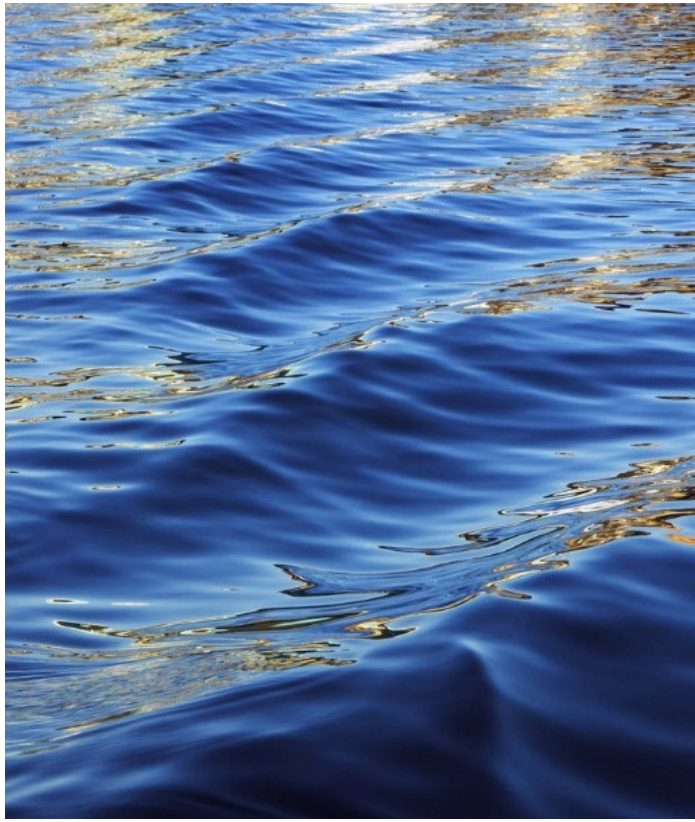
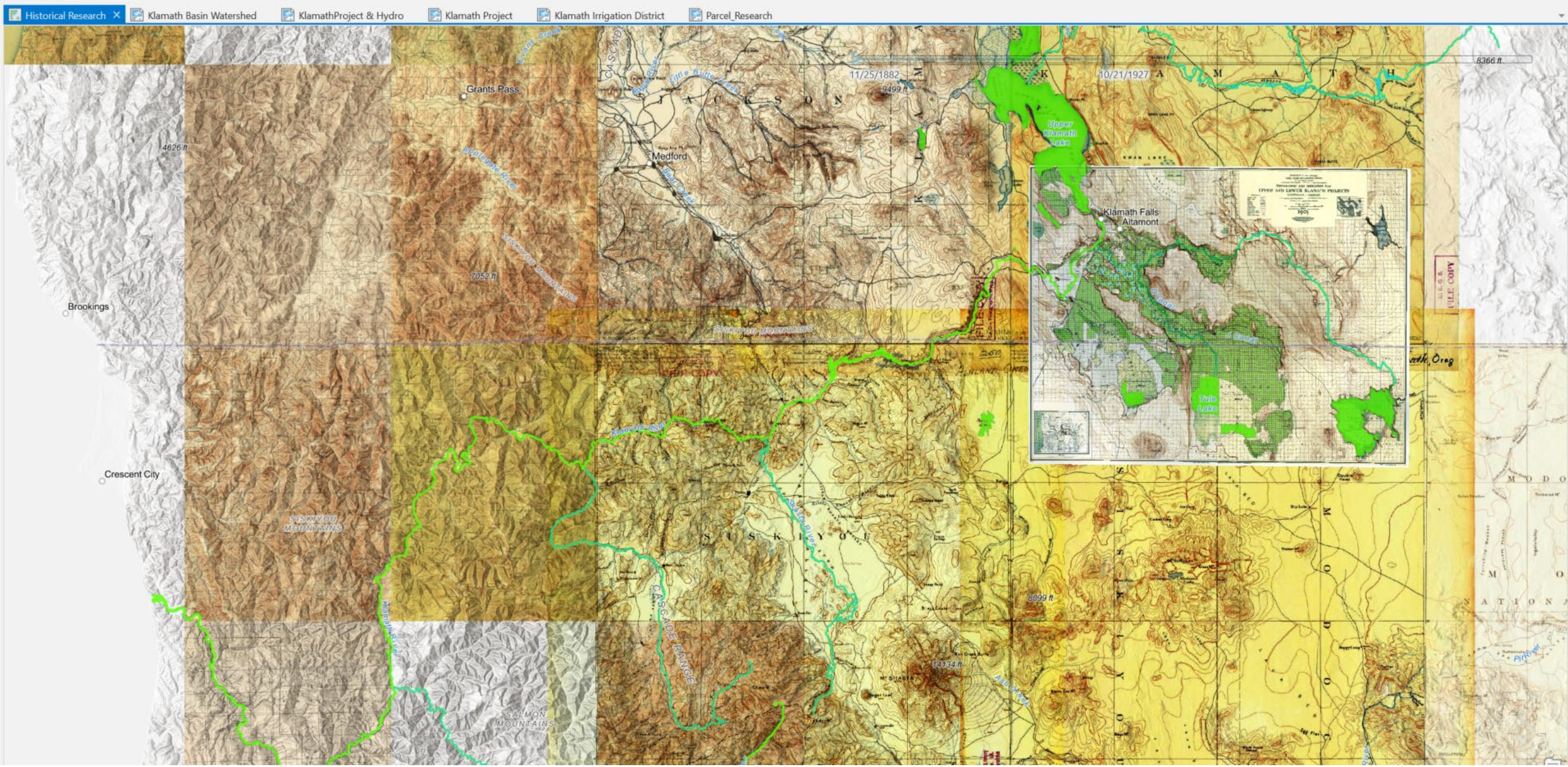
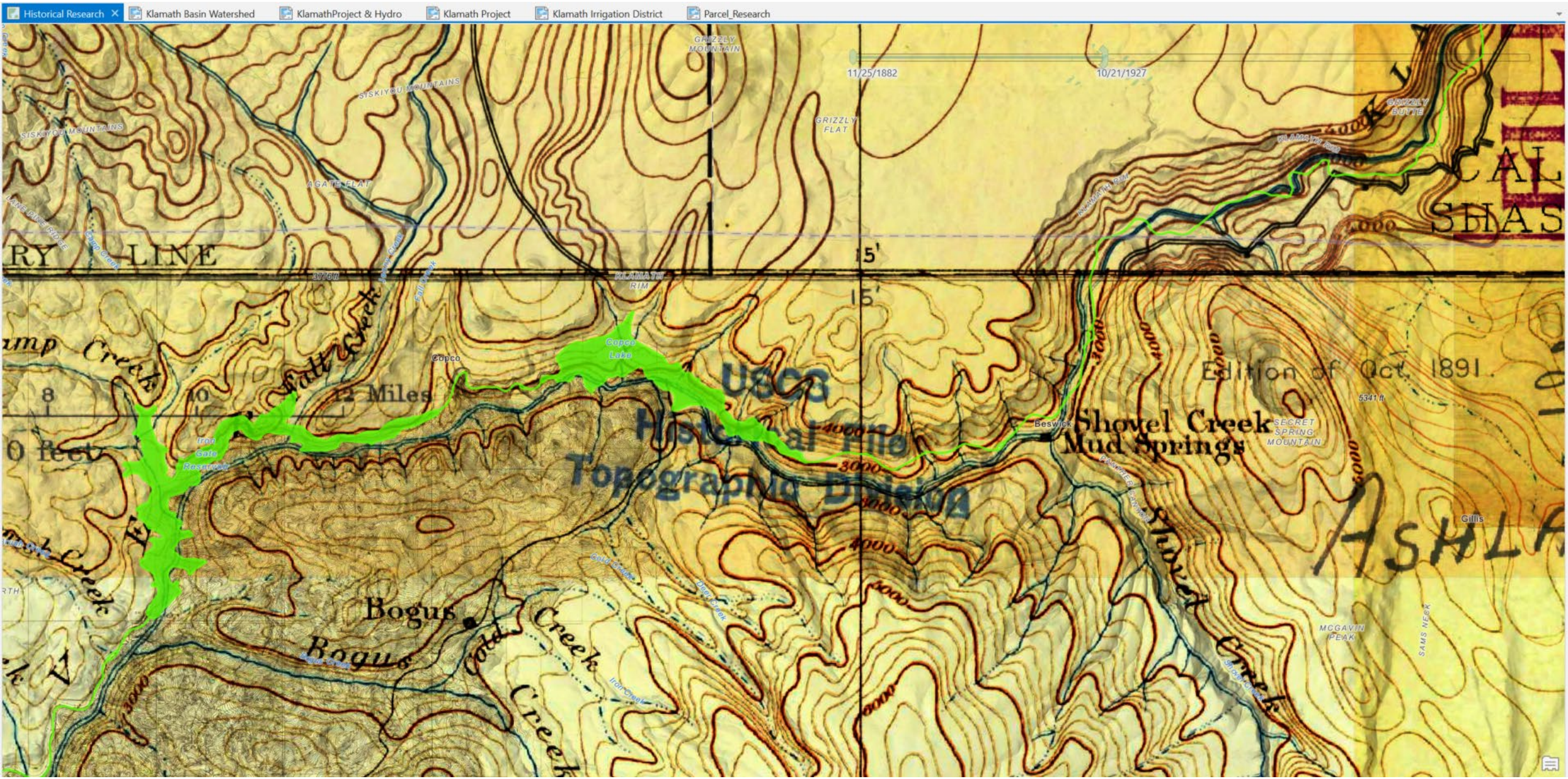
Salmon in the Upper Klamath Basin?

