

Pacific Salmon Fall to Sea Lice

By Peter McMullan

As a four-year-old he remembers cutting his angling teeth on chub minnows in Ottawa's Green's Creek. Today Eric Hobson travels extensively in pursuit of tarpon and taimen, steelhead and chinook salmon. More importantly, in terms of the very survival of some of Canada's most important fisheries, he has the desire, the determination and the business savvy to challenge the commercial interests and the politicians that continue to turn a blind eye to a developing environmental disaster, the open net-cage salmon farming industry, and associated proliferation of billions of lethal sea lice, that blight the coast of British Columbia, Canada's most westerly province.

Hobson is a professional engineer from Calgary, Alberta and a partner in Northridge Canada Inc, a private investment company. He also happens to be an avid fisherman, an independent investor and a director of numerous private, public and charitable organizations. As an active philanthropist, he founded and leads the Save Our Salmon Initiative, or SOS, an organization dedicated to protecting British Columbia's wild salmon stocks

and marine environment from negative impacts linked directly to the farming of Atlantic salmon in open-net ocean pens.

It's a situation all too familiar to anglers half a world away. They already have long-standing concerns over the effects of fish farms on past, present and future stocks of wild Atlantic salmon, as well as sea trout, in Scotland, Ireland, England and Norway and on the same species of salmon in some eastern Canadian rivers. But, until

comparatively recently, sports and indeed commercial salmon fishermen on Canada's Pacific coast were, for the most part, largely unaware of the growing threat.

That's no longer the case. Now fish farming promises to have a greatly increased, and perhaps unwelcome public profile as British Columbians prepare for a provincial election in May of this year. The present Liberal government and its Premier, Gordon Campbell,

The tiny pink salmon smolts, with an average length of 3.5 cm compared to an Atlantic salmon smolt at 14 cm and sea trout smolt at 20 cm, suffer terribly from sea lice predation as they migrate past fish farm locations. Photo by Alexandra Morton



stand accused of downplaying the sea lice menace; the opposition New Democrat Party is expected to see this as another opportunity to put pressure on their political rivals. Public opinion, and with it votes, can be influenced for British Columbians, and indeed most Canadians, definitely care about environmental issues.

In a recent article in Canada's nationally circulated Globe and Mail newspaper, Mark Hume, a well-respected and knowledgeable commentator on fishery matters, wrote: "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 salmon stocks by causing sea lice epidemics." The headline on the story read: "Campbell's doomed policies on fish farming will be tough sell to voters".

Eric Hobson was alerted to the problem four years ago while on a steelhead fly-fishing trip to the Babine River in north central British Columbia.

"Pierce Clegg, who was my guide and who owns the camp, mentioned one night how plans were being made to license salmon farms on the approaches to the Skeena River," he recalls. Clegg was greatly concerned about what this would

mean to the Skeena system's salmon and steelhead runs and lent Hobson a copy of *A Stain Upon the Sea* (Harbour Publishing, www.harbourpublishing.com), a book about the west coast salmon farming controversy featuring significant and highly critical contributions by six leading experts, among them Alexandra Morton, www.raincoastresearch.org. She is the biologist and researcher who has done much in recent years to highlight the threat posed by fish farms to British Columbia's wild salmon, in particular juvenile pink and chum, and to other species as well.

In Hobson's own words: "Reading it made me very angry



Sea lice are commonly found on mature Atlantic salmon but drop off soon after they enter fresh water. Photo by Toni Karuvaara



Depleted pink salmon runs deny grizzly bears a vital food source. Photo by Alexandra Morton.

and the more I read in my cabin the angrier I became." From that campfire conversation and late night study session sprang his determination to become involved. Now he is the Director and prime mover behind Save Our Salmon, www.saveoursalmon.ca, a collaborative organization working to create a strategic approach to sustainable aquaculture in British Columbia. The Community Opportunity Foundation of Alberta, which Hobson co-founded in 1999, is overseeing the SOS initiative and has already provided \$1.5 million for science, economic and legal research.

