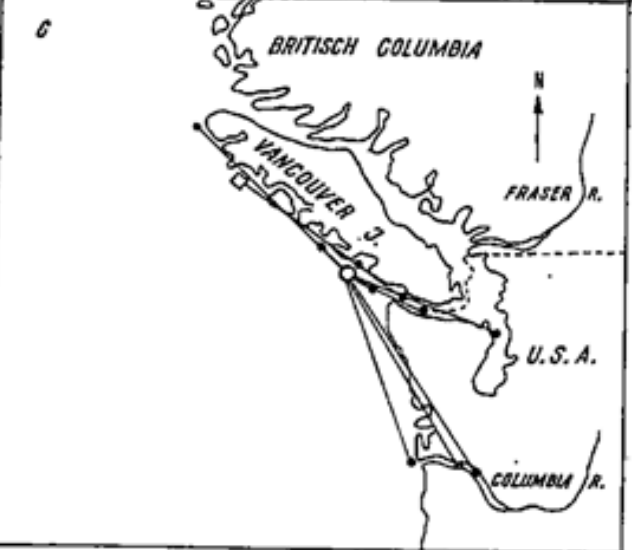
Re-caught in 1950

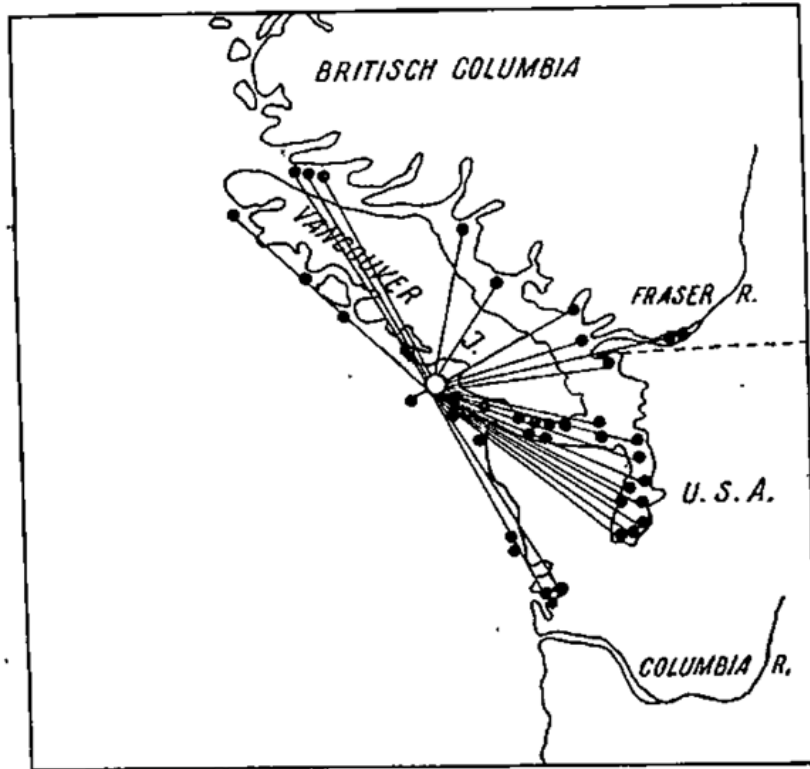


Re-caught in 1951



Re-caught in 1952





○ □ Tagging areas

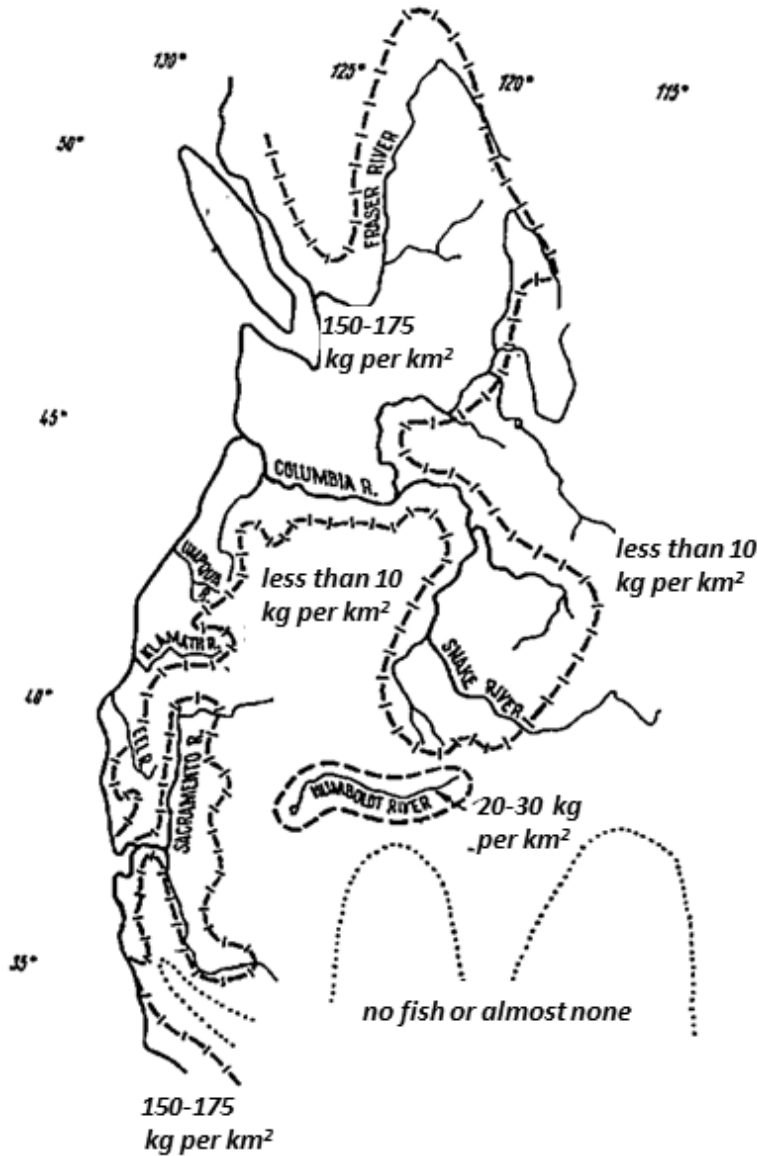
● ■ Locations where re-caught

Map 4

Tagging of coho salmon demonstrates that they prefer to spawn in smaller, coastal rivers.

From: MILNE, 1957, Fig. 12 (p. 24)

salmon often open salmon season in spring and the runs of the chum salmon (from the middle of August to November) and the coho (from July to November) close it in late fall. The sockeye salmon usually follows the chinook, thereafter the pink salmon (see RAY, 1938, p. 107). Despite all of the variation in migration times, the spawning times are quite close together. The chinook salmon reach the mouth of the Columbia River in April or May, but don't spawn before August/September after their generally long migration to the spawning grounds (BRETT, 1952, p. 267). The fall salmon (chum and coho) that rarely leave the open ocean before August, usually between the end of September and middle of November, spawn in October and November, however, in general, in the lower reaches of rivers (BRETT, 1952, p. 267; NEAVE, 1953, pp. 478/9). There are only a few reports on the speed of the salmon runs. In the Yukon River, the Chinook salmon are said to have traveled 125 km per day (BABTZ, 1942, S. 16), according to Nikolski, however, the chinook salmon reach an average speed of 14 to 18 km a day in Siberian waters (NIKOLSKI, 1957, S. 171). Chum salmon, according to the same author, manage a daily distance of 47 km (NIKOLSKI, 1957, p. 161). In the Fraser River Sockeye salmon take 27 days, going an average distance of over 40 km a day, to reach their spawning grounds (IDLER, BITNERS, 1959, p.240). The seasonal variation in strength and speed of the current seems not to have any impact on the migration speed of the salmon, but the resting breaks taken by migrating fish after overcoming rapids in many rivers seem to be more numerous in the spring with its higher current speed than in summer (ELLIS, 1962, pp. 139-43). This explains the use of certain types of hand nets for fishing in spring (see p. 55 of the present work).



Map 5

Average fish population in fresh waters of western North America (under natural conditions).

**Greatly simplified from:
ROSTLUND, 1952, Map 45 (p. 303)**

As different as the natural salmon seasons, due to the different migration times and routes of the salmon species, are in individual regions of western North America, there are general trends for larger regions. Based on the hypothesis that the relatively low water temperatures required (resulting from seasonal temperature drops in fall and snow melt water in spring) for the deposition of eggs exist at different times of year in different regions, Rostlund broke the North American West into three zones with different natural salmon seasons: In all rivers that are fed by early snowmelt (especially in the rivers originating in the Sierra Nevada and Cascade ranges), distinct spring and fall runs exist, while in rivers with later snowmelt (originating in the Rocky Mountains, mountain ranges in northern British Columbia and Alaska) the salmon runs begin late, in summer, and continue through late fall. The coastal California Rivers between the Klamath River and the Sacramento River have a marked winter salmon run (from December to February), as the water level only got high enough to sufficiently flood the sandbars in the mouth of the river in

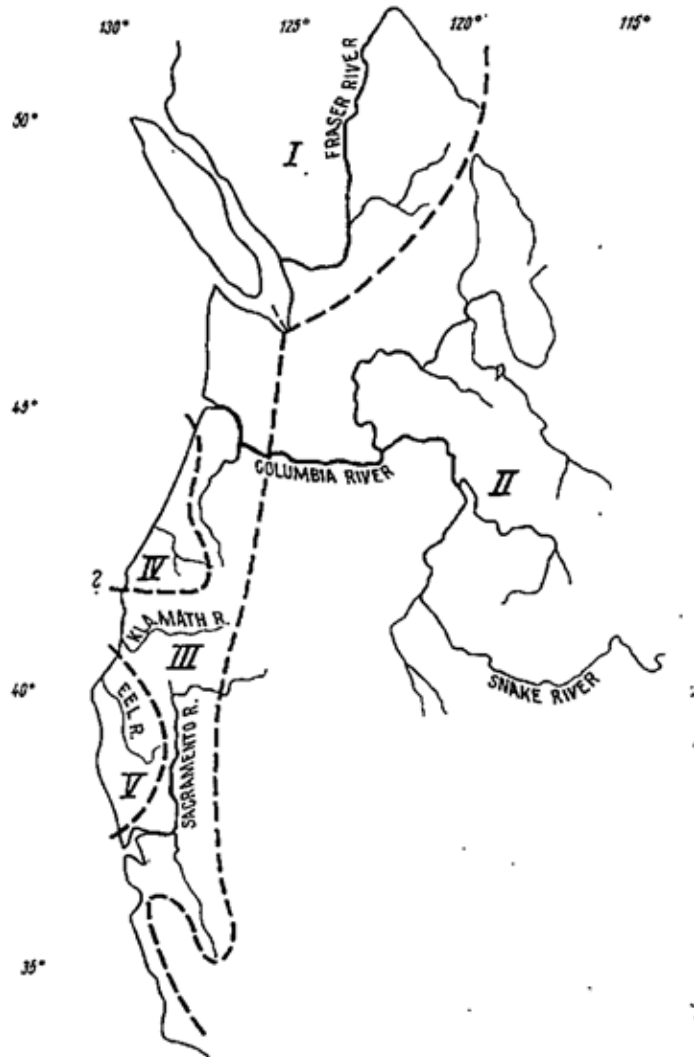
winter, due to the strong winter rains (ROSTLUND, 1952, pp. 18-21; see Map 6).

