

Wet boot science

The couple who created the Liber Ero program want to give researchers like Jonathan Moore the freedom to tackle crucial conservation problems, and to do it in novel ways

Four years ago, as the position of Liber Ero chair in coastal science and management was being created at Simon Fraser University, in Burnaby, B.C., Jonathan Moore was happily ensconced at the University of California, Santa Cruz. Still, he felt something was missing. "I wanted to be in a place where the salmon were still thriving," he says today. Dr. Moore applied for the new post, then left one of coastal California's prettiest places to head up the Pacific coast and engage in what he calls "wet boot science."

The chair position owes its existence to a donor couple who want to give researchers the "freedom to be," a loose translation of the Latin *liber ero* – "I will be free" – which also happens to be the family's motto. Whoever occupies the Liber Ero chair would be able to choose the research projects that he or she believes to be most important and then have the time and resources to pursue them. With such a mandate, Dr. Moore could have researched any number of things and, in fact, he has, but there is a common denominator to all of them: those salmon.

"I embraced the vastness of B.C.," he says. Up north in the Skeena River estuary, where several liquefied natural gas (LNG) projects are currently planned, he and his research collaborators found an extraordinarily rich habitat that supports salmon as almost nowhere else.

On northern Vancouver Island, he and another group of collaborators studied a small river with the world's best historical dataset for steelhead.

Two very different projects focused on the Fraser River, flowing just a few kilometres from Simon Fraser's Burnaby campus. One is general in nature: a huge dataset encompassing 142 sites. The other is highly specific: Dr. Moore's group looked at the ponds created by floodgates along the river in the hope that flood control could be made more fish-friendly.

The salmon can certainly bear the scrutiny. In the past few years, the various populations' annual runs have whipsawed between very good years and others that lead to fishery closures and conservation concerns. "Salmon have complex life-cycles that link streams and rivers to the ocean; there may be several stressors that control their populations and there will always be uncertainty," says Dr. Moore.

At the same time, though, the research he's undertaken has been designed, not only to render some of the mysteries a little less mysterious but also to pinpoint some of the actions we humans can take to better secure the salmon's future.

That's very much in keeping with the wishes of the donors behind Liber Ero, who established the program to conduct and communicate world-class research that informs conservation and management issues. In addition to the work of Dr. Moore, there is a Canada-wide Liber Ero program that grants post-doctoral fellowships to early-career environmental scientists. As an illustration of how the money is spent, the scholars of the national grant are "encouraged to confront emerging

management challenges that are time-sensitive or to tackle 'wicked' conservation problems with novel analyses, perspectives and collaborations."

Dr. Moore has worked with dozens of SFU students and grad students, alongside collaborators ranging from First Nations and governmental branches to public and private organizations. He's also been able to attract additional funding to augment university and Liber Ero sources. "In the past year," he says, "I've been able to multiply by two or three the amount of money available."

Which means lots more research into the ever-elusive salmon – and wet boots all around.

This content was produced by The Globe and Mail's advertising department in consultation with Simon Fraser University. The Globe's editorial department was not involved in its creation.

I'll study the salmon

In the four years he's been at Simon Fraser University, Jonathan Moore has undertaken four major research projects, each of them with a salmon connection.

Study location

Skeena River estuary

Nature of research

In collaboration with fishery biologists from Skeena River First Nations, studied salmon populations.

Findings and significance

The estuary supports a remarkable abundance and diversity of salmon, significant because several liquefied natural gas (LNG) projects are being proposed for the area and could affect the habitat.

Study location

Tidal creeks on the Lower Fraser River

Nature of research

Studied the streams behind floodgates erected to protect farmland.

Findings and significance

Some tidal creeks are dead zones where the water has insufficient oxygen. Understanding this could help guide flood-protection projects to make them more fish-friendly.

Study location

Keogh River, on northern Vancouver Island

Nature of research

With private and government collaborators, studied salmon and steelhead population change.

Findings and significance

As the longest-running monitoring location in the world for steelhead, the river helps provide a better understanding of what controls population booms and busts.