Hobson estimates SOS will spend another \$400,000 this year

to enable it to continue scientific fact-finding and to maintain its government and public education programs. And, while he identifies the ongoing sea lice problem as an environmental crisis, he also sees it as an opportunity for the British Columbia government to move beyond the present impasse to take a leadership role in finding and implementing lasting solutions.

"We have asked for a face to face meeting with Premier Campbell to offer to work with his government by sharing our knowledge and the strategies we have developed. We have established an influential Solutions Advisory Committee and want to see British Columbia

assume a global leadership position in developing a sustainable salmon aquaculture industry, one that we believe will have to be based on closed containment technology rather than on open net-cages," he says.

To complicate matters there is no one jurisdiction responsible for regulating all aspects of the, in the main, foreign-owned (80% Norwegian) industry. The provincial Ministry of Agriculture and Lands issues the fish farm licenses - and there are more than 80 of them strung along B.C.'s 27,000 kilometer Pacific Ocean coastline - while the federal government's Department of Fisheries and

➔ page 34



The female sea louse carries her eggs in what look like two trailing tails. A few hundred eggs are produced each time and up to six broods in a lifetime. Photo by Alexandra Morton

Follow the Migratory Routes, Change the Regulatory System and Develop Closed Containment Salmon Farming.

Open net-cage salmon farming is harming wild Pacific salmon. BRITISH COLUMBIA CAN DO BETTER.

Many of British Columbia's once teeming wild salmon runs are dwindling into extinction. Loss of habitat, over fishing and climate change pose almost insurmountable challenges to wild salmon.

But the most alarming threat - with a devastating known impact on wild salmon - is the proliferation of open net-cage salmon farms along the B.C. coast.

Without salmon, wildlife like the grizzly bear, the sea lion, the bald eagle and the Orca will go hungry; the \$1.5 billion wilderness tourism industry will see revenues plummet; First Nation communities will witness a vital part of their livelihood and culture fade away. We will all suffer if wild salmon disappear.

It is now time for change. The Save Our Salmon Initiative is working to help British Columbia build a more technologically advanced and viable salmon aquaculture industry - one that is also environmentally sustainable AND protects wild salmon.

Everything depends on the wild salmon . . . survival of the wild salmon depends on us.

Support our mission to protect B.C.'s wild Pacific salmon. Visit us at www.saveoursalmon.ca

This poster is being used to promote the Save Our Salmon Initiative campaign against fish farms in British Columbia. SOS photo

Alexandra Morton's original research was focused on the killer whales, also known as orcas, in the Broughton Archipelago, an isolated, wilderness area of winding and protected sea inlets, forested islands, little-known rivers, soaring mountains and abundant wildlife located between the north eastern coast of Vancouver Island and the mainland. As the local runs of pink salmon, one of the five species of Pacific salmon, went into serious decline so grew an awareness of what was at stake – the very survival of a species critical to all aspects of the coastal life cycle. Subsequent research has shown that the problem extends beyond the Broughton to other areas of the coast where open net-cage salmon farms exist in high densities.

Without salmon the First Nations people, who have been living in the Broughton area since long before the arrival of the white man, more than 200 years ago, are denied an essential, historic food source. So too are the black and grizzly bears that depend on catching the salmon to build up strength and weight prior to winter hibernation, when their cubs are born.

Sports and commercial fishing interests are being affected, as is wilderness tourism, an annual \$1.5 billion business built on providing opportunities and accommodation for visitors to come and observe



SOS Director Eric Hobson and his wife Susan enjoy a successful day's fishing for Pacific Salmon off the coast of British Columbia.

SOS photo

bears, and especially the majestic grizzlies, in their natural habitat in an environmentally sensitive manner. Tourism is a multi-billion dollar contributor to the B.C. economy, one that could suffer a serious setback in the event of a widespread salmon run collapse.

In the past year, one marked by generally poor returns of all the Pacific salmon species to British Columbia's rivers, a decline has also been reported in the numbers and behaviour of the majestic orca whales, a prime feature of the province's seascape. Chinook salmon are a staple of the orcas' diet and even a temporary decrease in their numbers means trouble for the coastal whale population.