To round out this picture of the natural salmon season, the migration times of other important food fish should be considered. In addition to the anadromous fish, such as Sturgeon, lamprey, steelhead trout, and candle fish (the latter only in the mouths of rivers), the freshwater fish within rivers also undertake—shorter—migrations to their spawning grounds. It is especially important to point out that a whole series of fish species take up the migration to spawning grounds in late fall, winter, and early

spring—thus, outside of the natural salmon season!—namely, steelhead trout, lamprey, candle fish, and other species of trout. During salmon season the sturgeon migrate upstream in August and September and the so-called “suckers” (*Catostomus sp.*) upstream in May and downstream in August (SPIER, SAPIR, 1930, pp. 174/5; SPIER, 1938, pp. 17, 19).

Regarding f) and h) the strength of the overall run of a certain species of salmon generally varies noticeably from year to year; see Fig. 2. The average weight of the individual salmon of a species can also vary significantly each year; see Fig. 3 a,b. In a series of rivers, cyclical fluctuations in the strength of the run over longer intervals have been observed, especially for pink salmon, and to some degree for sockeye salmon. These annual fluctuations can be explained by the fact that they represent different populations of salmon. With the two-year maturation period for pink salmon, the stronger populations always appeared in the odd years between 1944 and 1956 in the waters of British Columbia, in the even years the weaker; see Fig. 4. For the pink salmon a four-year maturation period is especially characteristic, and the cyclical fluctuations have a four-year rhythm; see Fig. 5. By all appearances, there are no correlations between the cyclical fluctuations in the strengths of the runs

of different species of salmon. A good pink salmon year could correspond with a bad sockeye year in the same river (see the data in Fig. 4, 5, and 6). Due to the different periods of maturation of individual salmon species, potential decreases in salmon populations in a certain year due to outside effects on the sexually mature fish, the deposited fry, or the juvenile fish, have an effect at different times. While pink salmon require two years to develop, sockeye need three, four, or five years, and the same for chum and coho; chinook can have up to seven years between generations (NIKOLSKI, 1957, pp. 158, 165, 169, 170, 171).



Map 6

Regions with different salmon seasons:

I Salmon run from spring to fall

II one salmon season from late spring or summer to fall

III two salmon seasons, one in spring, one in fall

IV one salmon season in spring or fall

V winter salmon runs

From: ROSTLUND, 1952, pp. 18-23

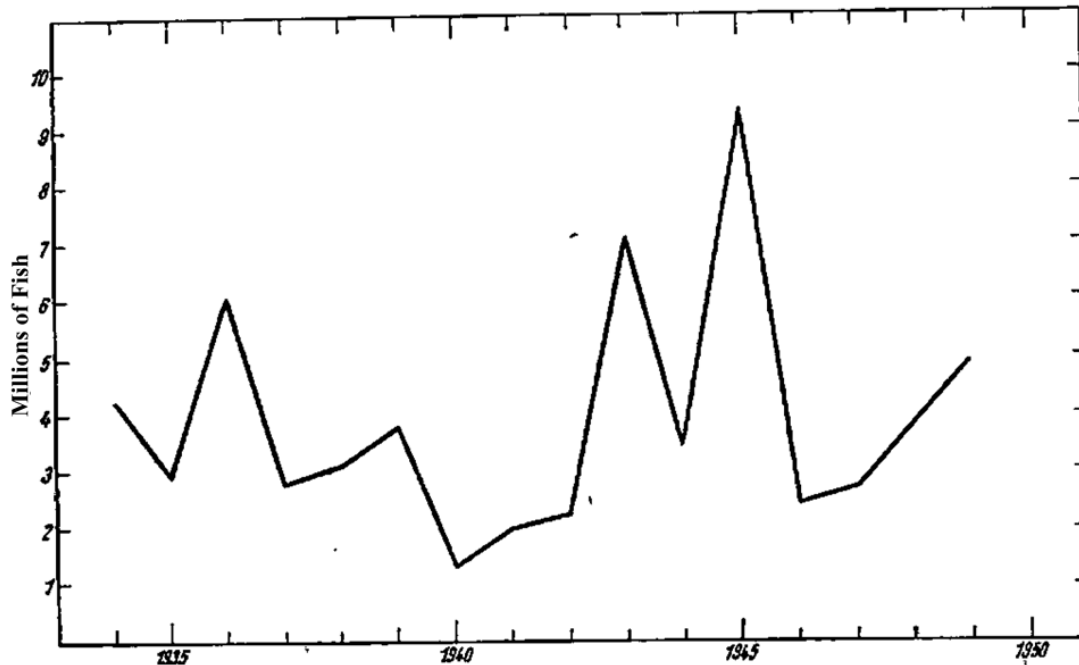


Fig. 2

Magnitude of annual fluctuations in pink salmon runs in central British Columbia

From: NEAVE, 1953, Fig. 2 (p. 462)

More recent investigations have demonstrated that damaging impacts to the fry or juvenile fish, thus, impacts that occur in rivers, are responsible, above all else, for decreases in salmon populations. The impacts mentioned in the literature include, above all, water levels that are too low at spawning grounds and severe flooding (see WICKETT, 1958, Fig. 2 [p.1112]). If the salmon population in a certain river or portion thereof is decimated one year or for multiple years in a row by an unusual spawning event, due to the strong instinct of the salmon to only spawn in their “home” river, long periods of time may pass before this river or stretch of river is regularly visited by salmon again (SCHULTZ, 1948, pp. 183/4; regarding the return of sexually mature fish to the river in which they grew up, also see SUWOROW, 1959, p. 481). However, it is important to remember that in general—with the exception of great disturbances of this kind in individual waterways—the fluctuations in the size of the salmon run of one species of salmon were the same across larger regions; see Fig. 7. The same can be said of the yearly variation in average weight of the individual fish of a species; see Fig. 3b.

It only remains to be mentioned that not only significant annual fluctuations in the size of the salmon runs were observed, but that the fluctuations in the run of a species could also vary greatly from one day to the next. At the Paper Mill Dam in the Somass River (Vancouver I., British Columbia), it was observed in July and August of 1959 that on one day at a given time about 600 salmon passed and five days before and after at the same time not even 50. It became clear that the salmon appeared in closed migrations of about five to eight days, between which there were irregular, but equally long intervals between noteworthy salmon runs. The arrival of the runs was repeatedly recorded on very cloudy days after several clear days (ELLIS, 1962, pp. 143-45). Even throughout the course of a day the salmon do not run in the same numbers. At the above-mentioned observation point it was observed that the individual salmon species had preferred times of day for their movement; what’s more, these times changed throughout the course of the summer and fall (ELLIS, 1962, pp. 144-47).

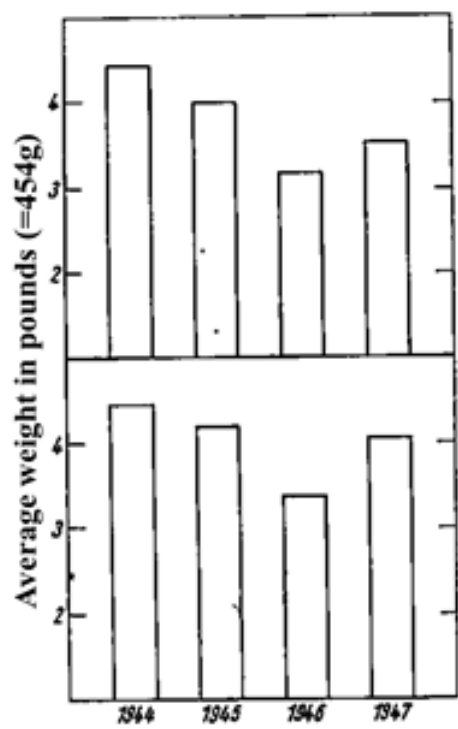


Fig. 3a

Annual fluctuations in average weight of pink salmon (*British Columbia*)

From: HOAR, 1951, Fig. 6 (p.19)

Butedale region (*British Columbia*)

Koeye Inlet (*British Columbia*)

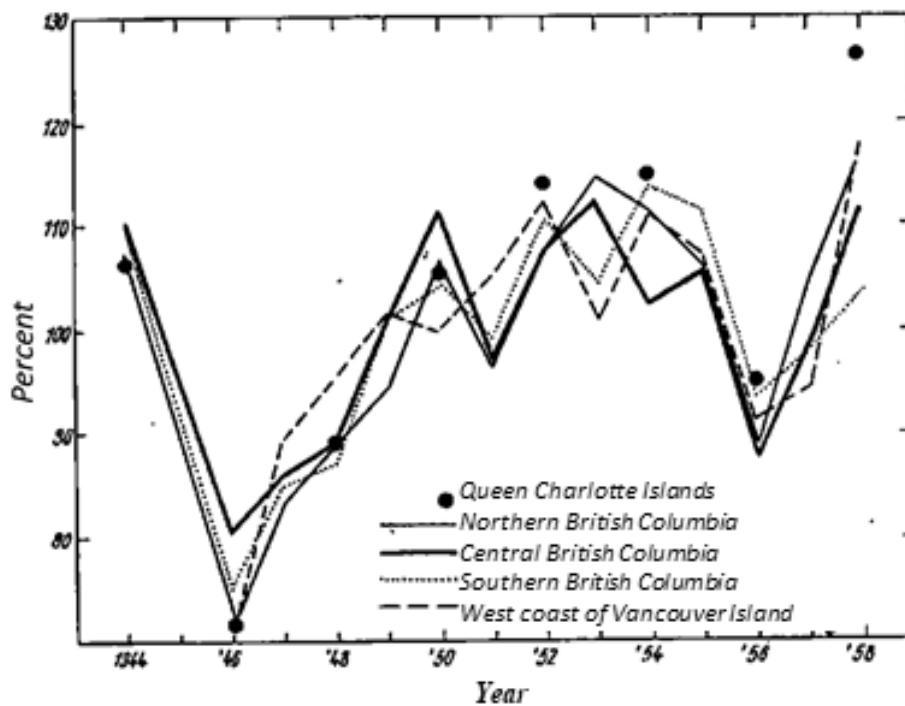


Fig. 3b

Annual fluctuations in average weight of pink salmon. Each value is the average (in percent) of an entire pink salmon population; notice the similar trends in the five large fishing regions of *British Columbia*.

