



Backgrounder # 1

Sept.28 2005

Pink Salmon and Sea Lice Chronology of events

Scientific Evidence:

Peer-reviewed and published research done in the Broughton Archipelago, to date, supports the conclusion that fish farms are the cause of the abnormally high level of sea lice infecting juvenile wild salmon. Sampling of out-migrating pink and chum salmon has clearly demonstrated higher lice infestation in areas close to fish farms. These B.C. findings are consistent with research undertaken near fish farms in Europe

Pink Salmon:

Pink salmon are unique in that they have a two-year life span. Their life begins as an egg in the fall and concludes two years later as the returning adult fish head up the rivers to spawn. This life cycle creates two separate spawning stocks of juveniles; odd and even year runs. In the Broughton Archipelago, juvenile pink and chum salmon start to pass by the active salmon farms in early spring (March) to make their way to sea. At this point they are only weeks old, weighing an average of 0.37 gram, or as small as a slivered almond. They spend three to four months feeding in the waters of the Broughton preparing to head out to sea. The combination of their extremely small size and the long duration of their stay in the salt waters of the region makes them highly vulnerable to sea lice larvae coming from the infestations on the farms. During the fall of the following year the surviving adult salmon return to their native rivers to spawn.

Fallow Route:

Fallowing a farm means leaving it empty of fish for a period of time. A fallow route is the term used to describe a wild salmon migration route where all the farms have been fallowed, thereby providing a safe passage for the wild salmon. The out migration period takes place in the spring and therefore the farms must be fallow from January to June.

CHRONOLOGY OF EVENTS

2001 (spring)-98% of juvenile salmon migrating out of the Broughton Archipelago were infected with sea-lice with an average of 12 lice per fish. (Morton and Williams 2003 Canadian Field Naturalist). Surviving fish will return as adults in the fall of 2002.

2002 (spring)- In the Broughton 92% of pink and chum juveniles were infected with an average of 7 sea lice per fish. Elsewhere on the BC coast, sea lice were rare on juvenile salmon (Morton et al 2004 Canadian Journal of Fisheries and Aquatic Science).

2002 (fall)- Only 1% of 2001 Broughton juvenile pink salmon returned to spawn and the commercial fishery was cancelled. As a result, the Pacific Fisheries Resource Conservation Council (PFRCC), a federally appointed body, recommended all Broughton

David Suzuki Foundation
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salmon farms be emptied of fish, or fallowed during the out-migration of the juveniles for the following year of 2003 (www.fish.bc.ca).

2003 (spring) – On the recommendation of the PFRCC, government mandated the creation of a partial fallow along the main juvenile salmon migration route identified by CAAR researcher Alexandra Morton. This action involved changing plans for only one farm. Two farms along the route remained stocked. Nonetheless, sea lice infection of juvenile wild salmon dropped significantly with only 34% of fish infected.

2003 (fall)- Only 10 % of the salmon that went to sea on the spring of 2002 returned to spawn.

2004 (spring) – Salmon farms are restocked and sea lice return. 95% of juvenile salmon are infected with an average of ten lice per fish (Morton, Routledge and Williams 2005 North American Journal of Fisheries Management)

2004(fall) – When salmon that went to sea during the fallow period in 2003 returned to spawn, DFO reported a 37% increase in pink salmon returns, suggesting the establishment of a safe migration route through fallowing the fish farms was a success.

2005 (fall) - The return of the fish that went to sea through the area of the salmon farms in 2004 (when the salmon farms were stocked with fish and sea-lice infestation rates on wild juvenile pinks were at 95%) are tracking as dismally low. Many rivers are well below critical levels required for continuation of the stock. The highest returns are in the Glendale River, with approximately 120,000 fish returning to date. However this river had over 1 million returns 2 cycles ago, meaning this river is at a fraction of its potential size. DFO's final counts are not yet available, but early returns indicate another stock failure. These returns are not consistent with the high pink returns in many rivers from Alaska to southern British Columbia.

A fallow route, similar to 2003, clearly needs to be enforced yearly during the out-migration period. This would ensure that the small number of juvenile salmon from this year's run, as well as future runs of wild salmon, have a chance for survival. The creation of a safe migration route through fallowing is, however, an interim solution. A transition to closed containment is essential to address the myriad issues associated with open net-cage aquaculture over the long term.

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