# William I. Atlas, PhD. Fisheries Ecology and Co-management

Science Director, QQs Projects Society

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**Research Interests**

My research links scientific understanding of populations, ecosystems and climate, with the values, traditions and needs of human communities to promote the long-term sustainability of fisheries and coastal ecosystems. This interest has led me to be involved in a variety of projects, from ongoing long-term research and monitoring of salmon populations and climate impacts in the Koeye River, to stock-assessment and simulation-based approaches to understanding population and fishery dynamics. By co-creating research with Indigenous communities and government scientists, I am building a research program that addresses critical policy-relevant gaps in our understanding of populations, fisheries and ecological communities.

**Professional History**

**Science Director** 2015-present

QQs Projects Society, Bella Bella, BC.

www.qqsprojects.org

**Graduate Research Assistant**  2014-present

*Salmon Watersheds Lab*, Simon Fraser University

Senior Supervisor: Dr. Jonathan W. Moore

*Biological Sciences,* Simon Fraser University 2009-2012

Senior Supervisor: Dr. Wendy J. Palen

**Salmon Program Coordinator** 2012-2015

QQs Projects Society, Bella Bella, BC

**Scientific consulting**

CCIRA, Evaluating recovery prospects for recovery of Atnarko sockeye 2018

InStream Fisheries, Seymour River steelhead population modeling 2013

**Lab Manager and Researcher** 2012-2013

*Salmon Watersheds Lab,* Simon Fraser University

Supervisor: Dr. Jonathan W. Moore

**Lab Technician and Research Assistant** 2007-2009

*Molecular Ecology Research Lab,* University of Washington

**Field Technician**

*University of Washington Alaska Salmon Program,* Dr. Thomas P. Quinn 2007

Hoh River Trust 2006

**Education**

**PhD** Simon Fraser University Burnaby, BC May, 2019

Department of Biological Sciences

Advisor: Dr. Jonathan W. Moore

Dissertation: *Science for community fisheries – population assessment and climate impact monitoring for Heiltsuk-led salmon stewardship*

**MSc** Simon Fraser University Burnaby, BC 2012

Department of Biological Sciences

Advisor: Dr. Wendy J. Palen

Dissertation: *Resource subsidies, top predators, and community regulation in stream ecosystems.*

**BSc** University of Washington Seattle, WA 2008

Major: Aquatic and Fisheries Science

Deans List, Departmental award for undergraduate excellence

**Publications**

*Peer-Reviewed*

**Atlas, W.I.,** K.J. Pitman, D.T. Selbie, C.A. Holt, S. Cox-Rogers, C. Carr-Harris, and J.W. Moore. 2019. Regional and landscape controls of lake capacity to inform evaluation of sockeye salmon populations (*Oncorhynchus nerka*) in data-limited regions. *In Review*

Connors, B.M., **W.I. Atlas**, C. Melymick, M. Moody, and J. Moody. 2019. Evaluating conservation risk and uncertainty in recovery prospects for a collapsed and culturally important sockeye salmon population. *In Review*

**Atlas, W.I.**, W.G. Housty, A. Béliveau, B. DeRoy, G. Callegari, M. Reid, and J.W. Moore. 2017. Ancient fish weir technology for modern stewardship: lessons from community-based salmon monitoring. *Ecosystem Health and Sustainability* 3: 1341284*.*

**Atlas, W.I.**, T.W. Buehrens, D.J.F. McCubbing, R. Bison, and J.W. Moore. 2015. Implications of spatial contraction for density dependence and conservation in a depressed population of anadromous fish. *Canadian Journal of Fisheries and Aquatic Sciences* 72: 1682 – 1693.

Moore, J.W., M.P. Beakes, H.K. Nesbitt, J.D. Yeakel, D.A. Patterson, L.A. Thompson, C. Phillis, D.C. Braun, C. Favaro, D. Scott, C. Carr-Harris, and **W.I. Atlas**. 2015. Emergent stability in a large, free-flowing watershed. *Ecology* 96: 340-347.

**Atlas, W.I.,** andW.J. Palen. 2014. Prey vulnerability limits top-down control and alters reciprocal feedbacks in a subsidized model food web. *PLoS ONE* 9*.*

R.G. Munshaw, **W.I. Atlas**, W.J. Palen, D.M. Courcelles, Z.L. Monteith. 2014. Correlates and consequences of conspecific aggression in a large, predatory stream dwelling salamander (Dicamptodon tenebrosus). *Amphibia-Reptilia* 35: 107-116.