From: GODFREY, 1959, Fig. 4 (p. 335)

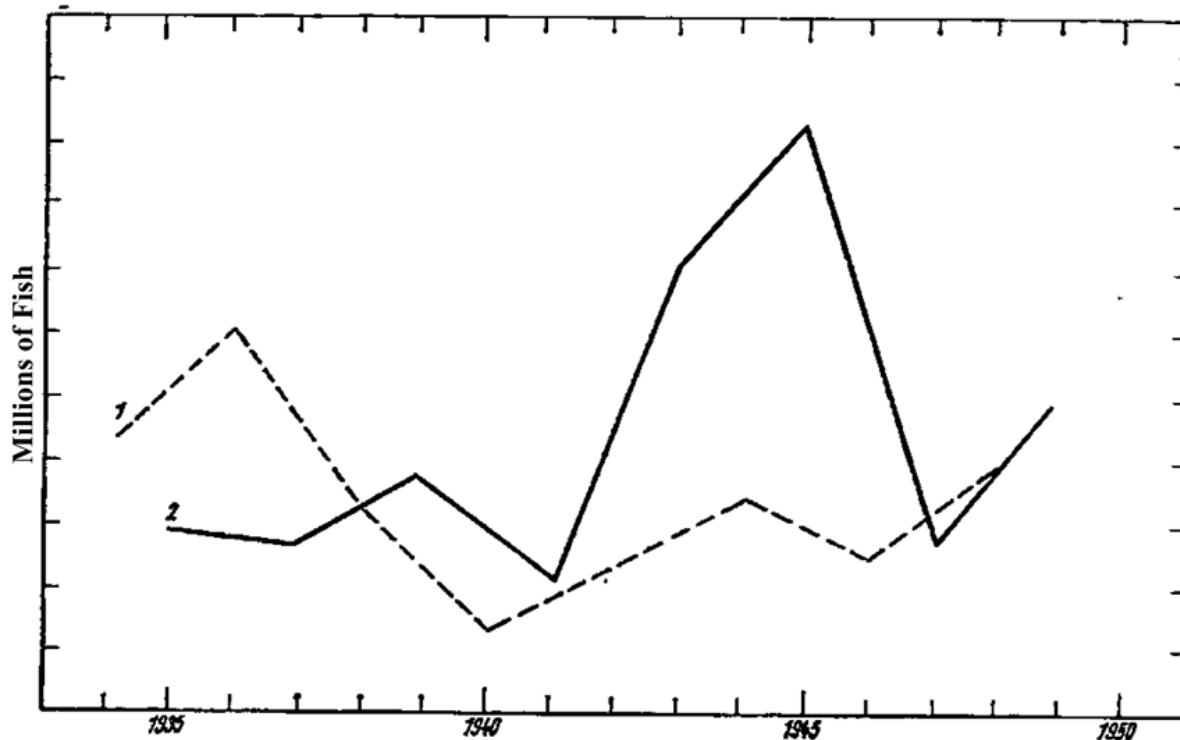


Fig. 4

Varying size of two pink salmon populations in the central region of *British Columbia*

- 1 - - - Population that runs in even years
- 2 ——— Population that runs in odd years

From : NEAVE, 1953, Fig. 3 (p. 463)

The varying strength of the run throughout the course of a day undoubtedly also had an influence on the legal regulation of salmon fishing in some groups. It is known of the Indians of the Puget Sound that they mainly practiced weir fishing at night (HABERLIN, 1924, p. 18; Smith, 1940, pp. 160/1); this is also true of the Klallam (GUNTHER, 1927, p. 200). In this tribe the "owners" (at the best weirs, the village chiefs) used their weirs at night, when the most fish could be caught there. During the day they allowed other Indians to fish at the weir (GUNTHER, 1927, pp. 199-200). It is plausible that the varying availability of fish during the course of a day also affected the use of stations for spear or hand net fishing. On the one hand an Indian could only fish for a limited amount of time at such a station (approximately half an hour for the Sanpoil; RAY, 1932, p. 60), on the other hand there were only a limited number of stations, and use by multiple members of a family or by members of different families seems to have been common among both the Sanpoil and the Wishram (RAY, 1932, p. 60; Curtis, VIII, 1911, p. 95). Despite the fact that, among the Sanpoil, the fishermen were constantly alternating, or, among the Wishram, usage was frequently determined by the Senior of a group of relatives, Wishram Indians could purchase the use of a station (CURTIS, VIII, 1911, p. 95), and, in such cases, the varying value of different periods of time throughout the day might have been taken into account.

Regarding i) According to Craig and Hacker 18 million "pounds" of salmon were caught by the Indians of the Columbia River region "in early days" (ROSTLUND, 1952, p. 51). If one estimates about 60,000 Indians as the population of this region at the time (KROEBER, 1939, pp. 136-142), then each

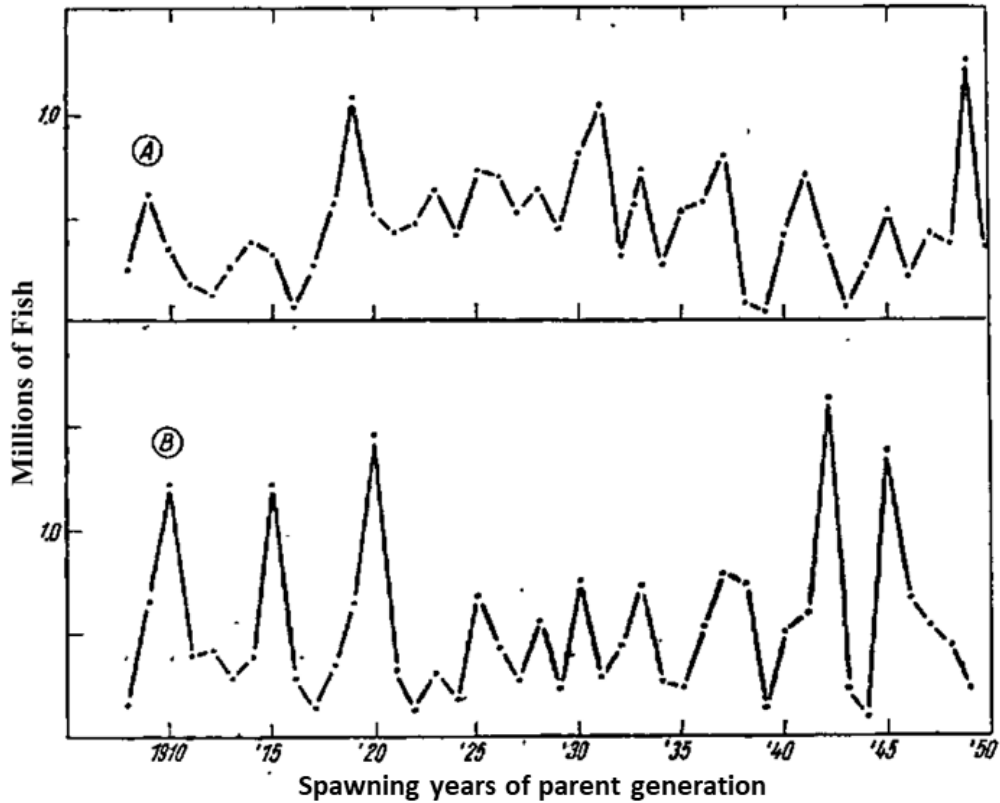


Fig. 5

Representation of the cyclical appearance of pink salmon; distinguishing between the pink salmon populations that return to the rivers after 4 years (A) and after 5 year (B) (Rivers Inlet, British Columbia).

From: GODFREY, 1958a, Fig. 1 (p. 335)

person got an annual average of 300 "pounds" of salmon. Hewes assumes that in "aboriginal times" the Indian population of the Pacific region of North America caught 100 to 130 million "pounds" of salmon annually (ROSTLUND, 1952, p. 51). Assuming a population of about 200,000 people, 500 to 600 "pounds" per person can be estimated.