Literature Review





Klamath River watershed from Upper Klamath Lake, Oregon to Klamath, California: USGS Topo Maps 1880-1927, with USBR 1905 Project Map overlay



Historic pre-dam map with overlay of reservoirs created by 3 dams on the Klamath River in California. Note Fall Creek, Shovel Creek

Peter Ogden's journal entry from 24 January 1827

- When trapper Peter Skene Ogden first saw the Upper Klamath River Basin in 1826, he observed that "the Country as far as the eye can reach [was] one continued Swamp and Lakes."

- On the Klamath River, down stream from Keno, he records:

- "here for some distance in advance and in our rear as far as we can see is one continued rapid fall and Cascade, [his Shasta Tribe guide, overlooking the **14 miles of white water rapids** that flow into the **current COPCO Lake**] informs us, **beyond this the Salmon do not ascend."**

- Source: Waddell, James A. 14 April 2011. Excerpts from Peter Skeen Ogden's journal from 24 January 1827. As captured by Betty Hall, Shasta Tribe Historian.

Figure 8. Peter Skene Ogden (Klamath County Museum).

After trapping and trading for a few weeks in the Klamath Basin, Ogden took his men west and on January 24 camped on the Klamath River. Ogden remarked "here for some distance in advance and in our rear as far as we can see is one continued rapid fall & Cascade and our Guide informs us beyond this Salmon do not ascend so this is a convincing proof if I had any doubts that this River discharges in the Ocean." Ogden also commented on the vegetation: "In our travels this day I saw the White pine of a very large size Ceedor also some Wild Plane Trees a few of the stones collected and so far as I can judge at this season the soil appears good for cultivation . . . ." The Hudson's Bay Company brigade spent several days trapping along the Klamath and its tributaries, crossed the Siskiyou Mountains to work on the Applegate River in the Rogue River watershed, and then, in May, retraced its steps to the Klamath Basin (Davies and Johnson 1961:57-111).

42

George Gibbs' Journal of Redick McKee's Expedition Through Northwestern California in 1851

Reference Klamath River

- "**The spring salmon,** which is by far the best, is apparently **identical with that of the eastern States and of Europe** . Towards fall, a darker colored kind makes its appearance, which, like the former, **wends its way up such of the streams as afford sufficient water**, and which is not the returning and exhausted fish.
- Later still comes the **hump-backed [Pink] salmon**. This is hardly eatable, its flesh being dry and rank, and its appearance disgusting. The back, as its name indicates, is protuberant, and snout is depressed over the eyes, and the jaws furnished with large hooked teeth. Almost all the fish taken in the autumn have a diseased appearance; the skin being discolored in large blotches."

- Besides the salmon, there is also the salmon trout, a beautiful fish, and excellent eating.

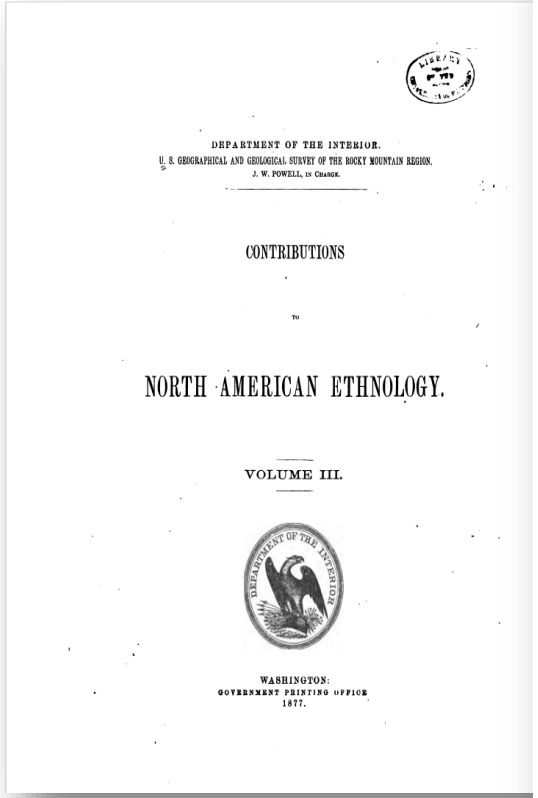
- The salmon rarely, if ever, is taken in fresh water, with the fly or other bait;

- In camping on the Klamath, it is necessary to seek the neighborhood of the brooks, especially at this season; as the water, never pure, is now offensive from the number of dead salmon.
- The salmon fishing was still going on; but the greater part of the fish exhibited an unhealthy appearance.

