

SALMON

🐟 MAIN MESSAGES 🐟

- Salmon is an important food source for the Hän and other First Nations people of the Yukon River.
- The salmon has an amazing life cycle. After its birth in a spawning bed, the young fish travels 2400 km to the ocean. A few years later it retraces its route up the Yukon River to spawn in the same location in which it hatched.
- Every summer, the Hän harvested salmon from two separate fish runs: the Chinook salmon (*Oncorhynchus tshawytscha*) in July, and the chum or dog salmon (*Oncorhynchus keta*) in late summer and early fall.
- The size of the salmon run is affected by various human and environmental factors, not all of which are fully understood.
- Since the early 1900s, American and Canadian authorities have understood that the salmon fishery needed regulation to preserve fish stocks. They have not always agreed on the best means of conservation, however, and approaches to fishery management have changed over time.



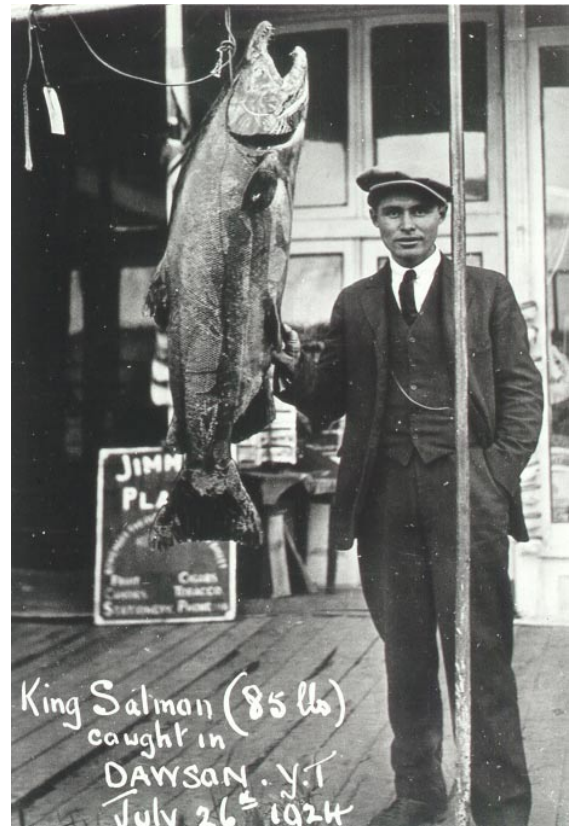
Although not so completely dependent upon the salmon as the natives of the lower river, the upper-river people also would be at sore loss without it. The chase is more or less precarious everywhere; the harvest of the water is sure. Dried and smoked, the fish are stored up for the winter, and furnish a large part of the subsistence of man and dog. In some seasons the catch is plentiful and in others it is scant but it never fails altogether.

– Archdeacon Hudson Stuck, 1917.

I went to Dawson City...I always go down there to get my salmon. They're so small, just tiny little ones, and they're all small like that now. I think I've never seen that in my life, because I've seen all sorts of salmon, a great big one, caught one ninety-five pounds once. And this is pitiful. I look at that fish. They're nice fish but they're that long; they're supposed to be four years old.

– Rowena Flynn, quoted in Yukon State of the Environment Report 1999.

Yukon Archives 7702, Tidd Coll.