The two values, 300 and 500-600 "pounds," can serve as upper and lower estimates for the utilization of salmon runs. This provokes a number of thoughts:

It is plausible that of 500 to 600 "pounds" (=225 to 270 kg) about 50 to 100 kg of fresh fish was used, about 180 to 200 kg was preserved. This assumption is supported by the statement by Trinity River about preservation of salmon by a family on the Seabird Reservation, British Columbia, who dried an average of 300 salmon each year. By September, in the year 1945, this family had preserved 54 chinook salmon and 154 sockeye salmon (RIVERA, 1949, p. 25), and, thus, it can be estimated that in the same year another 100 chum or coho salmon would be added to this. This gives the following outline:

50 Chinook salmon	=500kg
150 Sockeye salmon	=450 kg
100 Chum or Coho salmon	= 300kg
	=1250 kg

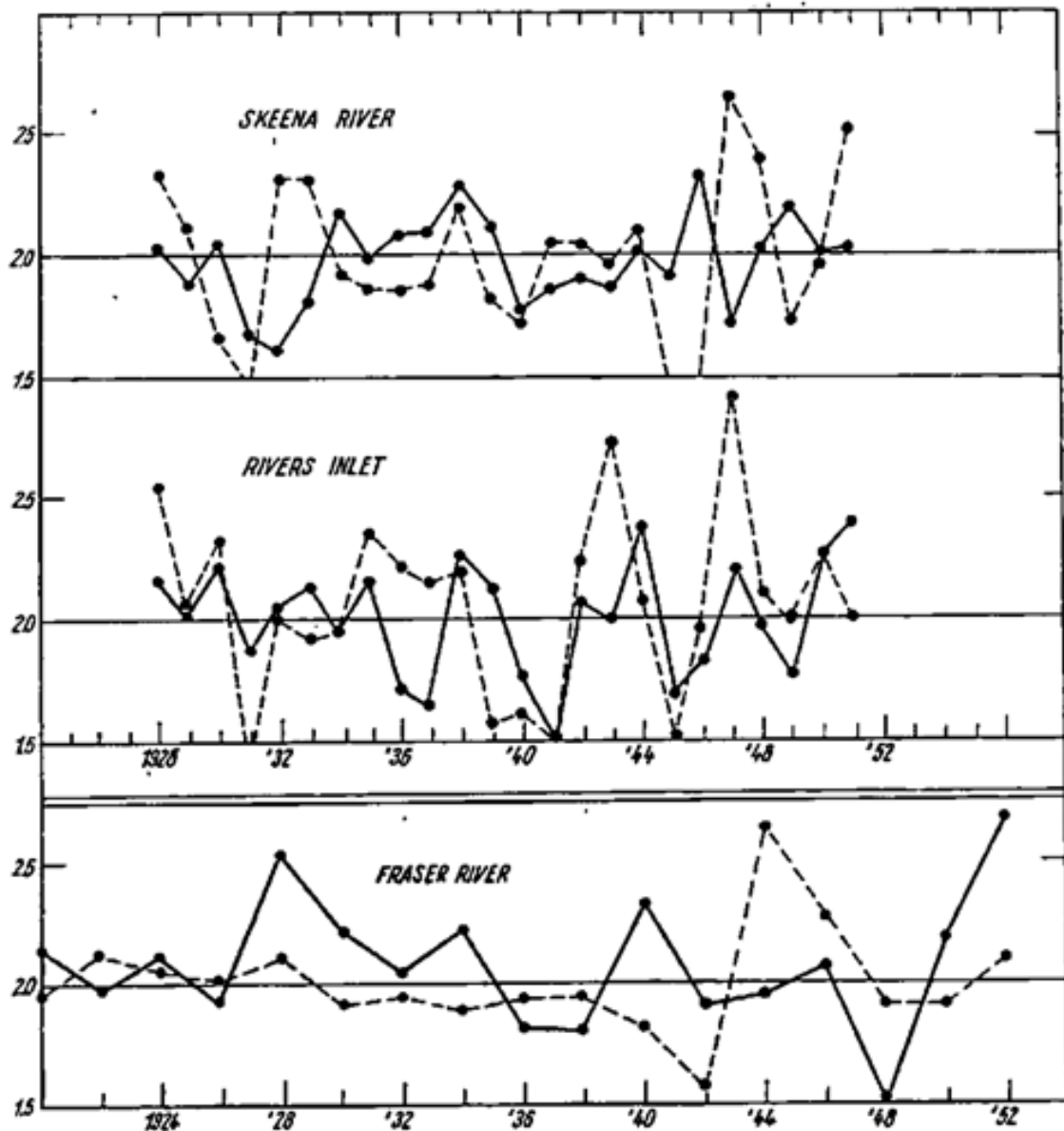


Fig. 6

Logarithmic representation of the size of filial generations of (---) pink salmon and (—) sockeye salmon in comparison with their parent generations

$$\left(\lg \frac{100 F}{P}\right)$$

Although in this diagram, because the first year of their stay in the ocean was included, a certain amount of similarity between the increases and decreases in numbers of pink and sockeye salmon makes it seem likely that conditions in interior waters have a significant influence on the size of the generations, it can be seen that the size of the runs of adult pink and sockeye salmon can vary greatly from one another in the same year; this can also be seen by comparing Fig. 2 and Fig. 5 of the present work.

From: GODFREY, 1958b, Fig. 3 (p. 907)

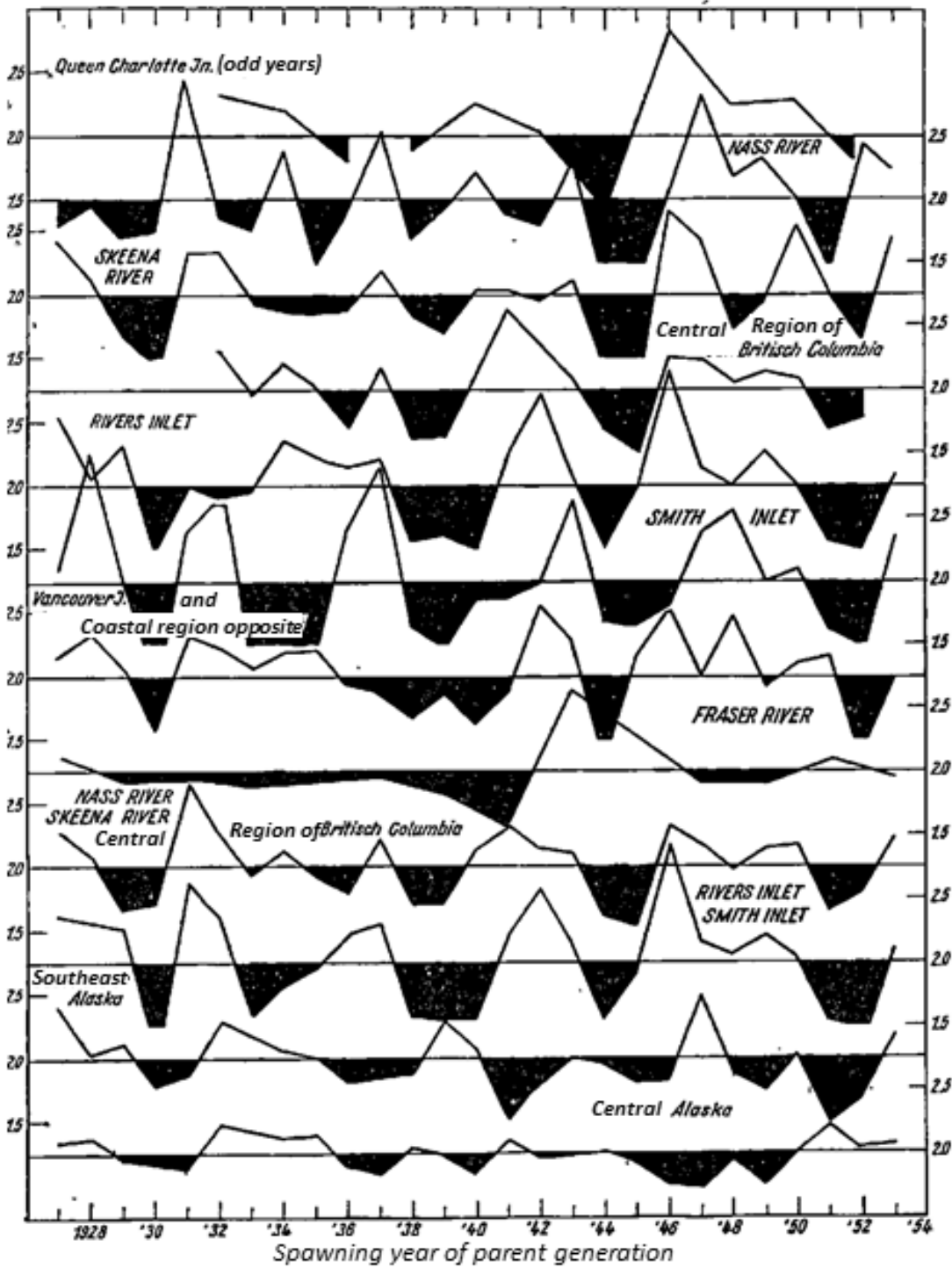


Fig. 7

Logarithmic representation of the size of filial generations of pink salmon in comparison to their parent generations ($\lg \frac{100 F}{P}$)
 The similar increases and decreases in run size are clear, the Fraser River is at exception.

From: GODFREY, 1958b, Fig. 2 (p. 897)

Considering that each family was made up of 6 to 7 people, this results in an average of 180 to 200 kg of salmon to be preserved per person.

The average amount of salmon preserved by this family of the Seabird Reservation may be somewhat above average (RIVERA, 1949, p. 25); according to Kroeber (1925, p. 85) the Yurok considered 100 salmon a winter reserve and the Sinkaietk preserved over 200 salmon per family (SPIER, 1938, p. 12). Assuming 200 salmon, the same outline results in the following:

50 Chinook salmon	=500kg
100 Sockeye salmon	= 300 kg
50 Coho salmon	= 150 kg
<hr/>	
	= 950 kg

Thus, for each Sinkaietk approximately 135-160 kg of fresh salmon was dried; that's more than 300 "pounds." 150 kg of fresh fish makes approximately 35 kg of preserved salmon. Assuming it needed to last for approximately 150 winter (and spring) days, each person would get about 225g of dried salmon each day. With a fat content of 250 g and protein content of 500 g per kg, the winter reserve of preserved salmon alone (see Tab. 2) could supply an Indian with over 1000 calories a day. Considering that the Sinkaietk preserved as much deer meat as they did salmon (SPIER, 1938, p. 12), this number of calories can be raised to 1800. Finally, considering that a family of neighboring Sanpoil stored no less than 400 to 500 kg of Camas tubers (RAY, 1932, pp. 97-99) and almost as much other vegetables, then each Indian also got about 300g of preserved vegetables each day during the winter, and the total amount of calories available per person per day from November to March from winter reserves alone was no less than 2500 calories.

