

Introduction to the *BC Centre for Aquatic Health Sciences*



INDIGENOUS RESOURCE
OPPORTUNITIES

CONFERENCE

Working Together with the Land

Nanaimo,

May 23rd, 2019



Our Mission

BC CAHS exists to improve the health of aquatic animals and ecosystems by developing applied scientific knowledge.



BC CAHS

- Third-party independent diagnostic and research facility
- Open to working with anyone who will accept hypothesis-based work
- A non-profit with no stakeholders
- Non-partisan position on salmon (although more is better)
- Stand-alone and independent of industries and government
- BOD selection is based on experience and relation to community and salmon



BC CAHS

- Research and diagnostics laboratory
- Fisheries and aquaculture
- In operation for 14 years
- Employs 15 local HQP
- Collaboration with NGOs, corporate, academic and government researchers



Business Model

Three models for Non-Profit Societies:

1. Government Funded
2. Donation / Foundation
3. Fee for services



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- BC CAHS is a fee for services NPS
 - Fisheries
 - Aquaculture
 - Regulatory (third party)
 - Government
- \$1.5m in sales annually
- Target is 5% profit for growth



Revenue Streams

- Diagnostics
 - Pathogen detection
- Research
 - Small-scale projects
 - Large-scale projects
- Education and outreach
 - Instruction and community work
- Ocean ecology
 - Early ocean survival
 - Sea lice ID



BC CAHS Diagnostic Services

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology	Virology
	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase	ATPase
		Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID	Plankton ID
			Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID	Sea Lice ID
			PCR	PCR	PCR	PCR	PCR	PCR	PCR	PCR	PCR	PCR	PCR
			Training	Training	Training	Training	Training	Training	Training	Training	Training	Training	Training
			Outreach	Outreach	Outreach	Outreach	Outreach	Outreach	Outreach	Outreach	Outreach	Outreach	Outreach
				Bioassay	Bioassay	Bioassay	Bioassay	Bioassay	Bioassay	Bioassay	Bioassay	Bioassay	Bioassay
					Cortisol	Cortisol	Cortisol	Cortisol	Cortisol	Cortisol	Cortisol	Cortisol	Cortisol
						BKD Elisa	BKD Elisa	BKD Elisa	BKD Elisa	BKD Elisa	BKD Elisa	BKD Elisa	BKD Elisa
							q PCR	q PCR	Ultra Filter	Ultra Filter	Ultra Filter	Ultra Filter	Ultra Filter
									GIS	GIS	GIS	GIS	GIS
									q PCR	q PCR	q PCR	q PCR	q PCR
									+ 8 assays	+ 10 assays	+ 10 assays	+ 10 assays	+ 10 assays
										Level 2	Level 2	Level 2	Level 2
											Melatonin Elisa	Melatonin Elisa	Melatonin Elisa
												Norovirus	Norovirus
													Genomic Analysis



Collaborators

National

- First Nations
- Community organizations
- Industry
- Provincial government
- Federal government
- Atlantic Veterinary College
- UPEI

International

- Norwegian Veterinary Inst.
- Multinational Pharma
- Chilean Vet labs
- International eNGOs
- USFWS

Third Party and Independent

- Drop it off and leave it
- Chain of Custody
 - Submission papers are the contract
- We run the prescribed tests
- Client gets the results
 - No alterations



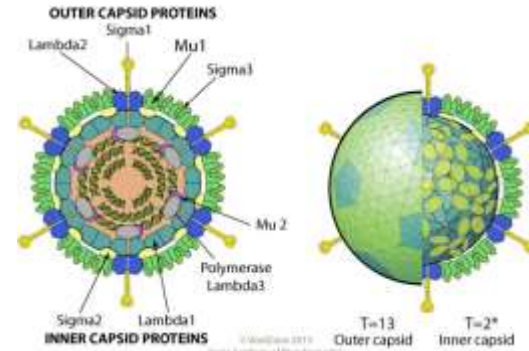
Quality Control and Accreditation



- International Standards Organization – ISO
- Canadian Food Inspection Agency – CFIA
- USFWS – Title 50
- Internal QA/QC programs
 - Internal and external audits
- Bench validations

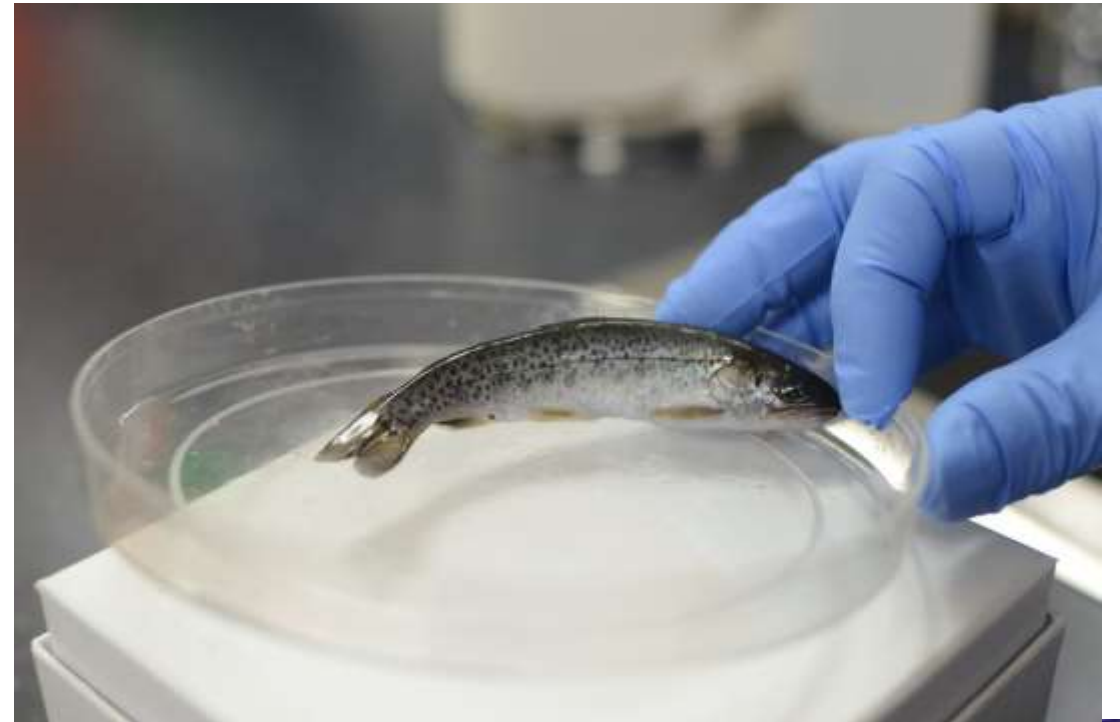
What Do We Investigate?

- Viruses
 - PRV, IHN, VHS
- Bacteria
 - Test, gene sequencing
 - Vaccine development
- Sea lice on wild fish
- Sea lice bioassays
- Plankton



Screening Smolts

- Seven Pathogens by molecular methods
- CFIA handles 'Notifiable' pathogens
- Extensive record



Opportunity



- Continued monitoring of the resource
- Training to collect, transport and submit samples
- Laboratory technicians
- Information analyst
- Complete the chain of custody