1877 Tribes of California, Contributions to North American Ethnology, Vol. III, Stephen Powers

- But the salmon, king of the finny tribes, they had not, **for that royal fish ascends the Klamath only to the first rapids below Lower Klamath Lake. Above them there is no deposit of gravel suitable for it to spawn in**.

They [native tribes] do not smoke-dry for winter consumption any considerable amount of fish, the principal kind used for this purpose being the **small** white lake-fish.



DEPARTMENT OF THE INTERIOR.
U. S. GEOGRAPHICAL AND GEOLOGICAL SURVEY OF THE ROCKY MOUNTAIN REGION.
J. W. POWELL, IN CHARGE.

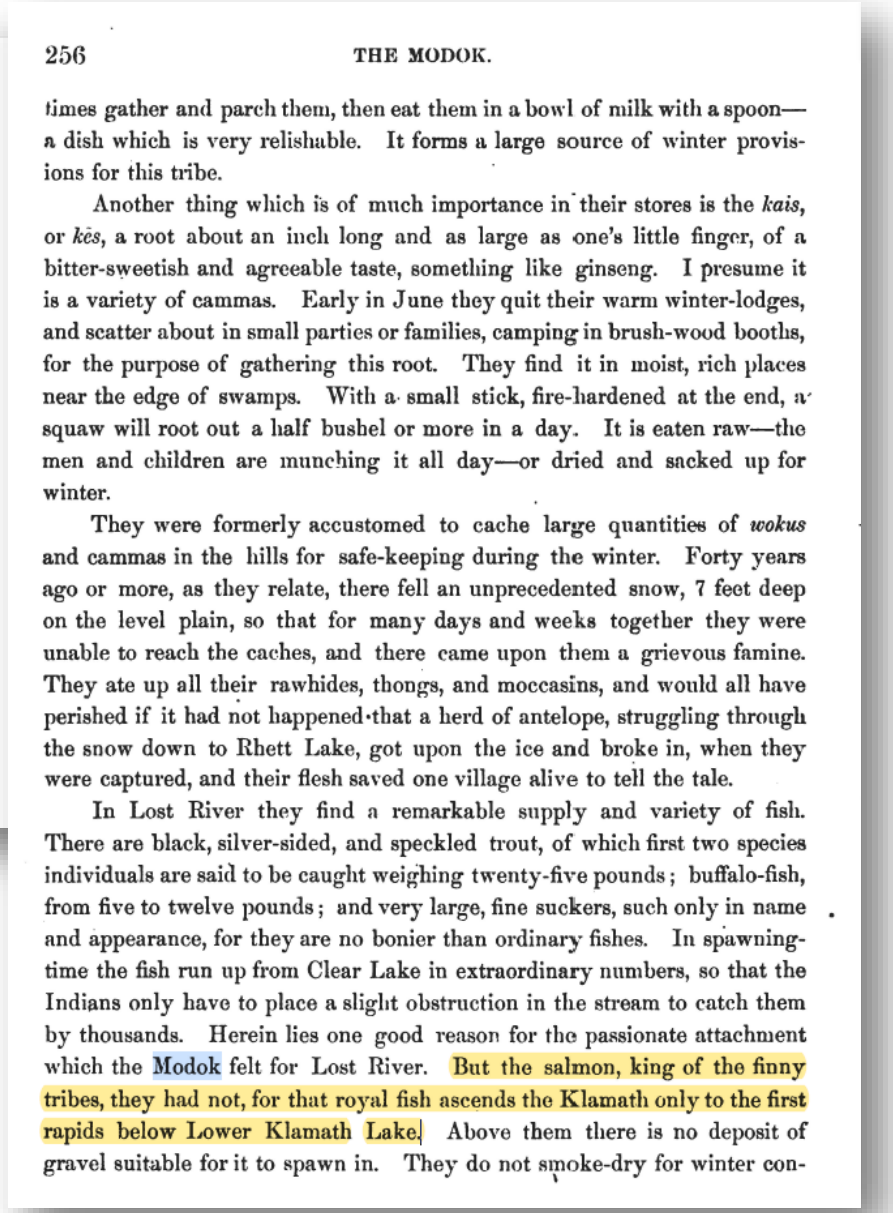
CONTRIBUTIONS

TO

NORTH AMERICAN ETHNOLOGY.

VOLUME III.

WASHINGTON:
GOVERNMENT PRINTING OFFICE
1877.



256 THE MODOK.

times gather and parch them, then eat them in a bowl of milk with a spoon—a dish which is very relishable. It forms a large source of winter provisions for this tribe.

Another thing which is of much importance in their stores is the *kais*, or *kès*, a root about an inch long and as large as one's little finger, of a bitter-sweetish and agreeable taste, something like ginseng. I presume it is a variety of cammas. Early in June they quit their warm winter-lodges, and scatter about in small parties or families, camping in brush-wood booths, for the purpose of gathering this root. They find it in moist, rich places near the edge of swamps. With a small stick, fire-hardened at the end, a squaw will root out a half bushel or more in a day. It is eaten raw—the men and children are munching it all day—or dried and sacked up for winter.

They were formerly accustomed to cache large quantities of *wokus* and cammas in the hills for safe-keeping during the winter. Forty years ago or more, as they relate, there fell an unprecedented snow, 7 feet deep on the level plain, so that for many days and weeks together they were unable to reach the caches, and there came upon them a grievous famine. They ate up all their rawhides, thongs, and moccasins, and would all have perished if it had not happened that a herd of antelope, struggling through the snow down to Rhett Lake, got upon the ice and broke in, when they were captured, and their flesh saved one village alive to tell the tale.

In Lost River they find a remarkable supply and variety of fish. There are black, silver-sided, and speckled trout, of which first two species individuals are said to be caught weighing twenty-five pounds; buffalo-fish, from five to twelve pounds; and very large, fine suckers, such only in name and appearance, for they are no bonier than ordinary fishes. In spawning-time the fish run up from Clear Lake in extraordinary numbers, so that the Indians only have to place a slight obstruction in the stream to catch them by thousands. Herein lies one good reason for the passionate attachment which the Modok felt for Lost River. But the salmon, king of the finny tribes, they had not, for that royal fish ascends the Klamath only to the first rapids below Lower Klamath Lake. Above them there is no deposit of gravel suitable for it to spawn in. They do not smoke-dry for winter con-