THE STORY

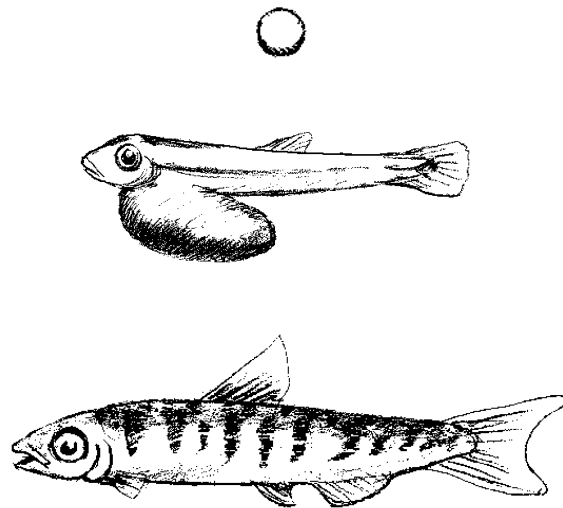
Although the Hän people were skilled at hunting and gathering a variety of food, their most important food source came from two summer salmon runs up the Yukon River. The Tr'ondëk Hwëch'in moved to camps along the Yukon River in late spring and early summer. Here they prepared their fish camps and equipment before the busy time of the two salmon runs – long days of catching, processing and preserving the plentiful fish. This was a time of sharing with First Nation peoples who lived farther from the Yukon River as well as a time for trading, socializing and even intermarriage.

Salmon Life Cycle

There is much to marvel at in the life cycle of these remarkable fish. Salmon begin life as tiny fingerlings, or fry, in spawning beds in tributary rivers and creeks of the Yukon River and even in the Yukon River itself. The fish that survive their first year migrate down the Yukon River to the Bering Sea, about 1500 miles (2400 km) from the mouth of the Klondike River. After several years of life in salt water, the fish reverse their long journey, this time swimming upriver to their original hatching sites. In their overwhelming urge to reproduce, the fish completely cease eating from the time they leave the ocean until they reach the spawning beds, a month-long journey. During the spawning phase, the backs of the salmon darken, their sides turn from pink to dark red and males develop a hooked snout, from which they get their Greek name *Oncorhynchus* or “hooked nose.” Upon arrival, the females lay from 6000 to 8000 eggs in *redds*, or nests which they dig in the river gravel. The males fertilize the eggs with milt. Once they have completed the important task of procreation, the salmon die but continue to be elements in the natural cycle. The dead and dying fish feed a variety of birds and animals, including eagles and bears, while their remains fertilize vegetation at the water's edge and beyond.

Two species of salmon undergo this arduous journey up the Yukon River: the king or Chinook salmon (*Oncorhynchus tshawytscha*) weighing up to 23 kilograms, and the smaller dog or chum salmon (*Oncorhynchus keta*). A third species, the Coho salmon (*Onchorynchus kisutch*), also swims up the Yukon River, but as far as we know, only makes it as far as the Porcupine River, about 350 miles (560 km) downstream from the Klondike River. They migrate late in the season and people catch them under the ice.

The king salmon run takes place from mid July to early August with the first fish arriving as early as mid June; the dog salmon arrive later in the summer. Many consider the richer Chinook salmon flesh to be the best eating, although some prefer the blander-tasting, less oily chum salmon. Turn-of-the-century journalist Tappan Adney speculated that the dog salmon was named either after its canine-looking teeth or the fact that the fish were used chiefly as dog food.



from top to bottom: egg, alevin, fry.
From *Exploring the Whitehorse Fishway: A Guide to the Travels of the Yukon River Chinook Salmon*.
Booklet prepared for Yukon Energy Corporation.

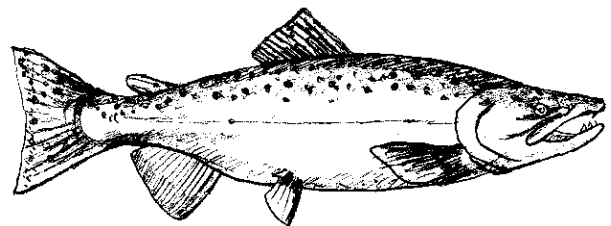
Fishy Facts:

- Out of approximately 6000-8000 eggs, only about 10% survive to the fry stage. From that same hatch, an average of only two to six adult salmon will survive to make the long migration from the Pacific Ocean to Yukon River's spawning beds.
- Salmon need to be escape artists. The juvenile salmon travelling downriver are a tasty treat for mergansers, seagulls and larger fish such as inconnu and pike. The salmon that reach the Pacific Ocean spend four years avoiding killer whales, seals and fishing nets. Those that survive to migrate upriver face more hazards from human and animal fishers.
- The Chinook salmon in the Yukon River are near the northern end of their range. The fish hatched in the upper reaches of the river above Whitehorse migrate further than any other Chinook species in the world, a distance of 3000 kilometres.
- The length of the salmon fishing season and catch limits depend on the numbers of returning salmon. The migration is counted by using two fish wheels near the US/Canada border to temporarily catch and tag the fish. Population estimates are based on the number of tags returned by fishers.
- How can the salmon find their way from the Pacific hundreds of miles to the very streambed where they hatched? Many scientists think they navigate by smell, known as *olfactory homing instinct*.

The Rise and Fall of Salmon Populations

People used dried salmon to feed themselves, their dogs and as an important trade item. Nonetheless, people could not always be certain of catching all the fish they needed and in some years the run was less abundant than others. The size of the fish run is affected by various factors, both human and environmental. At the end of the 19th century, non-native fishers began competing for good fishing sites along the river. Large canneries set up at the mouth of the Yukon River early in the 20th century meant that a much larger number of fish were intercepted early in their migratory path. Large sled dog teams and the establishment of fur farming in the 1910s created a greater demand for salmon to feed dogs, mink and foxes. Over the years, there were more people – native and non-native – fishing on the river using more efficient methods such as fish wheels and gill nets, limiting the numbers of salmon that were able to escape and reproduce.

Even before these events, however, there are reports of times when there were very few fish. Extremely cold periods may have caused a drop in salmon numbers. High water levels and obstacles such as logjams make it harder for fish to swim upstream. Scientists also speculate that global warming may be affecting the migration with salmon bypassing the mouth of the Yukon to seek colder waters further up the north coast of Yukon and Alaska. During an unusually hot summer in 1998, the salmon run was so small – the lowest Chinook run since 1952 – that entire Alaskan communities needed emergency food supplies to get through the winter and feed their sled dogs.



Adult Chinook. From *Exploring the Whitehorse Fishway: A Guide to the Travels of the Yukon River Chinook Salmon*. Booklet prepared for Yukon Energy Corporation.

Fishery Management

Although both the Yukon and Alaska began regulating the salmon fishery in the early 1900s, the approaches have changed over the years. By the 1920s, both governments recognized the difference between commercial and subsistence fishers, and the need for different regulations for each. Both governments set a high priority on the aboriginal fishery. If salmon returns are low, limits are first placed on the commercial fishery, then on domestic and sport fishing, and lastly on aboriginal fishers.

Today the management of Yukon River salmon fishing is a difficult and sometimes controversial issue. It requires international agreements between the United States and Canada as well as recognition of land claim agreements. Both Canadian and Alaskan governments consult with First Nations people.

In the Yukon, the federal Department of Fisheries and Oceans (DFO) is ultimately responsible for the management of Yukon salmon. Since 1995 they have worked with the Yukon Salmon Sub-Committee, established under Yukon Land Claim Umbrella Final Agreement. The committee, made up of First Nations and non-First Nation members, represents all Yukoners and makes recommendations on all matters relating to salmon. They also represent the Yukon in Pacific Salmon Treaty negotiations between Canada and the United States.

One of the key tools for managing the salmon stocks is the traditional knowledge of the First Nation elders.



RELATED STORIES

- Fish Camp Stories
- Yukon River Hydrology

WAYS TO TELL THE STORY

Displays

- Maps showing the range of the salmon and identifying some of the salmon spawning areas.

Photos & Graphics

- Salmon photos, or perhaps a series of drawings showing the life cycle of the salmon.
- Photos or drawings showing the differences between chum and Chinook salmon, the development of the hooked jaw in males during the spawning phase and colour changes in the fish during the upriver migration.

Albums

- With historic and contemporary photos, maps, and stories about salmon. These can be either used as a resource for guides and interpreters or designed to show visitors.