According to this estimate of 2500 calories, the Indian diet among groups of the Columbia River Plateau must have been relatively stable, even in the winter; however, it is known that among both the Sinkaietk and the Sanpoil, especially in early spring, food shortages occurred (SPIER, 1938, pp. 11, 29; Ray, 1932, pp. 107/8). While Riviera also points out that Puget Sound groups spoke of hunger during this time of year (RIVERA, 1949, p. 20), Ray reports that the Sanpoil ate parts of *Rosa californica var. ultramontana* Wats. as an emergency food (RAY, 1932, p. 108; see SPIER, 1938, p. 29). Even the fact that these reserves of dried (and smoked?) salmon meat were so consistently prepared and stored each year, can be seen as an indicator that food shortages could potentially occur; according to Riviera dried (and smoked?) salmon could be kept indefinitely without going bad (RIVERA, 1949, p. 27). The Thompson took their salmon reserves out of holes in the ground in spring to air them out and then put them back underground (TEIT, 1900, pp. 198/9, 234/5). The annual fluctuations in the size of the salmon runs certainly must have been responsible for most food crises. Although it is hard to imagine, theoretically, that an Indian family couldn't catch 300 salmon in a season, or 3-4 fish a day (see Table 3), it must be remembered that at a Sanpoil salmon weir the salmon sometimes had to be cut up during the division of caught salmon among all present (RAY, 1932, p. 70), and that Sinkaietk salmon weirs were sometimes abandoned when no salmon were caught in them (SPIER, 1938, p. 160). In addition to these unpredictable fluctuations, cyclical variations in the size of the salmon runs (in the Thompson River there was only a good run of sockeye salmon, the most important salmon species there, every four years; TEIT, 1900, pp. 231, 259) may have also made these reserves necessary, but probably did not lead to significantly more noticeable food shortages.

Without finding any other decisive factors that may have contributed to food shortages, some facts regarding the variation in nutritional content of salmon should be considered: During the course of

Table 2

Approximate calorie content of 450 g of meat of some important edible fish

1000	800	700-600	500-400	350
Salmon	Lamprey	Vendace	Sturgeon	Pike
Eel	Arctic char	Herring	Perch	
Catfish		Halibut		
		Mackerel		

From : **ROSTLUND, 1952, p. 4**

preservation—at least during drying over a fire in the moist coastal climate—the salmon lost fat. What's more, near the coast, salmon that were relatively low in fat, such as chum (RIVERA, 1949, p. 32; CURTIS, IX, 1913, p. 50; chum salmon, when dried, contain only 20-40 percent of the fat that Chinook salmon do; RIVERA, 1949, p. 32) and others that had endured relatively long migrations (BOAS, 1921, p. 305) were preserved, due to their superior storage life.

The calculations above were made assuming that one kg of salmon reserves contains about 250 g of fat. However, in principle, this only applies to reserves made from salmon that were caught at the beginning of their migration. At this time 1000g of sockeye salmon meat contains about 100 g of fat. Upon arrival at the spawning grounds about 1100 km upstream, 1000g of the same meat only contains about 30g of fat and its calorie content has fallen to only a little more than half the original amount (IDLER, BITNERS, 1959, Table III [p. 238]). Salmon reserves prepared from these fish, therefore, may not contain 250 g of fat, but only about 80 g of fat, and, thus, only 3200 calories. The fat content of dried chum salmon probably isn't any higher than 80 g per kg of preserves (RIVERA, 1949, p. 32).

APPENDIX III

The utilization of the natural supply of salmon by native Indian fishing economies, its possibilities and limits

From the conclusions drawn in Appendix II we can see that the natural supply of salmon varied in time, location, and size. Not every river contains salmon, the salmon are not in the rivers all year round, and the size of the runs varies from year to year.

The utilization of this natural supply by the Indian population was limited by two main factors: Fishing for salmon was not possible or equally productive on every stretch of river at all times;

Other important forms of food acquisition could stand in the way, temporally, of utilizing the entire salmon run.

More specifically the following statements can be made:

a) Indian salmon fishing along the course of a river was limited to naturally suitable fishing spots. Even for the use of widely distributed and relatively crude fishing devices (spears and simple hand nets) there were spots on or in the river that provided for especially easy manipulation of these devices and high yields. More complex fishing apparatuses (such as large basket traps or A-frame plunging nets) were especially closely tied to certain river environments and certain fishing spots, as these environments themselves affected their development or even gave rise to them in the first place. There was no fishing device that could be used in all environments.

b) Because the natural conditions for salmon fishing often change over short distances, especially between the main river and tributaries, many communities employed a large number of different salmon fishing devices; they had places for spear, hand net, trap, and weir fishing. However, these apparatuses were often not used simultaneously. The seasonally, especially with the changing water levels, changing requirements for the use of the different devices, made it so a community's individual fishing spots became centers of salmon fishing operations at different points throughout the course of the year.

c) It is hard to make a general statement about the productivity of salmon fishing devices and methods. At well-suited places the yields of spearfishing usually were not any less than those of weir fishing. While spear fishing required more agility, whereas weir construction required workers with more experience, the overall amount of work required for each method may have been about the same. Furthermore, at especially well-suited spots and at especially favorable times (at the peak of the salmon run) sufficient salmon could be caught to meet one's own needs and more with only a minimal amount of labor, experience, and agility.

d) Despite the fact that a diversity of salmon-fishing devices existed, for large portions of western North America one or two main fishing devices can be identified. These apparatuses were used during the peak salmon season.

e) The period of superior salmon fishing did not last for the whole natural salmon season in all rivers of the North American West. This statement applies, above all, to the rivers in which salmon ran for many months. Here there could be an early, peak, and late salmon-fishing season, whereby the peak salmon fishing season might correspond with the main salmon run. During the early and late season, only a portion of the community would dedicate themselves to salmon fishing, while the majority of people were busy with the procurement of other— also seasonal—forms of food.

Table 3
Productivity of the most important fishing devices (examples providing a rough estimate)

Device	Size of catch reported in the literature	(Estimated) average daily yield	Daily yield (in SU*)	Duration of fishing season with this device/ portion of entire (salmon) fishing season	Number of people the catch was shared by	SU/person/year with this device (average 1.5-2 SU needed per person/year)	Source
(large) weir	tributary	300 salmon per night	6 SU	30 (→60) days=180-360 SU	40-100	2→9 SU	RAY, 1932, p. 71 (Sarpoil, Nespelem)
				<i>illegible! J.K.</i>			
large basket trap	waterfall	up to 300 salmon per emptying	5-40 SU	30 (→60) days=150-2400 SU	300-1000	0.15→8 SU	see pp. 29-32, 36 of present work (Kettle Falls; Colville)
				<i>illegible! J.K.</i>			
trap (in smaller weir)	headwater stream	20-30 salmon per emptying (estimated)	1 SU	about 30 days=80 SU	60-90	0.3→0.5 SU	TURNEY-HIGH, 1937, p. 126 (Flathead)
				entire salmon season; caught a lot of trout in addition to this			
drag net	wide river	40-100 salmon per night	1-2 SU	about 30 days=30-60 SU	6-15	2→10 SU	RAY, 1932, p. 69 (Sarpoil, Nespelem)
				<i>illegible! J.K.</i>			
A-frame lifting net (from platforms)	main river	100 salmon per night	2 SU	30 (→60) days=60-120 SU	4-10	6→30 SU	KROEBER, 1925, p. 85 (Yurok)
				<i>illegible! J.K.</i>			
simple dip net (plunging net)	waterfall	20 salmon per hour	1-2 SU	30 (→60) days=30-120 SU	4-6	5→30 SU	WILKES, 1845, p. 345 (Williamette Falls)
				?			
spear (under especially good conditions)	waterfall	200 salmon per day	4 SU	30 (→60) days=120-240 SU	4-6	20→60 SU	KANE, 1859, p. 313 (Kettle Falls; Colville)
				<i>illegible! J.K.</i>			
spear (from canoe, with torch)	narrow river (?)	30-50 salmon per night (estimated)	1 SU	about 30 days=30 SU	4-6	5→7 SU	TURNEY-HIGH, 1941, p. 50 (Kuternai)
				potentially the entire salmon season; caught a lot of trout in addition to this			

*SU=Supply Unit: 150 kg of salmon, which was the average amount needed for an adult person...*illegible, J.K.*

f) Individual and collective construction and use of salmon fishing devices can be distinguished from one another. Even for individual salmon fishing there were concentration points at which a hundred or more Indians fished within a small area.

With regard to a) As the following example from the Shasta of northwest California demonstrates, a salmon fishing spot might have a traditional name and it could be used to speak to it to guarantee a good catch:

“At intervals along the sides of a rapids at Hamburg, rocks were piled about small cleared spaces, forming little pools, and fish running up the rapids paused in these quiet places to rest. Each resting place was named, the names having come down over a long period of time. The owner before starting to fish sprinkled tobacco and a certain herb in each resting place, talking to it meanwhile. There seemed to be no set formula, but he called the place by name and said, ‘this is for you and I want so many salmon’; etc. He took the fish with a dip-net, . . .” (HOLT, 1946, p. 310)

Natural conditions of the river (“ . . . along the sides of a rapids . . .”), man-made alterations (“ . . . rocks were piled about small cleared spaces. . .”), the behavior of the fish (“ . . . fish running up the rapids paused in these quiet places to rest . . .”), the fishing devices that were adapted to both the behavior of the fish and the natural conditions of the river and corresponded to the availability of productive forces (“He took the fish with a dip-net . . .”), and the social structure, especially with regard to legal status, of a community, interacted to shape the overall appearance of a fishing spot.

Overall, the Indian population of western North America did not make many alterations to the natural course of the river or its shores in order to catch salmon, however, there are a series of important exceptions: the Karok erected stair-like stone structures next to waterfalls (so-called “fishing ladders”), by means of which the salmon running upstream could avoid the falls but could not escape the hand nets of the Indians positioned there (KROEBER, BARRETT, 1960, p. 44). When the salmon could not swim inland over the sandbars in the lower reaches of the Mattole and Bear Rivers (California) in July and August before the September rains, the Indians dug narrow channels through the sandbars (KROEBER, BARRETT, 1960, pp. 39/40). The Sanpoil and Nespelem along the middle reaches of the Columbia River lowered the level of the riverbed directly around spear fishing spots by digging channels and lining them with light-colored rocks to provide visual contrast for the spear fishers (RAY, 1932, pp. 58/9). Finally, in a strict sense, every man-made barrier in a river (stone or wooden dam) was an alteration of the river environment, as they were temporarily obstacles—comparable with waterfalls—for the salmon run.

Unfortunately, the ethnographic literature about salmon fishing groups in western North America largely neglects to discuss the relationship between the changing behavior of the fish throughout their run and at the spawning grounds and the corresponding use of different types of fishing devices. Vilkkuna very clearly demonstrated such relationships for the Atlantic salmon fishing in Finnish waters (VILKUNA, 1956, pp. 88/9).