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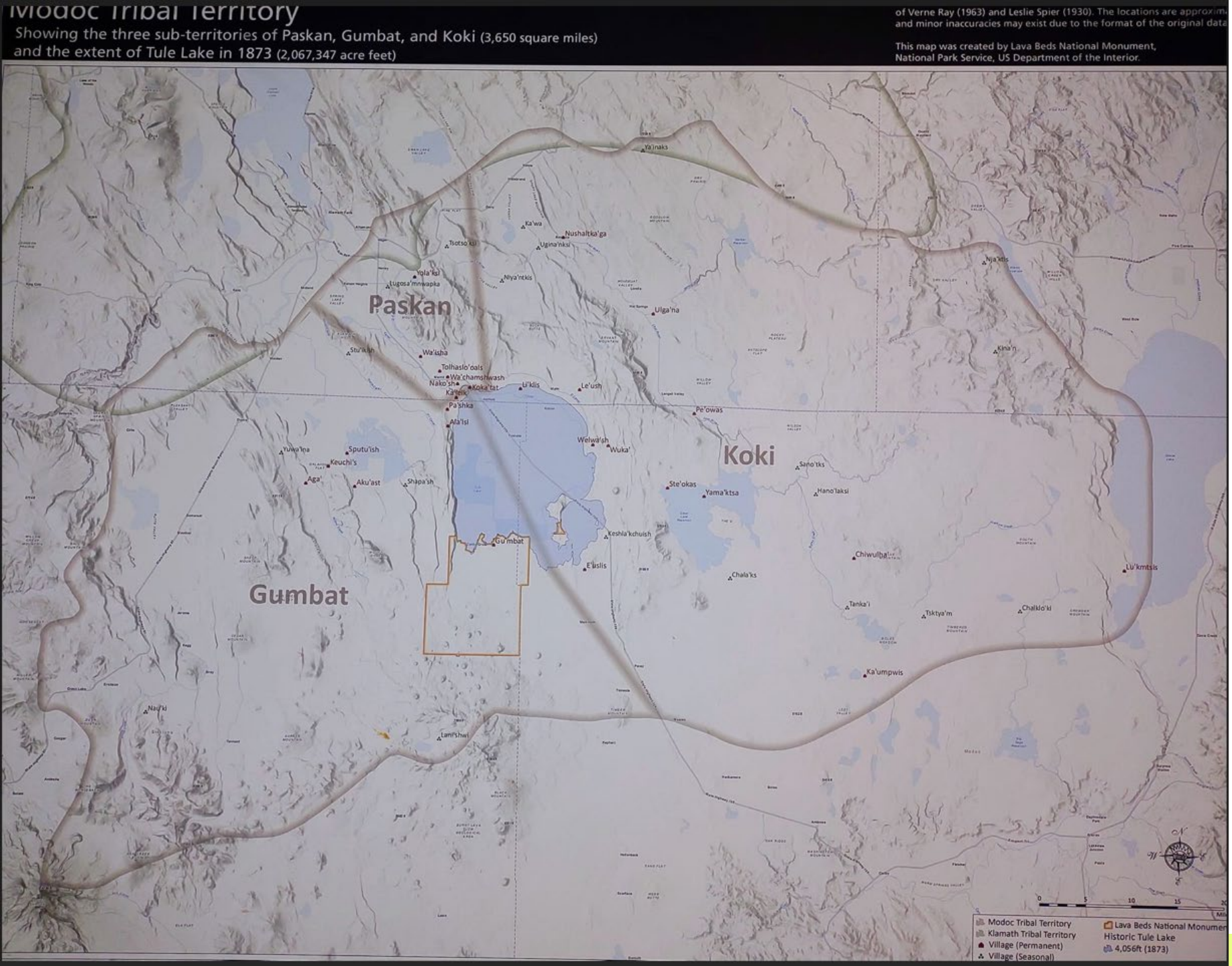


Anecdotal:

A research of historical villages, camps, hamlets of the **Modoc peoples** do not indicate permanent nor seasonal sites along the Klamath River below Keno although their territory included a significant portion of the river.

A lack of reliable fishing over time immemorial may be a contributing factor.

Also note a lack of Klamath salmon "ceremonies"

Historical accounts of fish passage during low water levels

- The Evening Herald, a Klamath Falls paper, on September 24, 1908. **"There is a natural rock dam across the river-below Keno, which it is almost impossible for fish to get over.** In their effort to do so, thousands of fine salmon are so bruised and spotted by the rocks that they become worthless."

- The exceptionally low flow in the [Link] river in 1908 is evident from the report of September 22 in The Evening Herald which described "**old Indian fish runways uncovered by low water in Link River**." They were dam-like Structures with runways for the fish to pass and be caught. They had been in use when white men first came to the area, but the Indians using them at that time did not recall their construction.

Geologic Barriers

- Two reefs on Klamath River below Keno are recorded as preventing or significantly limiting "sea salmon" access to the Upper Basin
  - "Geological conditions upstream from the site indicate that at one time the river ran over this reef 130 feet above its present bed, and at that point the waters were backed up about 5 miles and formed a lake about 1 mile." J.C. Boyle 1913
- The **"Salmon/Trout"** mentioned in the historical text and photos (this is likely the species currently defined as Red Band Trout) is referenced in https://myodfw.com/articles/beaver-state-podcast-episode-55-klamath-lake-redband-trout
- **Red Band Trout** clearly migrated upstream above the reefs (around Keno) on the Klamath River upstream into the Klamath Lake tributaries (and **is likely the "salmon/trout" referred to in the historical text**)

John Hamilton's 2005 & 2011 & 2021 articles provide many misstatements / falsehoods

- #1 Falsehood: Mr. Hamilton misstates in this article, "The **first** impassable barrier to anadromous fish on the mainstem Klamath River was Copco 1 Dam, completed in 1918... Prior to dam construction, anadromous fish runs accessed spawning, incubation, and rearing habitat in about 970 km (600 miles) of river and stream channel above the site of Iron Gate Dam"

- **FACT:** John D. Fortune, Arthur Gerlach, and C.J. Hanel in 1966 conducted a detailed review of all the available evidence of salmonoids in the Upper Klamath Basin and clearly state, "There is some evidence there once was a strong run of spring chinook, but **[the salmon runs] had declined to its present level before 1890...A log crib, rock-filled dam was constructed by the Klamath River Improvement and Lumber Company in 1889, forming a mill pond on the Klamath River at Klamathon. This operation continued until 1902. The dam was reported to be 10 or 12 feet in height. and apparently an obstacle to migrating fish...According to Shebly (1918) , the Federal Bureau of Fisheries began operating fish racks at Klamathon in 1910, leaving little chance for passage of upstream migrants after that time."**

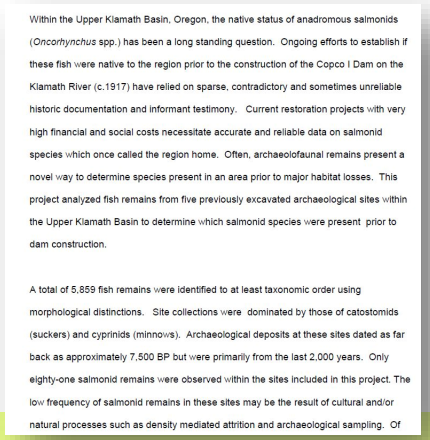
Archeological Fish Remains Analysis

- "Within the Upper Klamath Basin, Oregon, the native status of anadromous salmonids (*Oncorhynchus* spp.) has been a long standing question. Ongoing efforts to establish if these fish were native to the region prior to the construction of the Copco I Dam on the Klamath River (c.1917) have relied on sparse, contradictory and sometimes unreliable historic documentation and informant testimony."
- "A total of 5,859 fish remains were identified to at least taxonomic order using morphological distinctions …Archaeological deposits at these sites dated as far back as approximately 7,500 BP but were primarily from the last 2,000 years.
- Of the 5,859 fish remains examined, **only 24 remains (unknown if from the same fish) contained Sr:Ca in levels large enough to indicate these were from an anadromous fish**
- This finding undermines "testimony some individuals suggested anadromous salmon provided up to one-third of the tribe's food during the year." And puts into question the original source of the fish. Stevenson addresses inter-tribal trade as a possibility