Show and Tell / Props

- Salmon mounts or replicas to scale. (see also suggestions for “Fish Camp Stories”)

Talks

- Tell about the life cycle of the salmon & its significance to the Tr’ondëk Hwëch’in.
- There are lots of interesting fishy facts that can be told about the salmon, their extraordinary navigational ability, their low survival rate and their great importance in several stages of the food chain.

FURTHER RESOURCES

Maps & Plans

- a map of the Yukon and Alaska showing the range of the salmon migration.
- a map showing fish camps and spawning areas in the Dawson region.
- a map of language groups of Yukon and Alaska to illustrate the many First Nations people who fish salmon.

Photos

- see previous section, "Ways to Tell the Story."

Publications & Reports

Canada, Dept. of Environment

- "Your Yukon" is a series of columns about the Yukon environment published in the *Yukon News* and available on the following website:
www.taiga.net/yourYukon/previous
- 2001 Column 245, "Ancient salmon hold clues to cycles."
 Column 243, "Day one at the salmon hatchery."
- 2000 Column 205, "No clean bill of health for Yukon salmon."
 Column 187, "Pacific salmon heading north."
- 1999 Column 113, "Winter ways of salmon."
 1998 Column 90, "Ways of salmon remain a mystery."
 1997 Column 32, "Hatchery an insurance policy for Yukon salmon."
 Column 44, "Keeping tabs on salmon tricky."

Canada, Dept. of Fisheries & Oceans

- c.1980s *The Incredible Salmonids*. (available free from DFO. Contact by telephone (604) 666-0384 or email,
pacdfocommunication@pac.dfo-mpo.gc.ca)

CNN.com - Nature

- 2000 "Salmon shortage prompts aid effort for Alaska dogs," October 4, 2000. Web posted at: 2:55 PM EDT (1855 GMT)

Cox, Jody

- 2000 *The Upper Yukon River, the Salmon and the People: A History of the Salmon Fisheries*. MS Prepared for Parks Canada, the U.S. Parks Service and the Tr'ondëk Hwëch'in.

Dobrowolsky, Helene

- 2001 *Hammerstones: A History of Tr'ochëk, Moosehide and the Tr'ondëk Hwëch'in*. Draft ms. prepared for

the Tr'ondëk Hwëch'in and Parks Canada.

- 2000 *Tr'ochëk / Klondike City Bibliography*. (a compilation of sources relating to the Tr'ochëk / Lousetown / Klondike City settlements and the Tr'ondëk Hwëch'in First Nation, most available from Yukon Archives). Revised: May 2000

Duncan, Jake

- 1997 *Summary of Streams in the Tr'ondëk Hwëch'in Traditional Area: A Search for Candidate Streams to Support a Program Based on a Klondike Area Central Incubation/Outplanting Facility*. (This report contains a section of excerpts from elder interviews regarding the First Nation salmon fishery.)

Karlinsky, Neal

- 2000 "Fish Shortage Spells Doom for Sled Dogs." ABC News.com

Midnight Arts & K-L Services

- 2001 *Exploring the Whitehorse Fishway: A Guide to the Travels of the Yukon River Chinook Salmon*. Booklet prepared for Yukon Energy Corporation.

Walker, Karen

- 1999 *Kings of the River*. Whitehorse, Yukon Fish and Game Association.

Tr'ondëk Hwëch'in

- 1999/2000 Life on the River Oral History Project, tapes and transcripts. Interviews with Han elders conducted by Georgette McLeod, Myste Anderson, Rachel Olsen, Ingrid Kitsch.

Yukon, Dept. of Renewable Resources

- 2000 *Yukon State of the Environment Report, 1999*. Government of Yukon with Canada, Council of Yukon First Nations, City of Whitehorse and Raven Recycling.
 (pp. 69-75. This includes many helpful charts re Alaskan and Canadian catches of Chinook, Estimated Yukon Salmon Harvest, including First Nation catch, etc.)