Without exception Pacific salmon die after spawning. In

normal circumstances, the nutrients derived from the dead fish, and strong runs of the most abundant species can number up to millions, make for healthy rivers and riparian forests. These, in turn, support the next generation as they progress from egg to alevin, to fry, fingerling and finally to the smolt stage when they migrate from fresh to salt water. That is when they become vulnerable to sea lice predation.

It's little wonder that Eric Hobson is so concerned or that his group is winning the support of a growing number of organizations and individuals.

His hope is that the political leaders, both federal and provincial, will come to recognize the gravity of the situation sooner rather than later

and will then take the necessary steps to address the problem. A high priority would be an early decision, whether by direction or mutual agreement, to fallow or clear all farms located near river estuaries or close to routes used each spring by migrating juvenile salmon. Hobson is adamant that no amount of habitat restoration and enhancement will bring back wild salmon if juveniles do not have unobstructed access to the open ocean.

With each farm discharging its untreated waste directly into the ocean, as Hobson says 'like a plume from a big smokestack', in daily volumes on the scale of a town of 20,000 residents, the associated problems go beyond the presence of sea lice. For example:



British Columbia is not the only Canadian province with concerns about fish farms. The government of Newfoundland and Labrador, on Canada's Atlantic coast, has been criticized in the 2008 General Report of its own Auditor General, John L. Noseworthy. Fish farm escapees rather than sea lice are the main issue.

The Auditor General's Report points to inadequate aquaculture facilities, insufficient inspections of aquaculture sites, problems with many aspects of cage emplacement, substandard fish handling standards, a decline in the number of site inspections, outdated industry codes of practices and an inadequate Cage System Audit Report with some cage nets failing a strength test.

In a joint backgrounder from the Atlantic Salmon Federation (ASF) and the Salmonid Council of Newfoundland and Labrador, the two organizations say the provincial government has failed to update and complete fish farm management plans and codes of practice.

Don Ivany, Regional Director of the ASF, comments: "We hope that the provincial government heeds a report by the Auditor General of Newfoundland and Labrador, outlining deficiencies in the present management of this industry, and take steps to improve. This industry can have serious negative effects on the province's wild salmon populations.

"It is especially discouraging that the Code of Containment is deficient as lack of good containment leads to break up of cages and escapes of farmed salmon into the wild. This results in interactions with wild salmon in nearby salmon rivers and threatens the survival of these fish that are already in decline."

"We urge the province to provide adequate infrastructure to support current and future expansion of the industry. It must act quickly to finalize an aquaculture health management plan, and implement a comprehensive inspection system to discourage flaunting of the rules, which the Auditor General indicates presently lack the power of effective legislation," Ivany concludes.

"We estimate there are 30 million Atlantic salmon in open net pens in B.C. and the industry relies on a chemical called SLICE to kill sea lice. It has a limited life span and we know that the lice can, in time, build up a resistance to it."

Other issues associated with fish farms include the considerable disparity between the volume of fish-based feed required to raise a much lesser weight of salmon; mortalities suffered by seals and sea lions when they become entangled in nets; the use of chemicals to maintain the health of the farm salmon and even the actual culinary quality of the end product on the consumers' table. And then there are the escapees – about 90,000 each year between 1987 and 2001 and another 19,000 in each of 2006 and 2007.

Seven years ago, when Ms Morton first highlighted the sea lice infestation problem, the focus was on the sudden decline of pink salmon runs in the Broughton Archipelago. In 2002 only 147,000 fish came back to spawn when 3.6 million had been expected. Late last year SOS, citing government counts, reported pink salmon returns to five key indicator streams in the Broughton area had fallen by up to 90% and constituted only about 2% of the abundance in 2000.