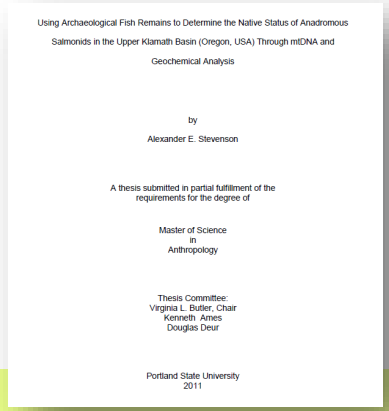
(99+) Using Archaeological Fish Remains to Determine the Native Status of Anadromous Salmonids in the Upper Klamath Basin (Oregon, USA) Through mtDNA and Geochemical Analysis | Virginia Butler and Alexander Stevenson - Academia.edu

Stevenson criticizes the methods utilized and accepted by NMFS when he states, "**Hamilton and colleagues (2005) cite Cressman's data as evidence for Chinook salmon in the upper basin but do not also consider the tentative nature of Hubbs' species identifications." P.18**.

"Hamilton and colleagues (2005) study provides a false sense of accuracy to their species and biogeographic determinations. Their review considers all mentions of "salmon" in the documentary record to refer to Chinook and provides no justification for this practice. The study does not draw on the full body of documentary evidence available."


Within the Upper Klamath Basin, Oregon, the native status of anadromous salmonids (*Oncorhynchus* spp.) has been a long standing question. Ongoing efforts to establish if these fish were native to the region prior to the construction of the Copco I Dam on the Klamath River (c.1917) have relied on sparse, contradictory and sometimes unreliable historic documentation and informant testimony. Current restoration projects with very high financial and social costs necessitate accurate and reliable data on salmonid species which once called the region home. Often, archaeolofaunal remains present a novel way to determine species present in an area prior to major habitat losses. This project analyzed fish remains from five previously excavated archaeological sites within the Upper Klamath Basin to determine which salmonid species were present prior to dam construction.

A total of 5,859 fish remains were identified to at least taxonomic order using morphological distinctions. Site collections were dominated by those of catostomids (suckers) and cyprinids (minnows). Archaeological deposits at these sites dated as far back as approximately 7,500 BP but were primarily from the last 2,000 years. Only eighty-one salmonid remains were observed within the sites included in this project. The low frequency of salmonid remains in these sites may be the result of cultural and/or natural processes such as density mediated attrition and archaeological sampling. Of


Using Archaeological Fish Remains to Determine the Native Status of Anadromous Salmonids in the Upper Klamath Basin (Oregon, USA) Through mtDNA and Geochemical Analysis

by

Alexander E. Stevenson

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science in Anthropology

Thesis Committee:
Virginia L. Butler, Chair
Kenneth Ames
Douglas Deur

Portland State University
2011

HAMILTON "SALMON" in the 2005 Article

Hamilton's 2005 article clearly states, **"When documents identified fish as only salmon, we assumed they were Chinook salmon."** This is clearly an error given a quick read of Fortune et al 1966."

- Hamilton further **ignores Gatchet's inability to define between a salmon, trout, and "salmon trout"**…likely the Red Band Trout (Salmon).

- In "documents and reports" of Hamilton's 2011 article, the authors again fail to acknowledge Fortune et al (1966) finding that **everyone in the region was confused about the term "salmon."** Locals, to include tribes, could not, and did not have the technical capability to distinguish between a trout (assuming Red Band Salmon) and other large species of fish. In fact, throughout the historical accounts, the term "Salmon Trout" is used in numerous first-hand accounts. Fortune explains clearly this term was an issue related to fishing regulations and confusion caused by the very large local Klamath trout species.

Trout or Salmon?

- In June 1894, Gilbert sampled **rainbow trout from Klamath River** and Upper Klamath Lake. He was unable to distinguish them from typical Salmo pairdneri, stating that the **larger specimens had the characteristics of sea-run or land locked fish with a few spots and a truncate tail.** He described the smaller specimens as having fewer spots and more silvery appearance than pairdneri from coastal streams.

- Klamath **Redband Salmon / Trout are genetically more identical to Pyramid Lake species** than Klamath River species of Steelhead.
-
- https://myodfw.com/beaver-state-podcast/klamath-lake-redband-trout?fbclid=IwAR07dSiW3Y3IKnsVBDTg8MT3pqRYn83R20I2_32dRK466dLCSeKQVQQANrc

  - Redband genetics came from the east…**not the ocean.** 05:30 – 6:30 minutes

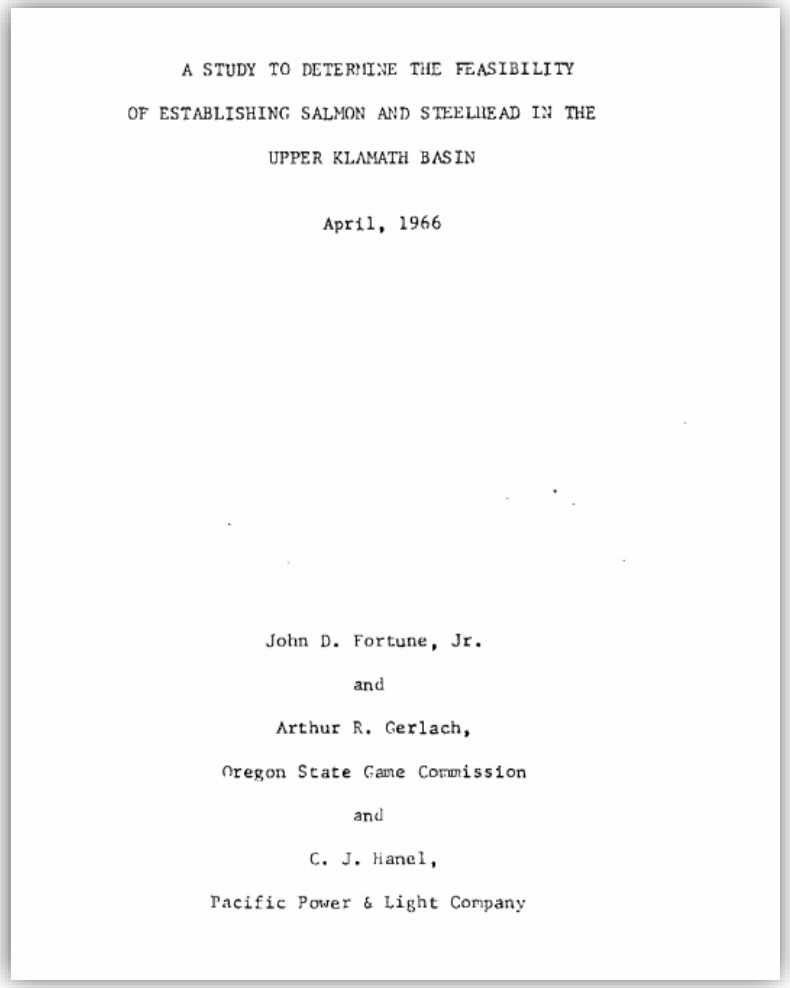
  - 7 minutes…genetically different from Klamath River steelhead.

