

**Coquitlam's sturgeon legacy:
As we approach the 2010 Olympics, shouldn't we be doing
more for BC's Ultimate Marathoner?**



prepared by



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The Commuter Medley

On any given day, 127,000 cars travel to and from Coquitlam via the Port Mann Bridge. In terms of their human occupants, this works out to about a quarter million *Homo sapiens* crossing the Fraser each day, or just under 2 million a week, some 8 million a month, nearly 48 million a year, and a *whole bunch* in the 40 years the Port Mann has linked Coquitlam and points east.

But if you're impressed by those commuter numbers, pause for a moment to ponder what's happening underneath the bridge. The Port Mann does, after all, span the greatest salmon river in the world. Last year alone, some 30 million pink salmon cruised upstream, passing under the steel and girders of the Port Mann. They and other species of Pacific salmon have been doing so for millennia. Even Coquitlam's name, on loan from the Kwikwetlem people, literally means "Red Fish up the River."

Coquitlam's commuter medley also includes a unique and exceptionally accomplished traveler—an 'ultra' marathoner, if you will. This aquatic creature—which vaguely resembles a giant catfish hooked on Pilates—has unfailingly carried a torch lit before the dinosaurs made their grand exit. It is, of course, the Fraser River white sturgeon. Survivor of two ice ages, the Fraser's white sturgeon is the real deal, the original Olympiad, each fish a near-original and impressively proportioned custodian of a genetic, cultural, and ecological legacy.

But as World treasures go, the sturgeon is often treated like the Rodney Dangerfield of the fish kingdom. Millions of those commuters on the bridge above know little or nothing of the wild sturgeon below. Not only does this diminish a potentially enriching connection to a natural and Coquitlam legacy, it begs the question: As we prepare for the 2010 Olympics, isn't time to show a little more respect for Coquitlam's and Canada's ultimate marathoner?

Coquitlam's legacy

To appreciate Coquitlam's sturgeon and sturgeon heritage, we might start by thinking about what has been squandered. Coquitlam's Fraser River shores once teemed with huge and abundant sturgeon. Imagine the surprise of our ancestors when they discovered they could catch fish that outweighed their horse!

We will never know how many sturgeon once plied the waters of the lower Fraser River. But we do know there were a lot when Coquitlam's pioneers cleared the first homesteads. We also know a rapacious market sprang up to exploit both the sturgeon's flesh, and its isinglas. Derived from fish, isinglas is a gelatinous substance that is added to wine or mead in the rack. Isinglas collects particulate matter and settles out of solution, thus clarifying the must.

Author Terry Glavin in *A Ghost in the Water* documents the turn-of-the-century collapse of Fraser River sturgeon populations caused by commercial over-fishing. Glavin tells of two American firms which set up sturgeon processing businesses in New Westminster in the early 1890s. Wallace and Company and Trescott and Company boasted of being able to put "20,000 hooks in the water between Mission and Steveston."

The sturgeon catch peaked in 1897, when commercial sturgeon fishermen landed 1,137,696 pounds of sturgeon. Glavin puts this number in perspective by estimating that the total weight of sturgeon would have matched the total weight of the 7,000 people then living in New Westminster. (By comparison, Coquitlam had probably fewer than 500 regular inhabitants.)

Three years later the fishery had collapsed, a victim of its own greed. Barely one-tenth of the sturgeon remained, and for the next one hundred years, they and their descendants were largely left to fend for themselves, until all sturgeon killing was finally halted in 1994.

That late-but-still-welcomed gesture was prompted by yet another kill of sturgeon, this one starting in the fall of 1993. Over the next few months, 34 large sturgeon washed up on the banks of the Fraser. Dr. Marvin Rosenau, a provincial fisheries biologist in Surrey, spent the next two years searching for an answer to the die-off. He tested dead sturgeon for polychlorinated biphenyls, 23 organochlorines, 19 heavy metals, dioxins, and furans—and found no clue to their demise. In the end, he could only say that the deaths resulted from an "event".

This event alarmed professionals like Rosenau for another reason: no one knew how many sturgeon there were left to protect. No one had ever bothered to count. If the die-offs were alarming, so too was our ignorance of what was actually happening to sturgeon, and thus how we can protect what's left.