Study location

Fraser River watershed

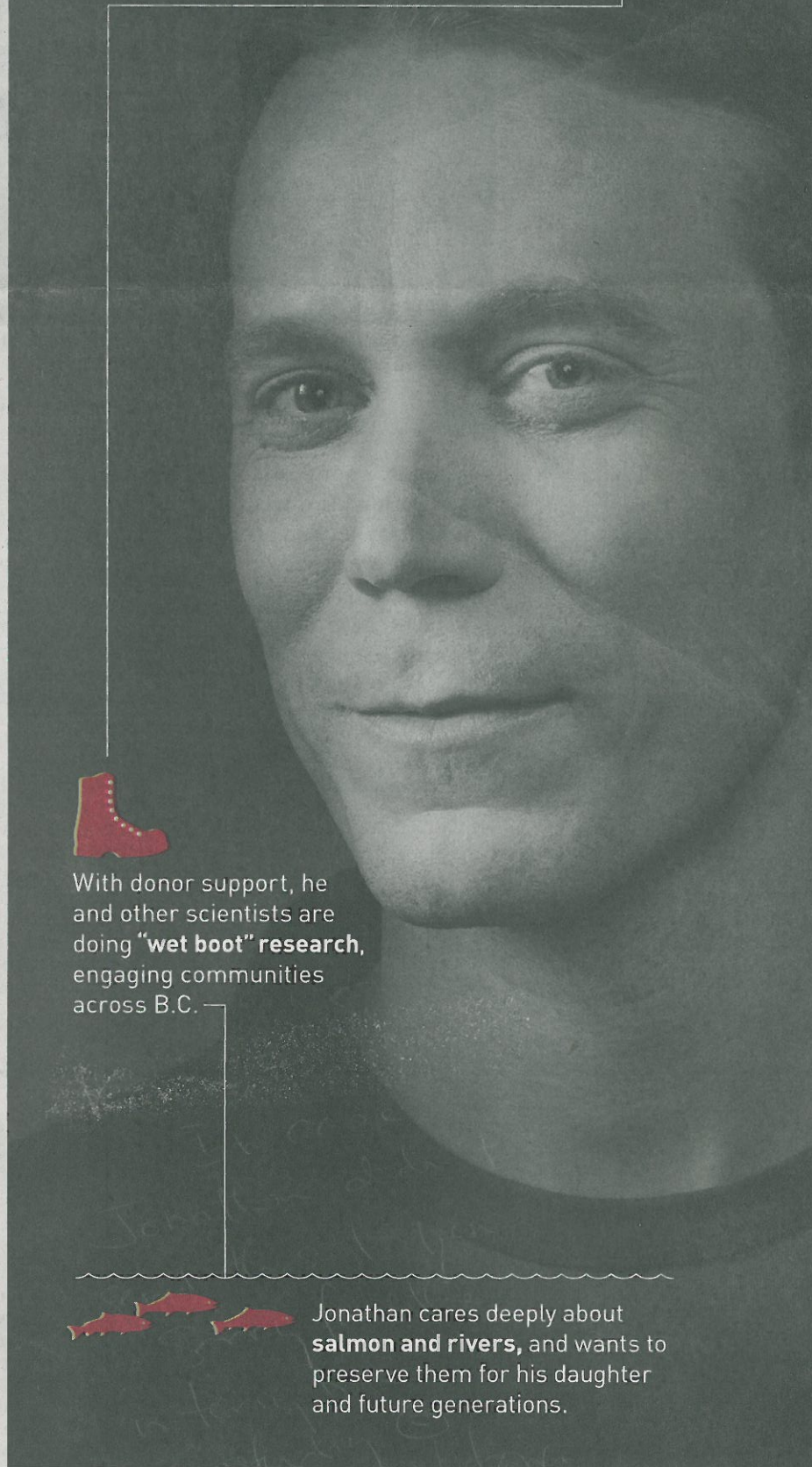
Nature of research

Compiled a dataset measuring fisheries, flows and water temperatures spanning more than three decades at 142 sites.

Findings and significance

Large free-flowing rivers provide under-appreciated stability to fisheries. This information helps address issues pertaining to integrated watershed management.

SFU professor Dr. Jonathan Moore sees the university as a **global leader** that tackles challenging questions facing society and the ecosystems in which we live.



With donor support, he and other scientists are doing "**wet boot**" research, engaging communities across B.C.

Jonathan cares deeply about **salmon and rivers**, and wants to preserve them for his daughter and future generations.

My SFU Story

Thanks to generous donors, Dr. Jonathan Moore is conducting critical research on the biodiversity of salmon, to help protect their habitats in a changing world.

sfu.ca/mysfustory



THE POWER OF ENGAGEMENT CAMPAIGN