- **Rainbow Trout** are a type of ocean-going **trout**.
  - The steelhead branch of the rainbow trout spends most of its time in the ocean, while the main branch spends all of its time in freshwater.

  - Outside of Alaska, **redband salmon / trout in the Upper Klamath are the largest-bodied strain of native rainbow trout that remain in freshwater their entire lives**. Fish over 24 inches are common and 30-inch trout are caught each year.

"Salmon" in the Upper Klamath Basin?

- In explaining the fishery methods used by the Klamath tribe, Spier wrote that fishing with nets was the primary method. Spears were not used much because of the dark water of Williamson River and Klamath Lake, other than the Pelican Bay area. Salmon were sometimes speared from river banks and from the rocks at Klamath Falls. Hooks were used chiefly for **large fish like salmon and "salmon trout".**



A STUDY TO DETERMINE THE FEASIBILITY

OF ESTABLISHING SALMON AND STEELHEAD IN THE

UPPER KLAMATH BASIN

April, 1966

John D. Fortune, Jr.

and

Arthur R. Gerlach,

Oregon State Game Commission

and

C. J. Hanel,

Pacific Power & Light Company

- The Evening Herald, April 8, 1912. Irving Wilson, State Fish Culrurist, states...To the majority of fishermen, **a rainbow, dolly varden, or steelhead does not mean any more than a salmon trout**.
- Fuel was added to the controversy on April 9, 1912, when - The Evening Herald carried a statement: by **David Starr Jordan classifying all trout on the Pacific Coast as salmon trout.** On the same day, the paper printed a letter from W. H, Stiebly, Superintendent of Hatcheries, California, to IIany Telford, Oregon Deputy Game and Fish Warden. II **The name salmon trout is only a local name applied to any species of larger trout, There is not any such fish as a salmon trout, considered from a scientific standpoint. The large fish in the Klamath are called salmon trout,** The large fish in Pyramid Lake, an entirely different variety, are known locally as salmon trout. It is a name given to any large trout, but scientifically there does not exist any such fish," **Klamath fishermen apparently supported Jordan, using the term "salmon trout" in order to fish when trout season was closed, as there was no closed season on "salmon trout".**

Upper Klamath Lake "Strange Salmon Trout"

- Lane and Lane Associates (1981) provides some good source material which was not included in Fortune…
- However, they gloss over the Red Band Salmon/Trout issue (To their defense, I do not recall any discussion or acknowledgment of something other than rainbow trout while fishing around the waters of the Klamath Basin in 1981 when this was published).
- As scientists with access to Fortune (1966) and other historical records I did not have in 1981, they state, "Some people in the Klamath Basin today are still convinced that there are strange "salmon like" trout in Upper Klamath Lake."

Oregon may not have been much concerned with the problem of Klamath Basin salmon. The major known commercial fishery for Klamath salmon in the early 20th century was in the Klamath River estuary in California where there was no obvious benefit accruing to Oregon. At that time, it was thought that the Klamath salmon did not travel in the ocean far from the mouth of the Klamath River. (Snyder 1930:92ff.) Concern on the part of the Oregon Fish Commission for Klamath salmon may have been minimal. On the other hand, they were interested in trout as a part of the interest in the Klamath Basin as a sport fishing center.

To the degree that COPCO officials were coperative in the matter of fish blockage and passage at COPCO I, it may have been that their primary concern was not with salmon but with trout, for sport fishing. If one reflects back upon the Klamath Falls Evening Herald of March 7th, 1918 given here on page 147, it will be noticed in the article that:

1. Sportsmen will be delighted to learn that thousands of fish will be planted in the streams adjacent to Klamath Lakes, which will lmake this section an angler's paradise.
2. The special concern is protection of one of the world's greatest fisherman's resorts.
3. The members of the COPCO board of directors are enthusiastic fishermen.

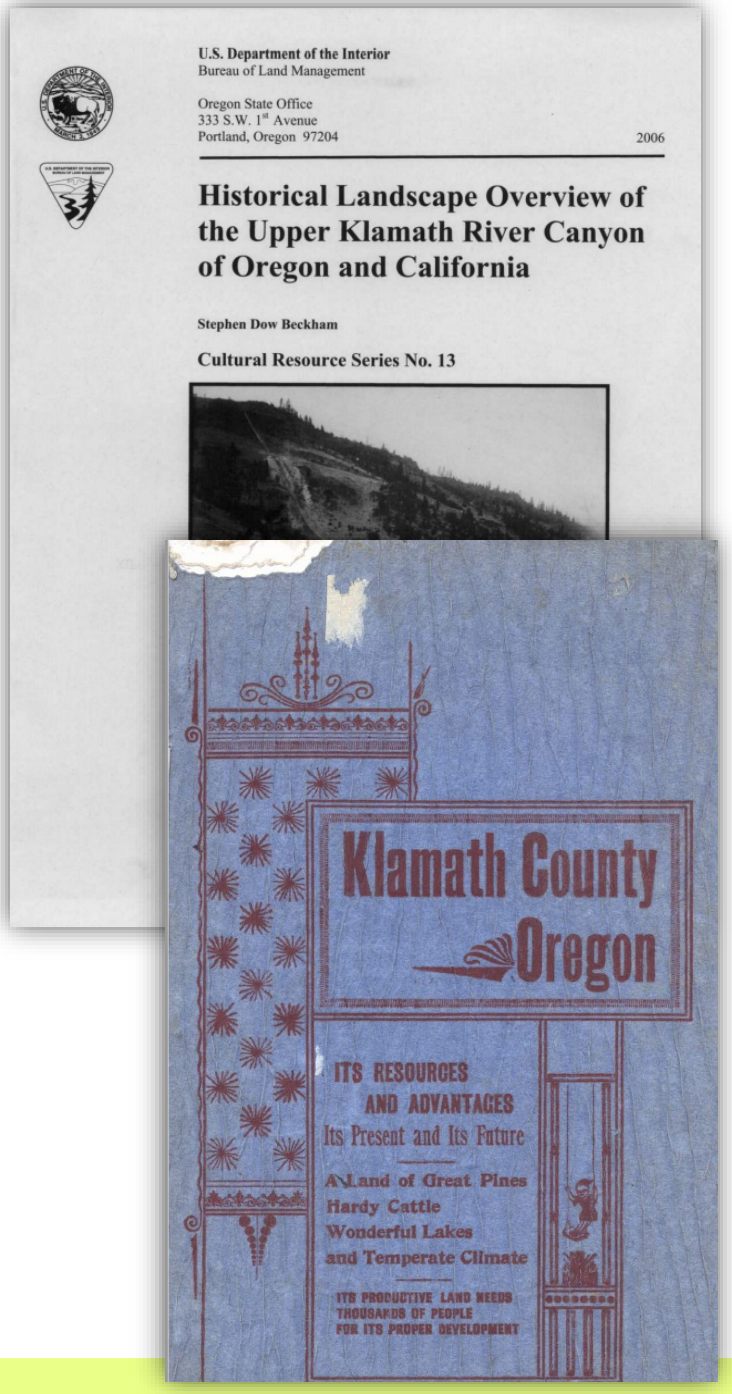
Clearly the concern was with regard to recreational fishing for trout.

