

Can we save our salmon?

(First in a series)

We're losing a desperate race against time and long odds and government indifference

by Deborah Carr

Spring's sunshine warms my face as my kayak drifts down New Brunswick's Miramichi River. I pass riffles and salmon pools, downed trees, submerged rocks, and gravelly shallows. Occasionally I hear a splash, or encounter anglers thigh-deep in the water.

Meandering through this forested river valley, its shoreline peppered with fishing camps and signs posting private pools, it is hard to believe that a healthy salmon population cannot thrive here unaided—but without the dedicated actions of thousands of human caregivers, wild Atlantic salmon populations would have crashed decades ago due to human interference, negligence and overexploitation.

The story of the Atlantic salmon is interwoven through our various cultures, our history, identity, economy, the state of our environment, and our hearts.

Atlantic salmon travel vast and dangerous ocean distances to overwinter in the waters surrounding Greenland, but return to their rivers of birth to spawn. In doing so, they face a perfect storm of threats in both freshwater and marine environments.

Beyond naturally occurring predation and habitat barriers, the threats are significant.

Urban encroachment, logging, agricultural runoff, mining and industrial pollution degrade habitat. Commercial salmon aquaculture affects health and genetic integrity. Poachers and international fisheries reduce populations. Climate change and ocean acidity are increasing water temperatures, shifting currents, and affecting food sources.

Right: David LeBlanc releasing a "kelt" (a salmon which has spawned and overwintered in a river) during the Atlantic Salmon Federation sonar tagging program.



IMAGE COURTESY OF DAVID LEBLANC

Historically, most Atlantic Canadian rivers supported large numbers of spawning salmon. Researchers estimate that the remnant populations we now have represent fewer than four per cent of the pre-European colonization stocks. Before the arrival of European settlers, indigenous tradition says one could walk the river on the silver backs of salmon, and their springtime arrival—aligned with the appearance of birds, insects and fiddlehead ferns—was ingrained in First Nations culture, ceremony and survival. In the 1600s, explorer Nicholas Denys complained that the incessant splashing of salmon ascending the Miramichi River kept his men awake at night.

As European settlement increased, rivers became centres of economic development and were exploited for the burgeoning forestry industry. They were dynamited and dammed to create collection ponds. The strength of the spring freshets flushed masses of logs downstream, tearing away bank vegetation and spawning gravel while detritus from sawmills clogged streams and robbed them of oxygen.

Recreational angling increased in popularity and private fishing camps sprouted in the 1920s, becoming today's \$255-million sport fishing industry supporting nearly 4,000 full-time equivalent jobs and 10,500 seasonal jobs in rural areas that rely on seasonal work. The hydroelectric dams of the 1950s shut down a number of rivers, sacrificing the salmon runs for power.

By the mid-70s, wild stocks were in trouble and alarmed anglers began to work together to find a solution. Organizations and alliances formed and (mostly in vain) pressured government for action. Today, each province has a network of volunteer and non-profit organizations dedicated to salmon conservation and financially dependent upon the good graces of the public pocketbook, corporate sponsors and government.

Through electronic tagging, genetic identification, scale sampling and population counts, international researchers gain valuable data on habits and marine survival, but the extent to which each threat impacts the salmon remains unclear. For now, their best chance of survival may rest with ensuring freshwater habitats remain healthy, and restocking with hatchery-based wild stock, although this practice remains controversial within Fisheries and Oceans Canada (DFO).

Provincial groups do great work with limited funding, but

many say without upper level intervention to address the root causes, they're simply treading water.

Responsibility for managing migratory species lies with DFO. Once a vital and valued local partner in restoration and enforcement, the department has suffered from budget cuts and stymied research. Local offices have been closed or downsized; fish hatcheries closed or offloaded. Volunteer groups must now pay for hatchery services and professional expertise.

David LeBlanc is the executive director, Restigouche River Watershed Management Council. In his region, industrial and agriculture activities create siltation problems, and increased peak flow, climate change and deforestation are changing the river system.

"From the government, we need to link the science to the management of stocks. Right now the DFO science crew collects data on fish populations, but the management branch does not use the information to find out the cause of problems and to act," he says.

As well, poaching is a major problem: poachers are likely emboldened by the knowledge there is little enforcement and minor punishment if caught. Last May, during a presentation to the minister's advisory committee, LeBlanc pointed out that the only two DFO enforcement officers were an hour and a half away from the Restigouche River. Like others, he struggles in the grey zone between seeing what needs to be done, and getting the support to do it.

"You can work on siltation and poaching," LeBlanc says, "but then there will still be cormorants, bycatch by commercial fishermen and the fishery in Greenland—so many things that will impact the salmon."

"Our role is to try to get all authorities—government, non-government, First Nations, private companies—to work together to the benefit of the salmon, but each works for themselves, so it's complicated."

Case in point: in April 2015, working under a DFO permit, CN Railway dumped 6,000 tonnes of rock into a popular salmon pool on the celebrated Matapédia River in Gaspé while



IMAGE COURTESY OF SALMONID ASSOCIATION OF EASTERN NEWFOUNDLAND (SAEN)

Left: Stephen Chase, executive director of the Atlantic Salmon Conservation Foundation, with members of the Salmonid Association of Eastern Newfoundland. This project addressed the partial barrier at the outflow of Rennie's River at Quidi Vidi to allow upstream migration.

