

SALMON

## Campbell's doomed policies on fish farming will be a tough sell to voters

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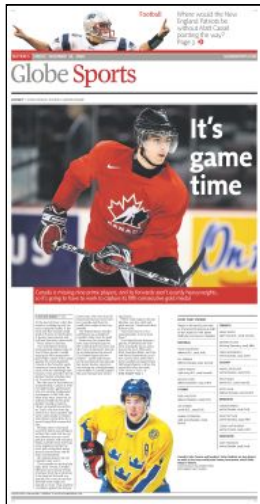
VANCOUVER -- Will 2009 be the year that salmon become a pivotal political issue in British Columbia?

It is shaping up to look that way, as a large number of groups are focusing on the collapse of salmon stocks on the West Coast as the most important environmental issue of the year.

With killer whale populations dropping in the Strait of Georgia, in a large part because of a lack of salmon to feed on, with grizzly bears starving because salmon spawning runs have failed to materialize, and with sports, commercial and native fisheries largely closed coast-wide, there can be little doubt that B.C. is experiencing an environmental crisis.


Salmon are a federal issue and as such have not played a key role in provincial elections before.

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But that will change this spring when Premier Gordon Campbell goes looking for his third mandate.

The salmon crisis will come to rest at Mr. Campbell's feet because of the way his government has embraced salmon farming, promoting an industry that scientific research is increasingly blaming for damaging wild stocks by causing sea lice epidemics.

Mr. Campbell has made a practice of turning to science when faced with complex environmental problems. But when it comes to fish farming, he is blind to a growing body of scientific evidence that shows raising salmon in open-net pens is environmentally a very risky business.

The fish-farming industry has argued it can contain the sea-lice problem through the use of chemicals such as emamectin benzoate, marketed under the trade name Slice{" which is extremely effective in killing the parasites.

Salmon-farming advocates argue that with the use of such controls fish farming is essentially no different than land-based farming. Raising millions of chickens in confined cages is the same as raising millions of salmon in pens, they say.

But a recent essay by Neil Frazer of the School of Ocean and Earth Science at the University of Hawaii, argues that the comparison is dead wrong.

"Sea lice epidemics, together with recently documented population-level declines of wild salmon in areas of sea-cage farming, are a reminder that sea-cage aquaculture is fundamentally different from terrestrial animal culture," Dr. Frazer states in the journal *Conservation Biology*.

"The difference is that sea cages protect farm fish from the usual pathogen-control mechanisms of nature, such as predators, but not from the pathogens themselves. A sea cage thus becomes an unintended pathogen factory."

Dr. Frazer explains how the natural spawning cycle separates wild adult salmon from emerging young salmon, thereby protecting the juvenile fish from coming into contact with mature fish that might be carrying sea lice.

Fish farms, on the other hand, ensure that millions of adult fish, which carry and shed lice, are encountered by migrating young fish.

The farms not only disrupt the natural system but in effect set a sea-lice trap for the young salmon, infecting them at their most vulnerable life stage.

Dr. Frazer states that by medicating farm fish, by shortening farm growing cycles and by keeping stock levels low, fish farmers could reduce the impact of sea lice on wild stocks.

But he says that as long as fish farms are located on wild salmon migration routes, they will infect young wild salmon at an unnatural rate, making the eventual collapse of wild stocks a mathematical certainty.

"Declines [of wild stocks] can be avoided only by ensuring that wild fish do not share water with farmed fish, either by locating sea cages very far from wild fish or through the use of closed-containment aquaculture systems," Dr. Frazer says.

In other words, the current government policy dooms wild salmon on the B.C. coast.

With that kind of science against him, Mr. Campbell is going to have a hard time selling his government's fish-farm policies to voters in the spring.

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