Circumstantial Evidence

- From nearly two years of field work with Klamath and **Modoc informants in the 1870s**, Albert Gatschet developed **a "Topographic List of Camping Places."** He said that these were either **camping sites for seasonal fishing or hunting or places of permanent settlement.** The locations his informants named were "Camping Places on Klamath Marsh," "Camps Along Williamson River," "Eminences Around Upper Klamath Lake," Camping Places in Sprague River Valley," and "Camping Places of the Modoc Country."
- **His informants did not name any places in the upper Klamath River Canyon.**

- **Salmon Runs above Keno are not mentioned in the 1900 promotion book. Given nature of the book, it should be mentioned if it were remotely true.**

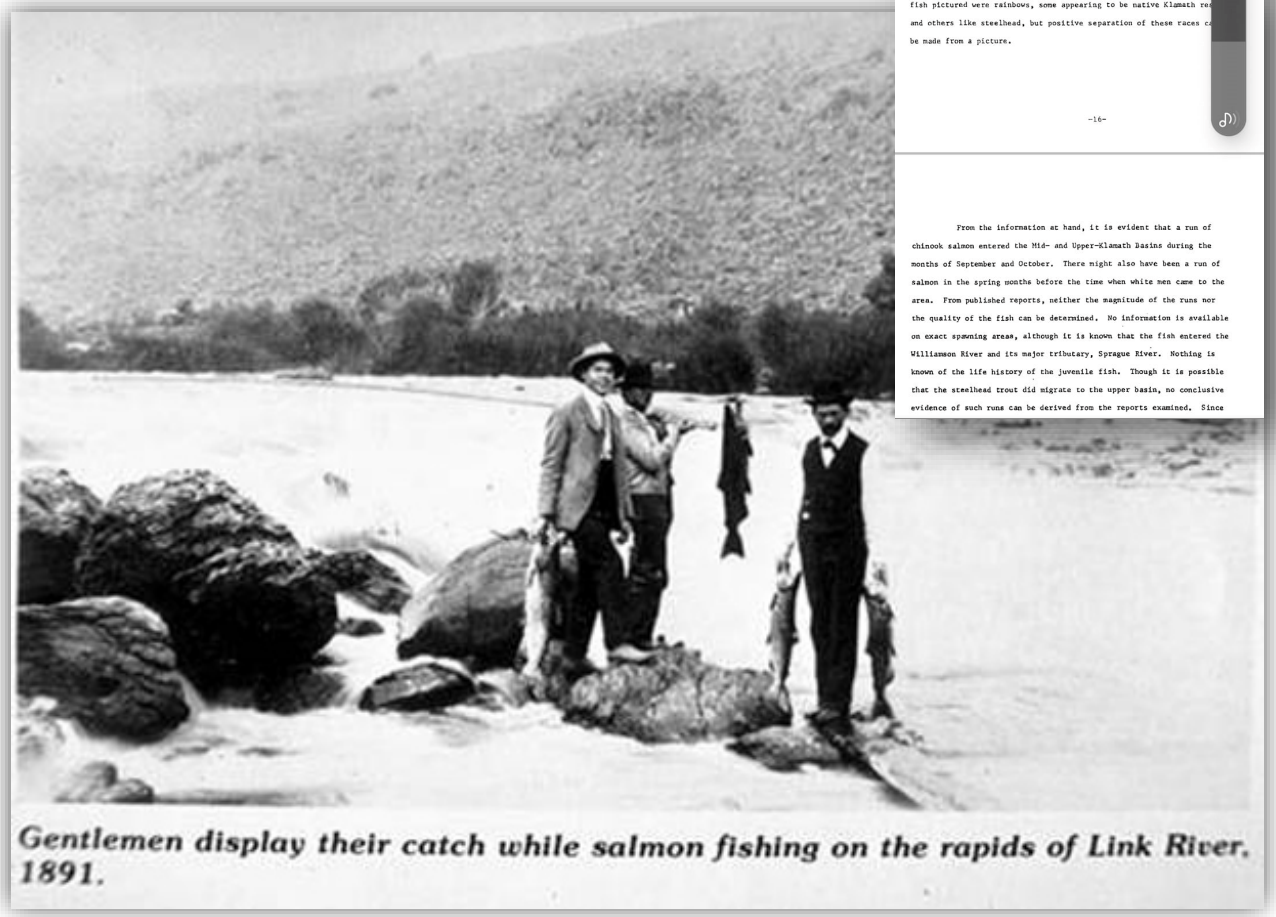
- Evidence shows Shasta Tribes established annual and seasonal hamlets along the Klamath River which were supported by big game and fishing.
- In contrast…
- **A research of historical villages, camps, hamlets of the Modoc peoples do not indicate permanent nor seasonal sites along the Klamath River below Keno although their territory included a significant portion of the river.**
- **A lack of reliable fishing over time immemorial may be a contributing factor.**
- **Lack of Klamath salmon "ceremonies"**



Explaining Link River accounts of "Salmon"

- Klamath Echoes Account of George Miller
  - "The day before, Father had caught a large salmon in the river and had cleaned it…after my (ten pound fish) was landed, Father cleaned it and placed it inside the first fish and sent both across the mountains."

- One bit of evidence cited that chinook salmon did run to the Upper Klamath Basin is a picture of some fish taken from Link River; however,
- ***Dr. Carl E. Bond, Professor of Fisheries at Oregon State University***, examined the picture and positively identified **most fish pictured were rainbows, some appearing to be native Klamath residents and others like steelhead, but positive separation of these races cannot be made from a picture.**



Gentlemen display their catch while salmon fishing on the rapids of Link River, 1891.

made of the trout fishing in Upper Klamath Lake and its tributaries.

Finally, mention was made of "silver salmon that run in the Klamath River during August and September. During August the trout in the river cannot be persuaded to look at any lure. These salmon put up a fine fight and leap, breaking water continuously."

One bit of conclusive evidence that chinook salmon did run to the Upper Klamath Basin is a picture of some fish taken from Link R... Dr. C. E. Bond, Professor of Fisheries at Oregon State University, examined the picture and positively identified a chinook salmon. Of fish pictured were rainbows, some appearing to be native Klamath re... and others like steelhead, but positive separation of these races c... be made from a picture.

-16-

From the information at hand, it is evident that a run of chinook salmon entered the Mid- and Upper-Klamath Basins during the months of September and October. There might also have been a run of salmon in the spring months before the time when white men came to the area. From published reports, neither the magnitude of the runs nor the quality of the fish can be determined. No information is available on exact spawning areas, although it is known that the fish entered the Williamson River and its major tributary, Sprague River. Nothing is known of the life history of the juvenile fish. Though it is possible that the steelhead trout did migrate to the upper basin, no conclusive evidence of such runs can be derived from the reports examined. Since

Note the lack of fishing poles, nets and the dress/shoes of the men in the photo. Many speculate this photo and others were part of a tourism promotion strategy and a single Chinook was brought with the photographer from downriver as a prop. However, no written evidence found to date supports this speculation.