Lagasse, C. R., W. Ou, L. D. Honka, **W. I. Atlas** and M. D. Hocking. 2014. Design Considerations for Community-Based Stream Monitoring to Detect Changes in Pacific Salmon Habitats. *Ecology and Society* *19: 19 -.*

Anderson, J.H., P.L. Faulds, K.D. Burton, M.E. Koehler, **W.I. Atlas**, and T.P. Quinn. 2014. Dispersal and productivity of Chinook (Oncorhynchus tshawytscha) and coho (O. kisutch) salmon colonizing newly accessible habitat. *Canadian Journal of Fisheries and Aquatic Sciences* 72: 454-465.

**Atlas, W.I**, W.J. Palen, D.M. Courcelles, R.G. Munshaw, and Z.L. Monteith. 2013. Dependence of stream predators on terrestrial prey fluxes: food web responses to subsidized predation. *Ecosphere* 4.

Anderson, J.H., P.L. Faulds, **W.I. Atlas**, and T.P. Quinn. 2013. Reproductive success of captively bred and naturally spawned Chinook salmon colonizing newly accessible habitat. *Evolutionary Applications* 6: 165-179.

Anderson, J.H., G.R. Pess, P.M. Kiffney, T.R. Bennett, P.L. Faulds, **W.I. Atlas**, and T.P. Quinn. 2013. Dispersal and tributary immigration by juvenile coho salmon during contribute to spatial expansion during colonisation. *Ecology of Freshwater Fish* 22: 30-42.

Anderson, J.H., P.L. Faulds, **W.I. Atlas**, G.R. Pess, and T.P. Quinn. 2010. Selection on breeding date and body size in colonizing coho salmon, *Oncorhynchus kisutch*. *Molecular Ecology* 19: 2562-2573.

*Technical*

**Atlas, W.I.** 2018. Koeye salmon ecosystem study: annual report on 2017 population monitoring. Presented to the Heiltsuk Integrated Resource Monitoring Department (HIRMD) and DFO.

**Atlas, W.I.**, and W.G. Housty. 2017. QQs Projects Society salmon program: Five-year monitoring update. Presented to HIRMD and DFO.

**Atlas, W.I.** 2016. QQs salmon program – 2015 season summary. Presented to HIRMD and DFO.

**Atlas, W.I.** 2015. QQs Projects Society, community salmon programs annual report, 2014. Presented to HIRMD and DFO.

 **Atlas, W.I.** 2014. QQs salmon program 2013 annual report: preliminary findings and future directions. Presented to HIRMD and DFO.

*Film*

**Atlas, W.I.,** B. DeRoy, and W.G. Housty**.** Sustaining Sockeye. NSERC – Science Action! film contest.

https://www.youtube.com/watch?v=gcYbY-Eythw

**Atlas, W.I.,** I. Herb, and A. Naysmith.Sitting on Water: A Season on the Koeye River. *Director/producer.* https://vimeo.com/85332920

*Popular media*

**Atlas, W.I.** Traditional knowledge meets science for monitoring and managing wild salmon. *The Osprey,* Issue 88*:* 8-10.2017.

**Atlas, W.I.** Undoubtedly, Spring. The Fly Fish Journal. Vol. 4, Issue 3. 2013.

**Atlas, W.I**, Simms, R., Beardslee, K., and Soverel, P.Elwha River salmon, steelhead better off without hatcheries. *The Crosscut.* August 2nd 2011.

**Atlas, W.I.**, Beardslee, K., and Simms, R.Restore the Elwha without hatchery fish. *Seattle Times Opinion and Editorial.* July 12th 2011.