The Stewards Enter the Race

Rosenau maintains an enviable reputation as a professional sturgeon steward. But he would be the first to admit that volunteers—and more money for research—were desperately needed to protect the Fraser's most ancient fish.

Rosenau and the sturgeon eventually got both, thanks in large part to the commitment of another Canadian legacy—Rick Hansen. Coquitlamites and Canadians know about Hansen's own round-the-world marathon for spinal cord research. Fewer, however, have heard of Hansen's long passion for fishing, and fishing for sturgeon, in particular. Shortly after the last big sturgeon die-off, Hansen and some of his fishing buddies began mulling over how to help Rosenau and the Fraser's sturgeon. Their solution was to create the Fraser River Sturgeon Conservation Society. Hansen launched himself into his role as Chair with all the energy and devotion he brings to

every other endeavor. He and his directors decided to help Rosenau finance and conduct the intensive task of counting sturgeon. In an ambitious endeavor, the Sturgeon Society approached the Vancouver Foundation, Fisheries Renewal, the Habitat Conservation Trust Fund, government, and others who eventually contributed the thousands of dollars needed to purchase enough tags and tag scanners to equip a virtual army of 100-plus volunteer taggers. Over the next several years, these eager volunteers helped Rosenau and the Society's directors "mark and recapture" sturgeon to establish a "baseline" population estimate essential to sturgeon conservation efforts (see *The Census Problem*).

As of 2004, these volunteers had tagged more than 18,000 white sturgeon—many hundreds of these fish Coquitlam's 'own'. This remarkable in-kind donation of time, boats, gas, and enthusiasm has led directly to one of the best fish populations estimates ever produced, anywhere, by anyone. We know with a high degree of certainty that 62,000 sturgeon currently live in the Fraser River between the mouth near Steveston and Hell's Gate. We know that approximately one-third (18,000) of all the sturgeon in the lower Fraser reside in or pass through the section of the Fraser Coquitlam lays claim to, according to Sturgeon Society executive director, Troy Nelson. We also know that these numbers are much smaller than in the past, and that they include far too few of the truly large and egg-bearing class size of yesteryear (see *Pedigree of the Marathoner*).

"We're thrilled to have such excellent population estimates," says Hansen, "but we're concerned that there are still so few really big females." Hansen is heartened, however, by some very good news—the discovery of lots of baby sturgeon. "We fortunately see a recovery happening," says Hansen. The number of small sturgeon—that is, fish ranging from the size of cucumbers to small zucchinis—appears to be the healthiest segment of the sturgeon population. While neither the Society or the professionals know exactly how many of these future leviathans there are, the trend at least is heartening, especially after decades of declines.

The Sturgeon Society plans to continue its tagging programs to track these remarkable fish. In the meantime, it has also launched into major First Nations stewardship programs, habitat protection efforts, and conservation and recovery planning with government. These stewardship efforts buoy professionals like Rosenau, himself an honorary director of the Fraser River Sturgeon Conservation Society. Rosenau knows all too well that sturgeon, despite their remarkable journey, and not unlike the travelers on the bridge above, now face their own bottlenecks. He knows too that these fish are more likely to surmount these bottlenecks with the help of the river's human stewards. Little wonder that the enhancing of sturgeon awareness engenders more than a modicum of pride in those involved in the efforts. A sturgeon pride, felt by a growing number of Coquitlam residents, slowly but surely gaining overdue momentum along the banks of the mighty Fraser.

First Nations perspective

Insert interview with Kwikwetlem elder.

Preserving the Legacy

If even a few more of us spared a moment to think about what's underneath us as we travel across the Fraser, the happy result could be a powerful collective outpouring of 'sturgeon pride.' If you want to do more for sturgeon (and Coquitlam's heritage), reflect on ways to increase awareness and stewardship. Many individuals and groups (including numerous Rotary Clubs) have boosted awareness and entertained constituents by hosting sturgeon talks. Individuals have also contributed generously and directly to sturgeon and watershed conservation efforts.