Questions to ponder…

- If a rock crib dam at Klamathon stopped all / most / a majority of salmon runs as early as 1889 through 1902, and modified and again prevented passaged through 1910…then how are photographs and accounts of "Salmon" above Keno during this period accounted for?
- If 5,859 fish remains at upper basin ceremonial sites were examined, and only 25 bones have traces of chemical compositions indicating they were ever in the ocean, and we know the Klamath Tribe traded for Salmon, does the archeological evidence at ceremonial sites promote that Chinook or other salmon were swimming to the Upper Klamath Basin?

1. The stories of salmon above Keno were not passed down to me through TEK...therefore, I have to rely upon written records to evaluate and explain why the TEK information was not passed to me and why the TEK is in conflict with the written and observed records.

2. The Shasta escort to Ogden, provided from the Klamath is recorded in the journals as stating a point downstream of Keno, looking at a set of rapids stating above that point Salmon do not ascend.

3. The archeological evidence of over 5000 bones in the Klamath bones indicates only about 24-27 (I forget the exact #) had chemical traces of elements indicating they had been in the ocean. (Knowing the Klamath's traded in the Warm Springs area, this makes sense.

4. J.C. Boyles sketch of Lake Clamittee (forgive my spelling) indicate a 31' reef near where the Shasta guide made their statement to Ogden. Salmon typically can't jump 31'
5. John D. Fortune does a great job explaining the history between 1890 and 1966. In his assessment of the available written records the salmon runs were in decline before 1890 and stable between 1890 and 1966.

6. John D. Fortune's work refutes Hamilton's (which Hamilton cites and ignores Fortune's discussion of Salmon-Trout - I'll assume Land locked Red Band Trout.

7. OSU genetic studies indicate the Klamath Red Band Trout are more genetically linked to Pyramid Lake Red Band Trout than Klamath River Steelhead...indicating a possible connection to the Pit River, not the Klamath.

8. If Chinook were to get to Klamath, the water cycles and hydrology would more support a spring run than a fall run...however, the historic written accounts all discuss fall runs.

9. Fortune accounts for a 1908 salmon run indicating salmon were unable to get above a reef somewhere below Keno. 1908 was a low water year in which Link River was recorded as dry or low for periods.

10. If the racks at Klamathon were preventing fish passage, then how did Chinook get photographed in the early 1900s in the Klamath Basin...unless they were Salmon-Trout.

11. Carl E. Bond studied the photographs and concluded most of the fish in the photographs were local rainbow trout.

12. Where are the Modoc fishing camps around the natural Keno reef barrier? Historical accounting of the traditional Modoc villages and camp sites do not include any acknowledgement of a significant place to strategically place themselves to get a high nutrient food source that was reliable.

13. Where are the accounts of Modoc fish ceremonies for salmon?

14. The 1900 historical "tourism" notices for the Klamath area speak of the great fishing opportunities...with Salmon fishing below Keno. Why not tell the truth about Salmon range?

15. How many Klamath words are there for Salmon? As compared to other coastal tribes? Respecting TEK, and reading Fortune...I have to ask myself if the single Klamath word....and the lack of words expressing differences in trout and similarities in the words... Well, I do not want to disrespect oral histories of TEK, I have dealt with oral histories in Afghanistan and Iraq...and I have....well...ok...opinions. I would prefer to...well damn, it is hard not to have this discussion about TEK without evaluating all the other evidence to better understand. Given TEK, I must state I am willing to have these discussions over a beer, with an audience that will not be offended by my lack of TEK, and at the end of the day, if evidence I am missing is presented that changes my perspective, I'll gladly add this evidence to my knowledge base. We may have to respectfully disagree...or I may have to conceede that, from time to time, on rare occasions, when conditions were exactly right (high water years perhaps)...maybe a Chinook or two (got lost) and were physically able to make it here. I am willing to have that discussion and I am willing to change my mide if the evidence weighs in that direction.
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16. Fortune: Log crib dams installed between 1889 and 1910. When was the Link River photo taken...1902????

17.The Evening Herald, a Klamath Falls paper, on September 24, 1908. "There is a natural rock dam across the river-below Keno, which it is almost impossible for fish to get over.

18. John D. Fortune, Arthur Gerlach, and C.J. Hanel in 1966 conducted a detailed review of all the available evidence of salmonoids in the Upper Klamath Basin and clearly state, "There is some evidence there once was a strong run of spring chinook, but it had declined to its present level before 1890...A log crib, rock-filled dam was constructed by the Klamath River Improvement and Lumber Company in 1889, forming a mill pond on the Klamath River at Klamathon. This operation continued until 1902. The dam was reported to be 10 or 12 feet in height. and apparently an obstacle to migrating fish...According to Shebly (1918) , the Federal Bureau of Fisheries began operating fish racks at Klamathon in 1910, leaving little chance for passage of upstream migrants after that time."

19. In "documents and reports" of Hamilton's 2011 article, the authors again fail to acknowledge Fortune et al (1966) finding that everyone in the region was confused about the term "salmon." Locals, to include tribes, could not, and did not have the technical capability to distinguish between a trout (assuming Red Band Salmon) and other large species of fish. In fact, throughout the historical accounts, the term "Salmon Trout" is used in numerous first-hand accounts. Fortune explains clearly this term was an issue related to fishing regulations and confusion caused by the very large local Klamath trout species.

20. Hamilton's 2005 article clearly states, "When documents identified fish as only salmon, we assumed they were Chinook salmon." This is clearly an error given a quick read of Fortune et al 1966."

21. In explaining the fishery methods used by the Klamath tribe, Spier wrote that fishing with nets was the primary method. Spears were not used much because of the dark water of Williamson River and Klamath Lake, other than the Pelican Bay area. Salmon were sometimes speared from river banks and from the rocks at Klamath Falls. Hooks were used chiefly for large fish like salmon and "salmon trout".

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22. The Evening Herald, April 8, 1912. Irving Wilson, State Fish Culturist, states...To the majority of fishermen, a rainbow, dolly varden, or steelhead does not mean any more than a salmon trout.

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23. Fuel was added to the controversy on April 9, 1912, when - The Evening Herald carried a statement: by David Starr Jordan classifying all trout on the Pacific Coast as salmon trout. On the same day, the paper printed a letter from W. H, Stiebly, Superintendent of Hatcheries, California, to Ilany Telford, Oregon Deputy Game and Fish Warden. II The name salmon trout is only a local name applied to any species of Larger trout, There is not any such fish as a salmon trout, considered from a scientific standpoint. The large fish in the Klamath are called salmon trout, The large fish in Pyramid Lake, an entirely different variety, are known locally as salmon trout. It is a name given to any large trout, but scientifically there does not exist any such fish," Klamath fishermen apparently supported Jordan, using the term "salmon trout" in order to fish when trout season was closed, as there was no closed season on "salmon trout".

24. In June 1894, Gilbert sampled rainbow trout from Klamath River and Upper Klamath Lake. He was unable to distinguish them from typical Salmo pairdneri, stating that the larger specimens had the characteristics of sea-run or land locked fish with a few spots and a truncate tail. He described the smaller specimens as having fewer spots and more silvery appearance than pairdneri from coastal stre