For the region discussed in the present work, it is likely that the indigenous salmon fishing methods were geared towards migrating salmon (weirs, hand nets), while devices typical for catching salmon at their spawning grounds, such as the gillnet, apparently played a much smaller role (ROSTLUND, 1952, pp. 164-66). Without a doubt, the relationship between the natural environment and the level of development of productive forces was the determining factor for the character of native Indian fishing. Typical of this was a widespread adaptation of fishing devices to natural conditions; the use of different devices and, in addition, a variable use of these devices, corresponded to the varying conditions from one stretch of river to another and from season to season (see Tab. 4). The abstinence from spear

fishing of the Yuki during high water flow was an exception to this (GIFFORD, 1939, pp. 329/30); still, Rostlund points out that Indian groups had not all discovered all possible ways to fish for salmon or at least did not use them; he refers to the absence of drag nets in the fishery of many Indian tribes (ROSTLUND, 1952, p. 86). It can be wondered, whether there was an incentive or motivation for the Indian population before the arrival of the whites to continuously advance the development of their devices and methods for salmon fishing, to create or adopt new ones. Unfortunately, this question cannot be answered: even if in a bad salmon year the use of drag nets could raise the overall yield by catching the salmon running in the middle of the river, there were other ways to increase the overall catch. One could fish another species more intensively (see p. 88 of the present work), travel to the territory of neighboring groups to procure food (see pp. 16, 30, 89 of the present work), or rely on trade or reserves that could last for multiple years (see p. 144 of the present work). A significant incentive to fish for salmon beyond guaranteeing one's own means of subsistence only existed in places where trade of dried salmon played an important role. However, such trade, by all appearances, was practiced by groups whose territories had an especially good natural supply (see pp. 89/90 of the present work). It would be a mistake to attribute the years of especially severe food shortages mentioned for some groups in the ethnographic literature and the generally poor food conditions of early spring (see p. 144 of the present work) solely to an insufficient capacity to catch salmon. An unpredicted shortage of other forms of food or an especially long winter could have been to blame. The reserves of salmon did not depend only on the catch, but also on the ability to preserve what was caught, the availability of labor, and suitable weather conditions for drying the salmon and keeping it from going bad (see pp. 20, 144/5, 153/4 of the present work). The example mentioned above, of the non-use of drag nets by a series of Indian groups, prompts another comment. When the Sanpoil acquired the drag net from the lower reaches of the Columbia River late, first in the second half of the 18th century, they only used it at night; during the day the salmon in the clear water of the middle reaches of the Columbia River could avoid the net (RAY, 1932, p. 69). Thus, the use of drag nets was also tied to a particular combination of river conditions: a level riverbed with murky and calm water, mainly on the lower reaches of large rivers.

With regard to b) Especially on larger waterways with water levels that varied widely from season to season (Fraser River, Columbia River, Klamath River, Sacramento River) the ability to use fishing devices did not only depend on the conditions of the riverbank or bed, but also to a large degree on the corresponding current (observations regarding this point in OGDEN, 1950, p. 204). The Indian communities probably had multiple fishing spots that were important at different times of the year, as the example of the Wishram of the lower reaches of the Columbia River demonstrates:

"It is probably that each group of this sort (a loose alliance of multiple families, D.T.) had a station for spearing fish and another where they netted. At least there were stations appropriate to each of these methods and they were not used at the same time. Fish were speared in the fall; caught with the dip-net in summer. McGuff stated that one could not use the spearing station for dip-netting nor the netting station for spearing for any success.

It is doubtful that this has any esoteric significance; rather that the stations were chosen with respect to the stages at which the river flood stood, varying from one season to another" (SPIER, SAPIR, 1930, p. 175).

Even the preparations for salmon fishing were marked by an awareness of the fluctuating current in the rivers. At the time of low water, prerequisites for a successful use of certain fishing devices during highwater had to be prepared. An especially impressive example of this is the Sanpoil method of

Table 5
 Salmon fishing in the annual Sanpoil cycle of food acquisition (from RAY, 1932)

Month	Water level	Runs of individual salmon species	Period of use of each fishing device	Inten- sity of fishing	Other sources of food	Division of labor by sex	Individual (x) and collective (xxx) operations	Nature of temporary alliances
January								
February								
March								
April					Hunting of small game at root grounds south of Columbia River (April)	♀	×	Loose alliances of a few families for the root harvest
May	High water flow	Chinook salmon → (sockeye salmon) → Pink salmon → → Chum salmon → → Coho salmon → → sturgeon	→ large weir → → dip net → → spear → → trap → → small weir → → drag net → → spears from canoes →	→ early season → → main season → → late season → (steelhead trout included)	Hunting of small game at root grounds south of Columbia River (April)	♂ ♀ Women's work equally important for preservation of fish	×	Fishing camps; families from near and far; leadership of collective operations by Salmon Chiefs
June							↑ ↑ ↑	
July					Day trips to harvest berries (near Columbia River in July; in mount- ains in Sept.)		↑ ↑ ↑	
August					Antelope hunts south of Columbia River (April)		×	
September						♀	×	
October					Deer hunts in forested regions north of the Columbia River; often collective		×	
November						♂	↑ ↑ ↑	Hunting expeditions consisting of men of several families led by experienced hunters; for trips longer than a day some women joined
December							↑ ↑ ↑	

Okanogan River, at Malott (Washington)

Day	Okt.	Nov.	Dez.	Jan.	Feb.	März	April	Mat	Juni	Juli	Aug.	Sept.
1							1750	8460	11500	2780	1110	652
2							1800	8560	10600	2690	1070	670
3							1900	8900	10500	2570	1020	682
4							1970	4380	9200	2430	1000	700
5							1940	4850	8000	2410	942	700
6							1920	5120	8300	2340	921	712
7							1910	5440	8000	2330	928	718
8							1890	6110	8100	2350	900	724
9							1890	7400	8200	2240	844	688
10							1880	9500	7300	2350	823	694
11							1890	9800	6700	2370	802	688
12							1900	9700	6600	2290	809	700
13							1920	9200	5780	2180	802	706
14							1970	8500	5480	2010	795	742
15							2040	8200	5240	1890	781	781
16							2260	8700	5120	1800	760	774
17							2440	9400	4790	1720	754	774
18							2540	10800	4580	1630	764	795
19							2520	11200	4280	1570	736	816
20							2560	12500	4110	1510	712	858
21							2560	13500	3930	1470	676	886
22							2560	14400	3640	1410	664	963
23							2650	15500	3400	1320	652	1190
24							2680	16300	3230	1250	640	1200
25							2690	16600	3060	1210	635	1150
26							2790	16800	2930	1100	630	1150
27							3100	16400	2910	1080	620	1160
28							3370	16000	2860	1050	652	1140
29							3470	15600	2980	1090	670	1190
30							3440	14800	2970	1080	676	1200
31								13000		1080	670	

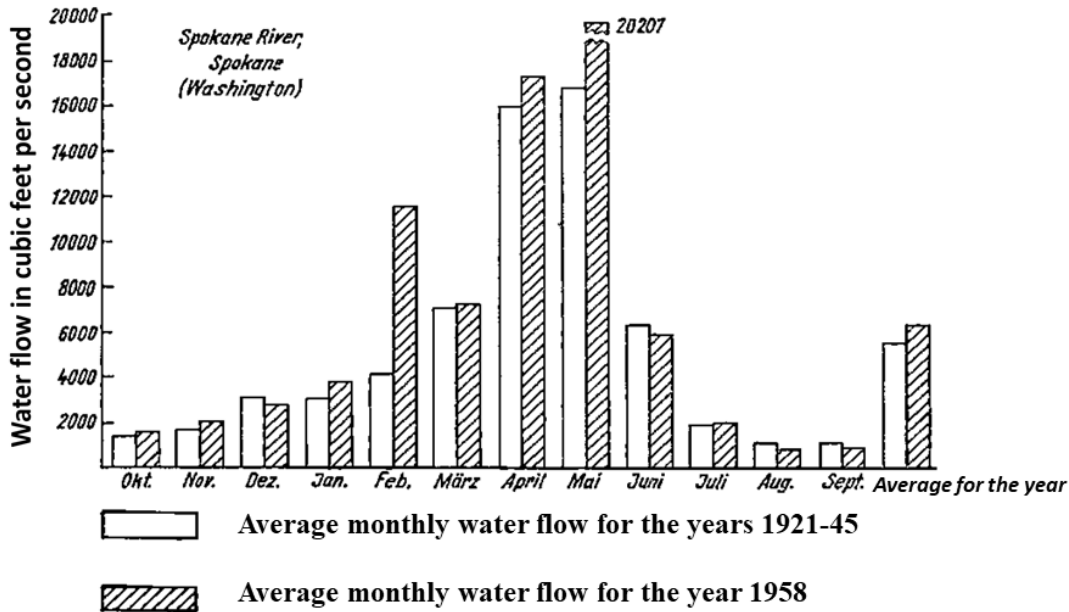


Fig. 8

Water flow in two rivers of the North American West (Columbia River Plateau with the highest water levels in the months of April and May).

FROM: SURFACE WATER SUPPLY OF THE UNITED STATES 1958
 Part 12, p. 297 (Okanogan River at Malott)
 SURFACE WATER SUPPLY OF THE UNITED STATES 1958
 Part 12, Fig. 2 (p. 12) (Spokane River, at Spokane)

steering fish into artificially made channels to spear them. Immediately after setting up their “summer camps” on the Columbia River the preparation of these channels began:

“During the early part of May the river is very low; it is highest toward the latter part of June. Since the spearing season lasted throughout this period it was necessary to have new channels available for use at successive stages in the rise of the river. Usually three were constructed. In excavating the first it was necessary to work underwater since it was for immediate use....The sites for the second and third channels, to be used later in the season, were selected and the excavations were made while the river was still low, thus eliminating the necessity of working below the surface of the water” (RAY 1932, pp. 58/9).

Platforms for spear and hand net fishing were also erected during low water levels (SPIER and SAPIR, 1930, pp. 175/6).

Regarding c) The question of the productivity of individual salmon fishing methods was already raised during the discussion of the relationships between the natural environment and productive forces. There it was stated that the use of each salmon fishing device was restricted to certain locations and times. The few concrete details about the productivity of different devices during use (see Tab. 3) cannot be compared with one another, as the productivity of a device could fluctuate from year to year, season to season, and fishing spot to fishing spot. Regarding the productivity of the Yurok “fishing places” (kwORL):

“Such places were owned by individuals. They could be sold, bartered, and bequeathed like any other property, and they changed hands quite freely. Their value depended on the number of fish they supplied, and they were appraisable very exactly in Indian money” (WATERMAN, 1920, p. 219).