"In Glendale Creek, a prime indicator stream, only 15,000 spawners were counted compared to 182,000 last year (2007)," the most recent SOS Update reports. Morton and colleagues co-authored a paper in *Science* magazine reporting that if sea lice damage continues, the Broughton pinks will be extinct in just six more years. This year's numbers are right on this trajectory to extinction

Ms Morton has expanded her

research to show how sea lice are infecting sockeye salmon smolts on the Fraser River migration route as they pass through the Discovery Islands area, south of the Broughton. And she has confirmed sea lice can target young herring, a prime food source for salmon, and that the problem has spread to Clayoquot, another fish farm location on the west coast of Vancouver Island, threatening juvenile chinook salmon. Previously abundant Fraser River sockeye runs have not met expectations in recent years; one wonders why?

At the same time she has launched a series of initiatives designed to keep the issue very much in the public eye. These include an ongoing court challenge, an 'Adopt a Fry' drive and a letter writing campaign asking supporters to flood Premier Campbell's mail with postcards cut out in the shape of a salmon demanding the removal of fish farms from wild salmon migration routes.

In a recent SOS presentation, Chief Bob Chamberlin, of the Kwicksutaineuk/Ah-Kwa-Mish First Nation, from the Broughton, spoke movingly of the predicament facing his people. "What is happening to our pink and chum salmon is the key. We are an isolated community living in poverty. For the past two years there have been no food fish to catch in our area and that's unheard of." And he added: "Can you imagine not being able to teach your grandson to fish?"

Their concerns made major news headlines when they announced they were going ahead with legal action against the Government of British Columbia. The class action law suit, launched in Vancouver on February 4, calls on the government to address the harmful impacts

of open net-pen salmon farms on wild salmon in the traditional territories of the Kwicksutaineuk/Ah-Kwa-Mish First Nation.

At the same presentation, one of a series of four arranged for SOS sponsors and potential supporters, ecologist Dr Craig Orr pointed out that Atlantic salmon are the farm fish of choice and described them as "the cows of the salmon world, very docile and ideal to raise in farms." With some farms holding upwards of 750,000 and more mature fish, he commented that this would represent a mass equivalent in size to 500 Asian bull elephants.

Orr, the Executive Director of the Watershed Watch Salmon Society, www.watershed-watch.org has written extensively on the subject and it's worth quoting from a feature of his that appeared in the September 2007 issue of *The Osprey*, the newsletter of the Steelhead Committee of the Federation of Fly Fishers under the heading 'The politics of wild salmon: a brief update on the mess in British Columbia.'

He writes: ".....We're talking adult mess with all the trimmings: science trumped by myopic ideology and communications spin; a calculated campaign to maintain the *status quo* using smothering uncertainty and massive fortification of denial; the failure to learn and apply lessons; personal attacks and dirty tricks; and change so stupefying glacial, it sets new standards for betrayal of public and ecological values."

"All this Mess is firmly rooted in the recent and massive expansion of salmon aquaculture in the world's coastal waters – waters still harboring a priceless-but-fragile legacy of wild salmon. Some

1,323,000 tonnes of farmed salmon (2005 figures) are now grown annually in the world, including a 'modest' 67,000 tonnes in the coastal waters of British Columbia."

According to the B.C. Salmon Farmers Association, total production in 2007 was 80,000 tonnes with 85% going to export for an annual value of \$900 million. The industry, not surprisingly, vigorously disputes all claims that it bears responsibility for the sea lice problem and points to a worldwide decline in salmon runs which it attributes to a variety of causes. These range from ocean warming and climate change to urbanization, logging, fishing and mining. All very convenient but hardly calculated to alleviate mounting concerns.

As Chief Chamberlin puts it: "What is happening is not consistent with good husbandry of the environment yet the industry and the provincial government continue with what appears to me to be a policy of deny, delay and distract."

No one is more frustrated over the present situation, and its implications, than Eric Hobson. "Of course there are all sorts of moving parts involved, with climate change an example," he says, adding: "Why aren't we dealing with the problems that we can deal with quickly? We can turn this problem into an opportunity and it's totally under our control. That's the key. Everyone wins so why not do it?"

For British Columbians it's a most pertinent question and one likely to be asked more and more frequently leading up to the upcoming provincial election. Without doubt it's one the politicians will be expected to answer, both soon and with positive actions. ■