



Bob Seward on the Fraser River BC



A 30 Lb Fraser King being quickly released

My first King of 35Lb on the Fraser being gently returned by our guide Randy



Having fished this majestic river a few years ago I could hardly believe the article below recently sent to me by Vincent Duigan. When stocks collapse in rivers of this magnitude the world has to take note.

Climate change is one of the most important factors in the decline of the salmon stocks.

I went to a very interesting lecture a few weeks ago about the decline of the Fraser River sockeye salmon stocks, presented by [Dr. Glenn Crossin](#) from the University of British Columbia. His studies of the Fraser River sockeye implicate climate change as one of the most important factors in their almost complete collapse this year. Ten million salmon that were expected to return to the Fraser River, simply did not show up at all. This disastrous collapse has caused the Canadian Government to launch a public inquiry in the hopes that we will not have a repeat of the cod fishery collapse of the early '90s off the coast of Newfoundland and Labrador.

The Fraser River does not have fish farms, so for this stock at least, they are not to blame for the decline. It is known that the salmon smolts made it safely out to the ocean. Dr. Crossin's research points to climate change being a key factor, as the warmer the water, the harder it is for the fish to survive. River water below 18C is tolerable to sockeye, but as the water warms beyond that mortality rates increase. However, river water temperatures were not the problem for the 10 million fish that never even made it back into the river system at all. Something affected the salmon during the time they were in the ocean.

It is known that the warmer ocean waters are forcing the salmon further north where the water is cooler and more habitable to them. Dr. Crossin's research suggests that this new more northern migration is affecting the hormone systems of the fish. The further north one goes during the summer months, the longer the daytime light. Near Prince Rupert at the summer solstice, the sun sets at around 11pm. Further north is the land of the midnight sun. As I have

suggested in multiple posts previously, the light/ dark cycle is a strong hormone regulator in living organisms including humans, and when a light/dark cycle is altered there will be hormonal consequences. For salmon, all that extra daylight causes an increase in testosterone levels, which makes them want to return to the rivers to spawn. The longer the length of daytime light, the higher the testosterone levels, the more urgent the drive to spawn.

So, the sockeye are starting their migration south back to the spawning rivers early, while the waters are still warmer. In 2006, Dr. Crossin tagged 195 sockeye salmon with acoustic transmitters in the north off the west coast of the Queen Charlottes in order to follow their journey back south. But in July the Canadian Department of Fisheries and Oceans (DFO) opened a salmon fishery at the north end of Vancouver Island, and only 12 (6%) of his 195 tagged fish made it back to the Strait of Georgia. It is probably a stretch to say that that fishery caught 94% of all the returning fish at that time, but clearly that fishery had a big impact.

Before 1995, the late-run sockeye would return to the Strait of Georgia (Salish Sea) in August like clockwork and spend about a month to 6 weeks there before heading into the river systems in late September to mid October when the water was cooler. But since 1995, between 60 and 90% are not waiting in the Strait, and instead are heading directly into the rivers in August while the water is at its hottest, probably because of their high testosterone levels and their accelerated drive to spawn. High water temperatures are resulting in high fish mortality before they can reach the spawning grounds. It is predicted that if nothing is done to slow down climate change, summer river temperatures will hit 25C soon, which will be lethal to all Sockeye salmon in the river at the time.

So, between the warmer ocean waters forcing the salmon to migrate further north impacting their hormonal system and making them return to spawn earlier in the year, mixed with an ill-timed fishery and/or overfishing and who knows what else, the result was very few salmon making it back to the Fraser estuary this year. Depending upon the salmon stock we are talking about, climate change, over-fishing, predation, the sea lice problem, the damming of rivers for hydro-electric power, pollution, chemicals and medical drug residues from sewage finding its way into the rivers, and the break-outs of farmed Atlantic salmon, wild Pacific salmon have a lot to contend with if they are going to survive.

Is ocean fishing as sustainable as it is claimed to be? I'm not so sure, because one has no idea what salmon stock is affected by catching a salmon in the ocean. If that salmon is destined for a healthy Alaskan river, perhaps there is little or no harm, but if that salmon is destined for the Fraser, harm is clearly done even if it is caught in the open ocean north of Vancouver Island.

So I ask again. Should we be eating salmon at all? I don't think we should be eating any sockeye. These fish need all the breaks they can get right now, as it is looking like climate change is forcing them onto the endangered list without any help from humans fishing them. Chinook and Coho numbers are also declining markedly, perhaps for the same reasons. Pink salmon seem to be the only bright spot, so if we want a salmon dinner, pink may be the only sustainable type of salmon to eat.

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