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reinforcing a railroad intended to transport Alberta bitumen to a new holding and shipping facility in Belledune, NB.

Economists estimate the wild Atlantic salmon's total value annually to the Atlantic Canada economy, including sport fishing, at \$255 million. In-kind contributions and volunteer labour from the community groups are estimated to be worth \$12 million annually.

But clinical calculations cannot begin to touch the deep ecological, cultural, emotional and spiritual worth.

Stephen Chase is the executive director of the Fredericton-based Atlantic Salmon Conservation Foundation (ASCF). He and his board manage a \$30 million trust fund contributed by the federal government in 2007 to help with projects such as fish ladders, stream bank restoration, counting fences, etc. Each year, after consideration of trends, needs and requirements, ASCF allocates at least \$1 million in grant funding across the Atlantic Provinces and Quebec.

Projects undertaken by the 100 or so recipient groups depend upon the skills of volunteers to supplement paid resource people, but Chase says the volunteer base is finite and getting greyer.

Despite this help, he says ASCF funding meets only about 30 to 40 per cent of the project requests. "If government was willing to put more money into conservation and research, our foundation would be well-positioned to distribute it fairly and properly," he says. In the meantime, ASCF is establishing its

own online resource of information called the "Salmon Hub" which offers the practical expertise gained with past projects plus scientific information and technical materials.

"We could live our life out as a granting entity, but it is more responsible to share what we have and to make it publicly available to help groups pursue their conservation programs."

Amy Weston is program manager with Adopt-a-Stream, a community-based watershed stewardship of the Nova Scotia Salmon Association. The program is funded in part by the sponsorship of the Nova Scotia Liquor Corporation, and by angler contributions to the NS Sportfish Habitat Fund through a levy on recreational fishing licences. The program provides money, training and technical support to 20 to 30 volunteer organizations that collectively restore an average of 200,000 square metres yearly of aquatic habitat in local rivers and streams.

Like many of her colleagues, she works from home and manages the program on a shoestring budget. She helps train about 80 new recruits each summer—both volunteers and hired work crews—in salmon ecology and hands-on restoration methods. The techniques include installing physical structures such as 'digger logs' and deflectors to re-establish a meandering pattern on watercourses that have become unnaturally straight and shallow due to past land-use practices.

While habitat restoration work benefits other species in the watershed, salmon are particularly sensitive to habitat loss. "As a cold water species, Atlantic salmon are more sensitive to temperature changes and habitat degradation, and they also have two habitats to contend with—salt and fresh. They spawn in late fall and eggs hatch months later. A lot can happen in that time."

Salmon are also particularly sensitive to acidic water conditions, and many of Nova Scotia's Atlantic-draining rivers have low pH due to acid rain. "These are big global problems," says Weston. "Lots of rivers have cooler tributaries and deep salmon pools that may be spring-fed, so those refuge areas have more resilience. So we encourage people to do water temperature monitoring and habitat protection. We can't control rain or climate, but we can change the shape of the vessel through instream channel restoration so it's of better quality under a wider range of conditions."

But she remains optimistic because the work serves as a catalyst for other actions in the watershed.

"While doing the fish habitat work, the groups become more involved in land-based planning, working with landowners, thinking about why there are watershed issues, as well. And



EMMA KINLEY, BLUENOSE COASTAL ACTION FOUNDATION
LAURYN LEBLANC, NSLC ADOPT-A-STREAM



Left: Amy Weston (left), Nova Scotia Salmon Association program manager of NSLC Adopt-a-Stream, during a hands-on habitat restoration training session held in Mabou, Cape Breton last summer, with Sarah Penny, of Atlantic Coastal Action Program (ACAP) Cape Breton, one of the 18 participants in that session.
Above: Fish passage remediation at Hebb Brook in Bridgewater, NS, last fall. Bluenose Coastal Action Foundation employee Danielle Pernette (left) and NSLC Adopt-a-Stream field technician Will Daniels (right) complete the installation of baffles and chutes to provided fish passage through a box culvert.

they are engaging municipalities in the process and widening the interest in water quality. Everything is related.”

She trusts that by building relationships and spreading awareness through repeated telling of the story, those contributing to damage will adjust their practices. “People and the planet are resilient,” says Weston. “We can’t give up. I have two boys. We have to do this for the future generations ... and hope they will do things better.”

Fred Metallic is from Listuguj in the *Gespe'gewa'gi Mi'gma'gi* territory, which extends from the northern Gaspé shore, south to the Miramichi River in central New Brunswick. His kin are historically known as “the Salmon People” and yet, despite their ancient and intimate relationship with the salmon, their voice is rarely understood or respected.

“Different traditions and ways of knowing interplay all the time,” says Metallic. “We have to find a way to communicate across these boundaries so we can have a conversation together about what we can do today to take care of the salmon.”