**Teaching**

**Teaching Assistantships**

*Conservation Biology, BISC 309. Simon Fraser University*  2010

*Intro Biology, BISC 102. Simon Fraser University* 2011

**Student Mentorship**

*Effects of The Blob warm ocean temperature anomaly on growth and survial in Koeye River sockeye*. Leama Valleley – undergraduate thesis project. Summer 2018 – Fall 2018

**Guest lectures**

Simon Fraser University

*A Brief 10,000 Year History of Salmon and People on the BC Coast.* (EVSC 399)2017

*History and Ecology at the Koeye River* (ArcheoEcology Field Course) 2014

*Koeye River weir: towards adaptive management of Heiltsuk sockeye* (REM 660) 2013

*Managing salmon for resilience in the 21st century* (REM 660) 2012

*Salmonid ecology and conservation* (BISC 309) 2010

University of Victoria

*First Nations stewardship of salmon on the Central Coast* (GEOG 304) 2016

*Koeye River weir: towards adaptive management of Heiltsuk sockeye* (GEOG 456) 2014

*A brief 10,000 year history of salmon fisheries on the British Columbia Coast* (GEOG 304) 2014

**Awards and honors**

Hakai PhD Fellowship 2014 - present

Simon Fraser Travel and Research Award 2018

American Fisheies Society (AFS), Jeff Cederholm endowed scholarship 2017

AFS, Haig-Brown Award for Fisheries Conservation Journalism and Communications 2012

Simon Fraser Graduate Fellowship 2011

Simon Fraser Travel and Research Award 2011

Simon Fraser Graduate Fellowship 2010

UW SAFS Faculty Merit Award for Academic Excellence 2008

H. Mason Keeler Endowed Scholarship 2007

H. Mason Keeler Endowed Scholarship 2006

**Funded Proposals**

Since 2012 I have authored 19 successful proposals, bringing a total of $372,355 in grant funding to support community-led stewardship of fisheries and terrestrial ecosystems.

Baselines for sustainable salmon fisheries - Heiltsuk community-led catch monitoring. *SFU Community Engagement Initiative Grant*. Spring 2019. **$6,000**

Koeye River collaborative monitoring initiative 2019. *Pacific Salmon Foundation.* Spring 2019. Principle Author. **$10,000**

Baselines for sustainable salmon fisheries: Heiltsuk-led catch monitoring. *TIDES Canada*. Spring 2019. **$9,600**

Koeye River weir upgrade. *Tula Foundation.* Spring 2018. Principle Author. **$65,000.**

Koeye River collaborative survival monitoring initiative. *Pacific Salmon Foundation.* Spring 2018. Principle Author. **$16,425**

Koeye River life-cycle monitoring. *Pacific Salmon Foundation*. Spring 2017. Principle Author. **$13,980**

Establishing baselines for ecosystem-based co-management of estuaries in coastal BC. *McLean Foundation*. Spring 2017. Principle Author. **$5,000**

Heiltsuk Marine Survival Initiative – Monitoring Climate Impacts on Salmon. *TIDES Canada.* Spring 2016. Principle Author. **$70,000**

Collaborative Heiltsuk Salmon Survival Initiative. *Pacific Salmon Foundation: Community Salmon Program.* Spring 2016. Principle Author. **$24,000**

Collaborative Heiltsuk Salmon Survival Initiative. *Vancouver Foundation.* Spring 2016. Principle Author. **$11,800**

First Nations Stewardship of Bears on BC’s Central Coast. *MEC Capacity Building Grant*. Spring 2015. Principle Author. **$18,000**

Community-Led Conservation in the Great Bear Rainforest: Capacity building for First Nations Stewardship of Bears on BC’s Central Coast. *Patagonia Environmental Grants Program*, April 2015. Principle Author. **$10,000 USD**

Heiltsuk Led Sockeye Monitoring in the Great Bear Rainforest. *Pacific Salmon Foundation: Community Salmon Program,* February 2015. Principle Author. **$7,300**

Building Capacity for Salmon Stewarship in the Great Bear Rainforest. *Pacific Salmon Foundation: Community Salmon Program,* February 2014. Principle Author. **$12,000**

Salmon Stewardship in the Great Bear Rainforest: Koeye River Traditional Fish Weir. *BC Multiculturalism grant*, January 2014. Principle Author. **$3,000**

Building Capacity for Salmon Stewardship in the Great Bear Rainforest: Koeye River Traditional Fish Weir. *Tides Canada: Taku and BC Coast Capacity for Conservation Fund,* April 2013. Principle Author. **$40,000**

Building Capacity for Salmon Stewardship in the Great Bear Rainforest: Koeye River Traditional Fish Weir. *Pacific Salmon Foundation: Community Salmon Program,* February 2013. Principle Author. **$15,250**