For more information, or to make a donation:



Fraser River Sturgeon Conservation Society
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Crescent Beach, BC V4P 2B5
Tel: 604-535-1768
Email: tnelson@lgl.com
<http://www.rickhansen.com/Fishing/Fraser/fraser.htm>



Watershed Watch
Executive Director, Craig Orr
1037 Madore Avenue
Coquitlam, BC V3K 3B7
Tel: 604-936-9474
Email: wwss@telus.net
www.watershed-watch.org

The Census Problem

Scientists are forever putting tags on things. By tagging an animal and then seeing how many tagged individuals they can find in a subsequent sample, researchers are able to estimate the total number of animals in a given area or habitat. Scientists have many names for their counting

techniques: Peterson, Jolly-Seber, modified-Schnabel. Most of us know it simply as the mark-recapture method, and the logic behind it was first applied in 1786 to census the population of France.

Tagging sturgeon in the Fraser River provides an estimate of their total numbers—and thus, their vulnerability. And the more sturgeon you tag, the better the population estimate.

Population estimates are less accurate - or more biased, in scientific jargon—if sturgeon lose tags. The volunteer taggers who assist the Sturgeon Society prevent tag loss by implanting tiny "passive integrated transponder" tags under the sturgeon's skin. Each PIT tag has a unique number code it "transponds" when stimulated electronically by a portable reader. So relax when you see sturgeon fishermen waving a gizmo over a just-caught sturgeon—they're only counting sturgeon.

Pedigree of the Marathoner

The white sturgeon is the largest freshwater fish and one of five species of sturgeon in North America (the green sturgeon, a mainly marine species, is also found in BC). The largest white sturgeon ever caught—a 1900-pound behemoth—came from the Columbia River near Astoria, Oregon. Fish over 6 meters in length and weighing over 1300 pounds have been caught in the Fraser.

The scientific name of the White sturgeon, *Acipenser transmonstanus*, translates literally into 'sturgeon beyond the mountain'. Appropriately, sturgeon are found in many watersheds in the Pacific Northwest. Populations in the Nechako, Columbia, Kootenay and lower Fraser rivers have all declined in recent years. Things are so bad in the Nechako, scientists predict that, unless things improve, the stock may be effectively extinct (less than 50 individuals) within the next 20-30 years.

The 62,000-some wild white sturgeon left in the lower Fraser (south of Hell's Gate) thus contain the sum total of the last healthy and purely wild gene pool (hatchery programs have been underway for years in the Columbia) of this species of ancient fish—anywhere. So how are they doing lately at passing the baton, you ask? In fact, there may be only a few hundred large and precious females breeding in any given year in the entire lower river, according to the Society's calculations. Keep in mind that female sturgeon do not breed for the first time until they are about 25 years of age—or about a meter-and-a-half in length—and then they usually skip two, three or even more years before laying again. Once they mature, however, they make impressive contributions to their species' future. A truly large sturgeon (over 3 meters or so) may lay 4 million eggs during spawning (see *Sturgeon Links* to view a video of spawning sturgeon).

At times, sturgeon also literally take their acts on the road. Each year, sturgeon hatched in the

Columbia River may travel into the Fraser and pass Coquitlam with barely a hello. In the last two years, volunteer taggers have caught two Columbia River sturgeon near Chilliwack. The fish were between 12 and 18 years of age, and each of these lively youngsters had been tagged five years earlier at Astoria Oregon, the same site which long ago yielded up the record dead sturgeon.

Sturgeon and other links from beyond the mountain

Sturgeon photos, and instructions on how to say white sturgeon in 15 languages

http://www.jjphoto.dk/fish_archive/acipenser_transmontanus.htm

Articles on sturgeon angling

http://www.coastangler.com/fishing/sturgeon_fishing.shtml

Status report on white sturgeon (Council on the Status of Endangered Wildlife in Canada)

http://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_white_sturgeon_e.pdf

General information and cool facts on sturgeon

http://www.mbayaq.org/efc/living_species/default.asp?hOri=1&inhab=498

Sturgeon conservation

<http://www.caviareemptor.org>

Overview of sturgeon in BC, links to conservation programs

<http://www.bcfisheries.gov.bc.ca/fishhabitats/Sturgeon/Sturgeon.htm>

Videos on tagging and of spawning sturgeon

<http://www.watershed-watch.org/ww/Harvest/sturgeon.html>

Coquitlam's lost but not forgotten sockeye (pdf file prepared by Kwikwetlem First Nation)

[Red Fish Up The River](#)