Metallic has a PhD in environmental studies from York University, but he is first and foremost a Mi'kmaq fisherman, father and activist. He has traveled internationally, advocating for better forms of resource management—and better ways of relating between cultures.

In Mi'kmaq language and world view, fish have personhood and hold a place of privilege equal to people. “We’ve been concerned about how the salmon is seen by non-indigenous people and their inability to see the salmon as a living being, and its value beyond the contributions to regional economy or

lifestyle. People don’t understand how salmon is part of our livelihood, ceremony, economy, diet and central to our being and culture.”

He says that conversations on improving the stocks of salmon typically revolve around better management, but he points out that indigenous catches are small compared to the other threats the salmon faces. “Holding developers accountable is something we see as being necessary to do something about the status of the stock.”

Our conversation highlights the wide range of motivations and people who are concerned for this one animal—First Nations, non-indigenous river communities, recreational anglers, private landowners, fishing camp owners, river guides, industry, corporations, volunteers, scientists, government. All come to the table with different perspectives, experiences, objectives, and opinions.

Stephen Booth is a retired Anglican priest who has been fishing the Upsalquitch River near Campbellton, NB for 32 years. He is a doctoral candidate in rural studies at the University of Guelph, researching the relationship between the salmon and three distinct groups sharing the Restigouche watershed—the sport fishery, the non-indigenous river communities and Listuguj First Nation. I ask him why the salmon is so revered.

“The salmon is the means of connecting to natural wildness and many sport fishers feel that fishing in a beautiful place that

“We have to find a way to communicate across these boundaries so we can have a conversation together about what we can do today to take care of the salmon”

they love—sometimes a multigenerational place—puts them in touch with nature and wildness. The salmon brings them here, and if they are fortunate enough to hook it and play it, then that direct contact is a great gift, and it reminds them of their own part in the natural world.”

He also points out that while every river system is different—the Restigouche, the Margaree in Cape Breton, the Exploits in Newfoundland or the West River in PEI are as individual and distinct as the people who love them—there is widespread agreement among anglers about what the problems are: habitat destruction, natural predators, poaching and a wide set of threats on the high seas.

“The point is that all three groups share a common place in the Restigouche watershed and they share the same animal as a powerful symbol that gives meaning and purpose to their lives, yet they have different understandings of the place and salmon and that animal’s existence is threatened. You have the commonality with the salmon, yet disparity in the meaning that it gives to each of the three groups and the role it plays in their making of meaning.”

Later, as I load my kayak, I reflect upon those I saw gathered at the river—guides and anglers braced in the current, in canoes, on lawn chairs at water’s edge, solitary or alongside friends and families gathered at picnic tables or under sun shelters enjoying cold beer on a warm fishing day. All drawn here by the salmon.

“Despite all we’ve done to the river and the stock, the salmon keep coming back,” says Fred Metallic. “They have a life and a mind and a heart, and when they come back, we have a feast and ceremonies and people come together to honour its return. If it wasn’t for the salmon, we wouldn’t have this relationship between ourselves, the people from Matapédia and the anglers and everyone else. We need to recognize and acknowledge how the salmon contributes to our lives.”

During a First Nations talking circle, youth, adults, elders are given an equal chance to speak on an issue and in this way, all reach a greater understanding of the breadth, width and depth of the story. The elders say you can speak as long as listeners listen, and once they stop listening, you must stop speaking.

In the next issue, you will hear stories of other “salmon people” and their rivers. As long as these voices can be heard, we hope the listeners will not stop listening.



IMAGE COURTESY OF BLUENOSE COASTAL ACTION FOUNDATION

Staff of the Bluenose Coastal Action Foundation install a digger log as part of their stream restoration efforts.

Volunteers work to stop the abuse of wild Atlantic salmon habitat

Volunteer conservation workers on salmon streams often come across a few unpleasant surprises when they’re out in the field.

As just one example out of many, the Bluenose Coastal Action Foundation, operating on the South Shore of Nova Scotia, discovered a house that had been built directly over a stream, destroying the stream.

The same group discovered tires, commercial fishing gear, car parts, paint cans, farming equipment and a wide variety of other items on a tributary, all had been dumped down the slope from the side of the road. In addition to a dumpster full of garbage, about 1,000 pounds of scrap metal was also removed and sent to be recycled.

Last year the Coastal Action crew assessed almost 200 stream crossings as part of the multi-year LaHave River watershed project to develop a river restoration plan. Field workers identified a number of crossings in need of remediation. They completed work on five crossings last fall, restoring access to a significant amount of upstream fish habitat.

“Over the years, this group has prepared and implemented multiple watershed management plans with funding from ASCF,” says Stephen Chase of the Atlantic Salmon Conservation Foundation. “Coastal Action’s work is a shining example of ASCF’s mission to promote and fund watershed planning as an important conservation tool to ensure efficient and effective use of limited resources.”

In total, Coastal Action restored about 8,000 square metres of fish habitat last year alone and has developed a detailed plan for future work.

With more than 1,700 square kilometres to work on, they (and the dozens of other similar volunteer groups working around the region) are sure to uncover a few more nasty surprises. ~JG 🐟