Building capacity for freshwater stewardship: a traditional fish weir in the Koeye Conservancy of the Great Bear Rainforest. *McLean Foundation*. April 2013. Principle Author. **$5,000**

Rebuilding fisheries science in the largest sockeye salmon lake in Canada: lake Babine smolt fence. *The Northern Fund,* Fall 2012. Contributor. **~$100,000**

Building capacity for freshwater stewardship: a traditional fish weir in the Koeye Conservancy of the Great Bear Rainforest. *The Vancouver Foundation*, Fall 2012. Principle Author. **$30,000**

**Outreach**

**Events and visits**

Yekooche Nation Koeye weir visit – knowledge exchange on weir building July 2018

Speaking for the Salmon – Science panel participant, *Simon Fraser University* Jan. 2017

Kitasoo-Xai’xais Koeye River visit – salmon stewardship knowledge exchange July 2016

Bella Bella Community School field trips 2012-present

**The Osprey: Conservation Journal of Wild Salmonids**

Editorial Committee: 2007 – 2015

Chair: Fall 2009 – Winter 2013

**Wild Steelhead Coalition Science and Policy Committee**

Science and policy advisor: 2011 – 2014

**Presentations**

*Invited Talks*

Science for Community fisheries: collaborative management and local governance of salmon. *Invited speaker: Central West Coast Forest Society – community speaker series.* March 2018.

Science for community fisheries: collaborative management and local governance of salmon. *Invited speaker: Les Ecologistes,* Simon Fraser University, March 2018.

Working better together – perspectives on collaboration with First Nations communities. *Panelist: Canadian Environmental Grantmakers’ Network*. June, 2016.

Emerging First Nations Stewardship in Coastal Canada: Challenges and Opportunities. *Keynote Speaker: Native Fish Society River Steward Conference.* September, 2014.

Stewardship of Salmon on the BC Coast in the 21st Century: Challenges and Opportunities
*Invited Speaker: Quatse Salmon Centre.* September, 2014.

The Koeye River fish weir: lessons in collaborative research and First Nations community partnership. *Invited Speaker: Coastal Connection Vancouver,* May, 2014*.*

*Conferences*

Indigenous community partnerships towards foundational understanding of wild salmon survival. *North Pacific Anadromous Fish Commission Meeting*. Portland, Oregon, USA, May 2019.

Estimating conservation targets for data limited sockeye populations in coastal BC. *North American Congress of Conservation Biology*. Toronto, Ontario, Canada, July 2018.

Koeye River Life-Cycle Monitoring. Contributed poster. *State of the Pacific Ocean Meeting.* Nanaimo, British Columbia, March 2018.

Landscape controls on carrying capacity of coastal sockeye. *Canadian Society of Ecology and Evolution, Annual Meeting*. Victoria, British Columbia, Canada, May 2017.

Koeye River Life-Cycle Monitoring: Estimating Survival and Productivity for Central Coast Sockeye Salmon. Contributed poster. *State of the Pacific Ocean* *Meeting*. Nanaimo, British Columbia, March 2016.

Spatial Contraction and Shifting Density Dependence: Implications for Conservation in Depressed Populations of Anadromous Fish. Contributed Talk. *American Fisheries Society – 145th Annual Meeting.* Portland, Oregon, August 2015.

Implications of spatial contraction for density dependence and conservation in a depressed population of anadromous fish. Contributed Talk. *American Fisheries Society – British Columbia and Washington Chapter Meeting.* Richmond, British Columbia, February 2015.

QQs Community Salmon Program: Building Capacity for Salmon Research and Monitoring on the Central Coast. Contributed Talk. *Hakai Research Exchange*. Sidney, British Columbia, October 24, 2014.

Some Shall Pass! Partial Barriers and Salmonid Life-history Diversity. Contributed Talk. *Ecology and Evolution Graduate Student Conference*. Brackendale, British Columbia, October, 2013.

Marine survival and spatial scaling of density-dependence, consequences for freshwater productivity in steelhead. Contributed Talk. *IDEAS*, January, 2013*.*

The influence of terrestrial resource subsidies on the top-down effects of multiple predators in a freshwater community. Contributed Talk. *Ecological Society of America Annual Meeting.* Austin Texas, August 5-12, 2011.

The role of terrestrial subsidies and multiple predators in stream food webs. Contributed Talk. *IDEAS.* January, 2011.