Regarding d) and e)

1. The tribes of territories with a natural salmon season that did not have any big breaks included the Sinkaietk and Sanpoil along the middle reaches of the Columbia River. Because in their area all salmon species and the steelhead trout ran (except sockeye salmon in Sanpoil territory?), a natural salmon season stretched for many months; it lasted from March to November (see Tab. 5). In spring, however, the root harvest overshadowed fishing for steelhead trout. In April, men and women traveled to the *Camassia* and *Lewisia* grounds south of the Columbia River, while only some of the population focused on fishing (RAY, 1932, pp. 27, 77, 99; SPIER, 198, p. 11). Peak fishing season did not begin until the arrival of the salmon, especially chinook salmon, in May (RAY, 1932, pp. 58, 97-99). The main season may have had a peak in late summer, during low water levels and weir-fishing season (Fig. 8). During the main season there was always the problem of coordinating the vegetable harvest (roots and berries) and the preservation of the salmon. The women were responsible for both of these tasks. The Sanpoil solved this problem in the following way:

“Throughout the summer fishing season women made short one day trips along the banks of the river and nearby streams for the purpose of gathering berries. Such trips were made at times when salmon drying or other tasks were not pressing. Sometimes women relieved each other of the duties at camp for a few days to provide opportunities for berry picking. Women unencumbered by household duties often made longer journeys lasting a week or ten days” (RAY, 1932, p.101).

These one-day expeditions are clearly different from the big root expeditions lasting for thirty and forty days that were undertaken during the early salmon season in spring (RAY, 1932, pp. 97/8). Bigger trips to higher elevations for berries were first undertaken after the end of the main salmon fishing season and before the beginning of the late season in fall; during the same time period the men hunted antelope (RAY, 1932, pp. 101, 77). After the gatherings of people at the large summer salmon fishing

spots had dissipated around the first of September (RAY, 1932, p. 28), a portion of the population focused on the communal fall hunts (RAY, 1932, p. 28; SPIER, 1938, pp. 11/2), the others dedicated themselves to fall fishing. Fall salmon fishing was not a collective effort, as, due to the low water levels, spear fishing from canoes and drag net fishing predominated.

Although all species of salmon run in the Fraser River system and there is a long and, for the most part, uninterrupted natural salmon season, it should not be forgotten that the main salmon fishing season here began somewhat later (no earlier than August?). The relatively greater importance of sockeye salmon for fishing by these Indian tribes in comparison to the Columbia River Plateau was probably the reason for the delay of the beginning of the main fishing season (TEIT, 1900, pp. 238/9; TEIT, 1906, pp. 224, 297; TEIT, 1909, p. 518; HILL-TOUT, 1905, p. 140).

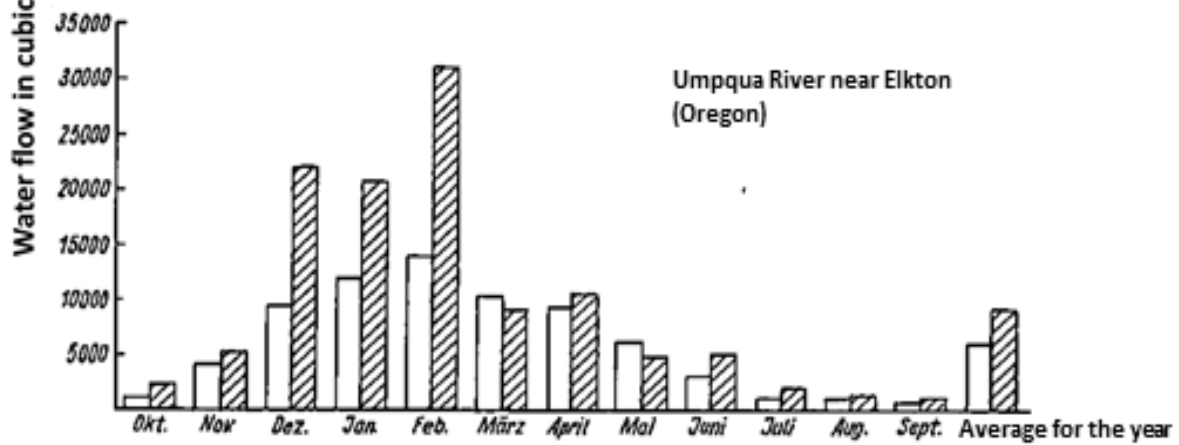
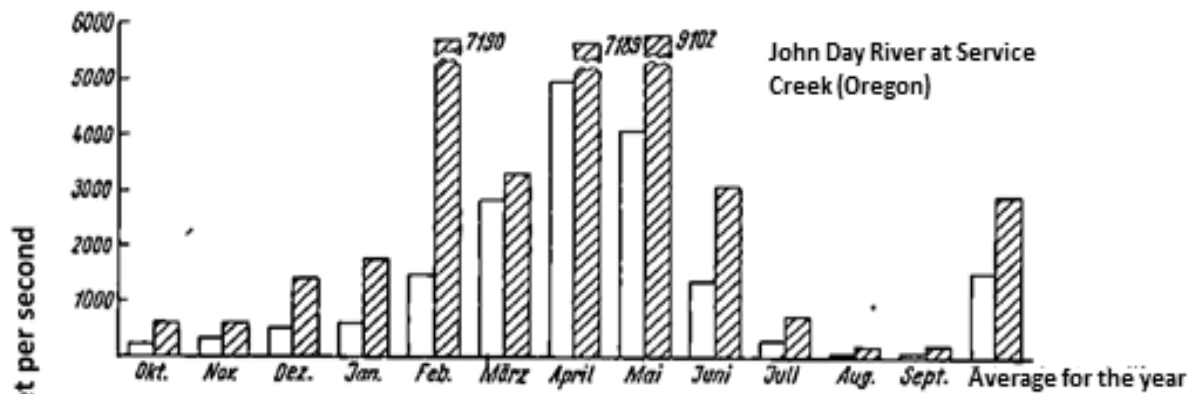
2. The region with two distinct main salmon runs in spring and fall includes, most importantly, several coastal rivers in Oregon, the Klamath River and its tributaries, and the Sacramento River system. The use of certain fishing devices was also, at least along the larger rivers, dependent on the given water levels in this region. In December, following the California winter rains, the Sacramento River flooded; in the Klamath River and its tributaries high water levels were recorded in February and March.

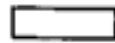

The main season for hand-net fishing from platforms, which was highly developed among the tribes on the lower and middle reaches of the Klamath River (see pp. 55, 64 of the present work), began in spring. Weir fishing in larger rivers was set for late summer and early fall, as the erection of such extensive weir systems was only possible when water levels were low (see pp. 57, 64 of the present work). The season of individual fishing was also in spring, the season of collective salmon fishing operations in late summer and the beginning of fall.

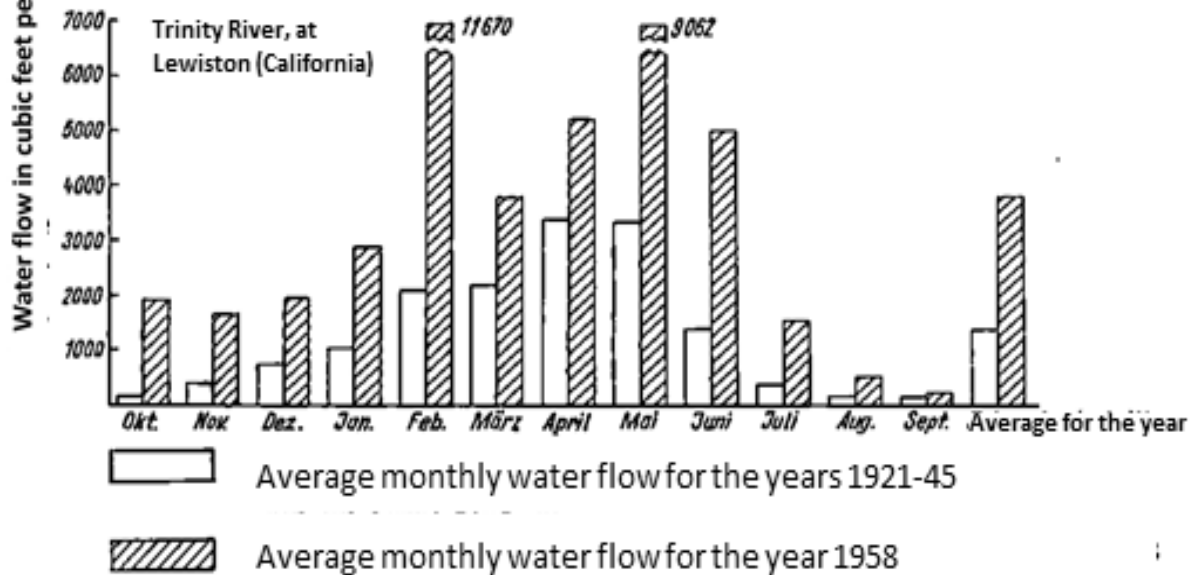
The weir fishing season in late fall did not overlap with acorn harvesting season (KROEBER, 1925, p. 75; see also KROEBER, GIFFORD, 1949, p.131). Besides salmon, acorns were the most important Indian food in the region with spring and fall salmon runs. Their harvest season was in September, October, and November, with particular emphasis on October (KROEBER, 1925, pp. 75, 438; FOSTER, 1944, p. 165; HOLT, 1946, p. 312; KROEBER, GIFFORD, 1949, p. 56; SCHENCK, GIFFORD, 1952, p. 382; GARTH, 1953, p. 196). The acorn harvesting expeditions did not usually require traveling as far away from the winter villages as the piñon expeditions, but the men generally accompanied the women and, at least in September and October, used various methods to fetch the acorns, which had not yet fallen, from up in the trees. The acorns could not be gathered from the ground until November. The men's help was also, and not least, utilized for transporting the acorns to the winter camps (KNIEFEN, 1939, pp. 378/9, 388; GIFFORD, 1939, pp. 366, 377/8; Foster, 1944, p. 165; HOLT, 1946, p. 312; GOLDSCHMIDT, 1951, pp. 408, 410; SCHENCK, GIFFORD, 1952, p. 329; GARTH, 1953, p. 137). Under these conditions, the fall salmon runs were probably not utilized the largest extent possible. Weir fishing on the Klamath and Sacramento Rivers also overlapped with berry season, but not with the harvest of grass seeds, which mostly became ripe in June and July (GIFFORD, 1939, pp. 329/30; KNIEFEN, 1939, pp. 366, 377/8).

