

## Green Scene: Where are the eulachon?

by *Elaine Golds*

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**While the wildlife spectacle that once accompanied eulachon spawning is long gone, a few eulachon still return to Kwikwetlem First Nations fishing territory at the mouth of the Coquitlam River. Photo: Watershed Watch Salmon Society.**

It is said that all great civilizations depend on oil. I am not talking about the kind of oil the Harper government is currently promoting but rather the more fundamental oil, i.e., the critical food that nourishes our brains, enhances the flavour of our foods, fuels our bodies and, once, provided a little light to get us through the darkest nights. The earliest societies around the Mediterranean were especially blessed with the gift of olive oil while the peoples of northern Europe depended on less healthy animal sources for lard, tallow and butter. The ancient civilizations of China relied on soy bean oil while the Inca and earlier civilizations in South America depended on oil from the anchoveta, a small but abundant oily fish which continues to thrive in the cold Humboldt current which sweeps up from the Antarctic along the west coast of South America. Like their relatives in South America, the First Nations along our Pacific north coast once relied on oil obtained from the eulachon, alternatively spelled oolichan, and also known as candle fish for its high oil content.

The oil obtained from eulachon was so vital that it became an important trading commodity for coastal nations who carried this oil along so-called grease trails to the interior. Had it not been for these grease trails and help from First Nations, the first European, Alexander MacKenzie, may never have been able to find his way to the Pacific in 1793. It seems we all owe a lot to this small oil-rich fish which was once abundant along the Pacific coast from northern California to the southern Bering Sea in Alaska.

Eulachon are members of the smelt family rather than being a herring or anchovy. They are the most oil-rich of all these small fish with a fat content that can approach 20%. They share some features with salmon such as having an adipose fin, spending most of their life in salt water and, like salmon, returning to spawn and die in fresh water. In the Fraser River, eulachon mature at three years of age.

Unlike most salmon, eulachon spawn in the spring and require river systems which have a marked freshet each spring, i.e., a pulse of fresh water which arises from rapidly melting snow and glacial ice. Such rivers include the Columbia in the USA and the Fraser, Skeena, Nass and Klinaklini in BC. There are no rivers which support eulachon on Vancouver Island. Once there were 38 rivers along the BC coast with eulachon runs but many of these have now vanished; those that remain are in deep trouble. All along the eulachon rivers of BC, First Nations depended on this vital boost to their food supply at the end of the winter when other food was scarce. Sometimes, for this reason, they called the eulachon their salvation fish.

It didn't take long for European settlers to exploit this valuable fish. Commercial fisheries began in 1877; until 1912, eulachon were the fifth most important commercial fish species along this coast. Commercial fishing for eulachon on the Fraser River did not cease until 1995, far too long after the run had diminished over decades. Once eulachon ascended as far as Chilliwack to spawn wherever shallow waters offered the coarse sand and pebble needed for spawning. It probably didn't help that such areas were often used for log booms or that the shallow Fraser River was continually dredged to facilitate boat traffic. Their slightly adhesive eggs are thought to be carried downstream by currents in a process called "tumble incubation". This probably means a successful incubation would depend on considerable suitable habitat along shallow river bottoms.

The abundant eulachon supplied more than just First Nations; they were also a vital link in the ecosystem which sustained many other animals. The arrival of the eulachon in late March created a feeding frenzy for thousands of gulls, eagles, diving ducks, seals, sea lions and even whales. The eulachon would spawn throughout April and early May which provided a bonanza of food when many animals were engaged in the annual rearing of their young. In the early 1990s, I remember being amazed at the spectacle of so many fish-eating birds, seals and sea lions in the Fraser just off the mouth of the Coquitlam River. The great blue herons which once nested at the mouth of the Coquitlam would have also depended on these eulachon to feed their nestlings. Eulachon larvae hatch in about 3-4 weeks and are then flushed downstream by forceful river flows.

Fraser River eulachon appear to spend most of their time in the marine environment off the west coast of Vancouver Island where they mix with the equally diminished Columbia River runs. There, they are often caught as bycatch by shrimp trawlers. Little was done about this tremendous waste until DFO finally implemented bycatch reduction measures in the mid 1990s which appear to be somewhat successful but also came far too late. With a run which has now declined to as little as 2% of historic levels, allowing any losses through bycatch seems unwise. In Queen Charlotte Sound, the shrimp fishery was closed to protect the northern eulachon runs but, apparently, the Fraser River run did not merit such action. However, dredging in the Fraser is now prohibited during eulachon spawning. The federal government has been considering listing the eulachon as a species at risk. COSEWIC, a committee of scientists which makes recommendations to the government, listed them as endangered in 2011.

While a few eulachon still spawn in the lower Fraser, they are much diminished from early days. Once a sure sign of spring's arrival, the return of eulachon to the Fraser has now been removed from the magnificent repertoire that is the full ritual of spring...we are all much diminished by such a loss.