3) The coastal rivers of California between the Klamath and Sacramento Rivers had one of the more unusual natural salmon seasons. Here the salmon (mostly chinook and coho) run upstream over the sandbars in the mouth of the river with the swelling of the rivers during the California winter rains (see Fig. 9); the salmon are mostly in the interior waters from October to April (ROSTLUND, 1952, p. 20; KNIEFEN, 1939, pp. 376, 386; GIFFORD, 1939, pp. 321, 329/30; KROEBER, BARRETT, 1960, p. 39).

However, this natural salmon season was shortened by the fact that during the highest water levels in January and February salmon fishing was very difficult for the Indians (GIFFORD, 1939, pp. 329/30). In



 Average monthly water flow for the years 1921-45
 Average monthly water flow for the year 1958





 Average monthly water flow for the years 1921-45
 Average monthly water flow for the year 1958

Fig. 9

winter, weir fishing could probably only be practiced along the upper reaches of rivers (KNIFFEN, 1939, p. 376; GIFFORD, 1939, p.325).

It is hardly necessary to point out how important the winter salmon runs must have been for the Pomo and coast Yuki's diet: they were a relatively rich supply of food during a time when nature otherwise does not have much to offer. It is known of the coastal Yuki that they ate some of the salmon caught in winter right away, in February and March their food situation was not very good (GIFFORD, 1939, p. 330). However, there is no doubt that they also preserved winter salmon, probably mostly "smoked" them over the fire (GIFFORD, 1939, p. 325). The extent of preservation was not only limited by the winter weather but also by the fact that the coastal Yuki and coastal Pomo moved inland along the Eel River (on the South Fork) and the Russian River and these "trips" were probably mostly undertaken by men (GIFFORD, 1939, p. 321; KNIFFEN, 1939, p. 386).

Regarding f) see Table 4 (p. 150) and pp. 45/6, 91-93 of the present work.

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AMNH-M	American Museum of Natural History, Memoirs, New York
BAE-B	Bureau of American Ethnology, Smithsonian Institution, Bulletins. Washington
JFRBC	<i>Journal of the Fisheries Research Board of Canada</i> , Ottawa
MAAA	Memoirs of the American Anthropological Association. Lancaster, Menasha
UC-AR	University of California Publications, Anthropological Records. Berkeley and Los Angeles
UC-PAAE	University of California Publications in American Archaeology and Ethnology, Berkeley and Los Angeles
UW-PA	University of Washington Publications in Anthropology, Seattle

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DESCRIPTIONS AND SOURCES OF IMAGES

Plate I

Image 1. Hupa fishing weir (California)

From: KROEBER, BARRETT, 1960, Plate 1, c; p. 177

Image 2. Partial view of a Chilula fishing weir (California)

From: KROEBER, BARRETT, 1960, Plate 1, d; p. 177

Plate II

Image 1. Fishing from platforms with A-frame lifting nets, Yurok (California)

From: KROEBER, BARRETT, 1960, Plate 2, d; p. 178

Image 2: Yurok A-frame lifting net (California); measurements: length 540 cm, height 105 cm, width at the bottom 210 cm; the strings stretched between points A-G of the image and the strings running between the corresponding points on the right side signal the entrance of fish via a cord and close the net when the cord is pulled.

From: KROEBER, BARRETT, 1960, Figure 13a; p. 35

Plate III

Image 1. Fishing from platforms at a rapid with dip nets (plunging nets), Karok (California)

From: KROEBER, BARRETT, 1960, Plate 27; p. 203

Image 2. Wintu dip net (plunging net) (California); measurements: A-B 320 cm, A-C, 81 cm, D-E 68 cm, F-G 106 cm, F-H 63 cm, I-J 28cm.

From: KROEBER, BARRETT, 1960, Figure 16; p. 42

IMAGES

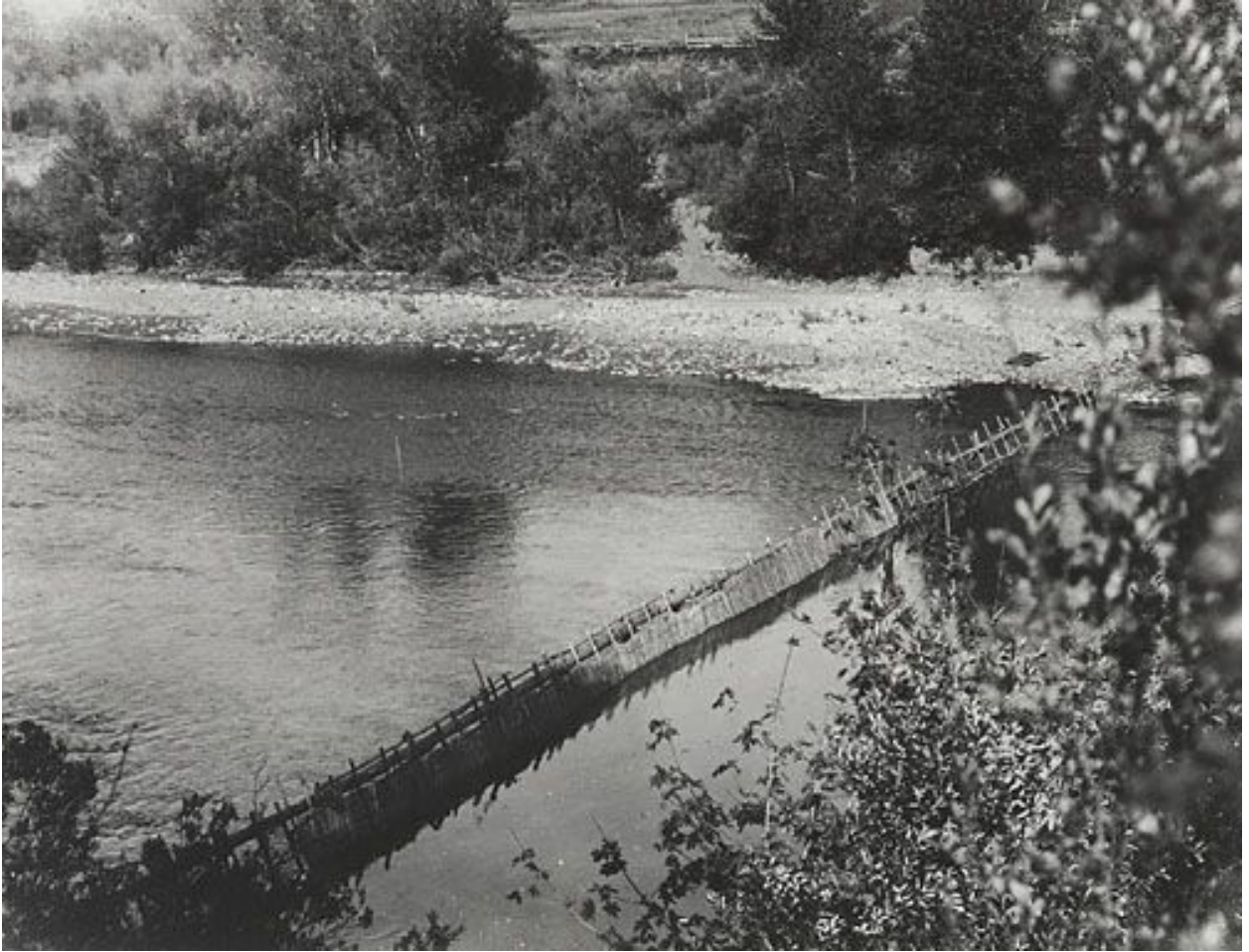


Plate I: Image 1



Plate I: Image 2



Plate II: Image 1

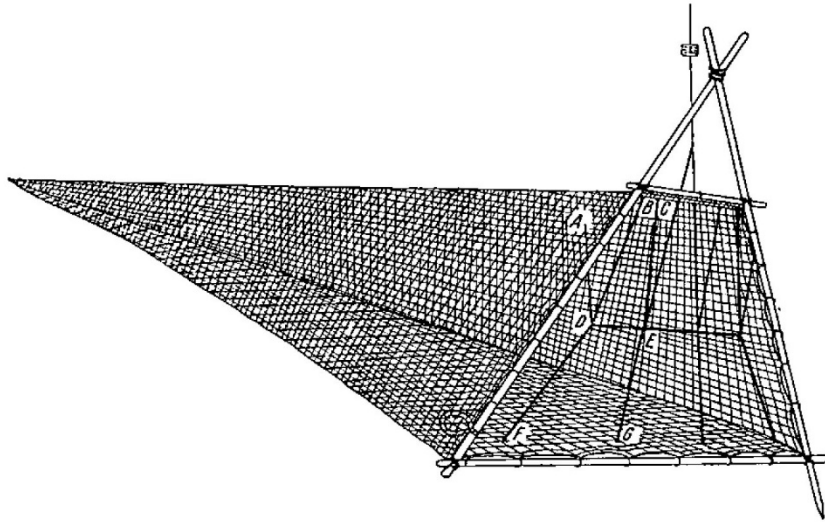


Plate II: Image 2



Plate III: Image 1

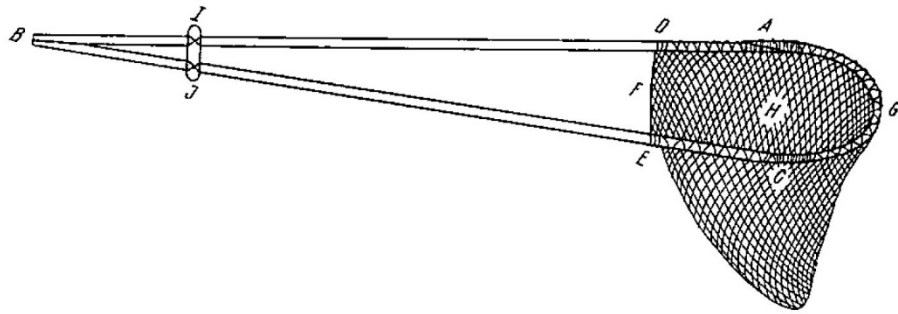


Plate III: Image 2