



Obtaining a Social License for IMTA: Challenges and Opportunities in British Columbia



**NSERC Canadian Integrated
Multi-Trophic Aquaculture Network**

**Réseau canadien d'aquaculture
multitrophique intégrée du CRSNG**

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Multi-Trophic Aquaculture Network

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Three linked Domains

- Domain 1 - environmental system performance and species interactions
- Domain 2 - system design and engineering
- Domain 3 - economic analyses
 - social implications (governance, community development, First Nations)

Province of British Columbia

Coastline 27,000 km
(China 14,500 km)

Population 4,400,000

Vancouver 2,313,000







Coastal Communities and Aquaculture

- British Columbia produces more than 60% of Canada's aquaculture output by value.
- Farm-raised salmon is B.C.'s highest-valued agricultural export with almost \$300-million in value exported each year. Salmon farming in B.C. provides 6,000 direct and indirect jobs while contributing over \$800-million annually to the provincial economy.

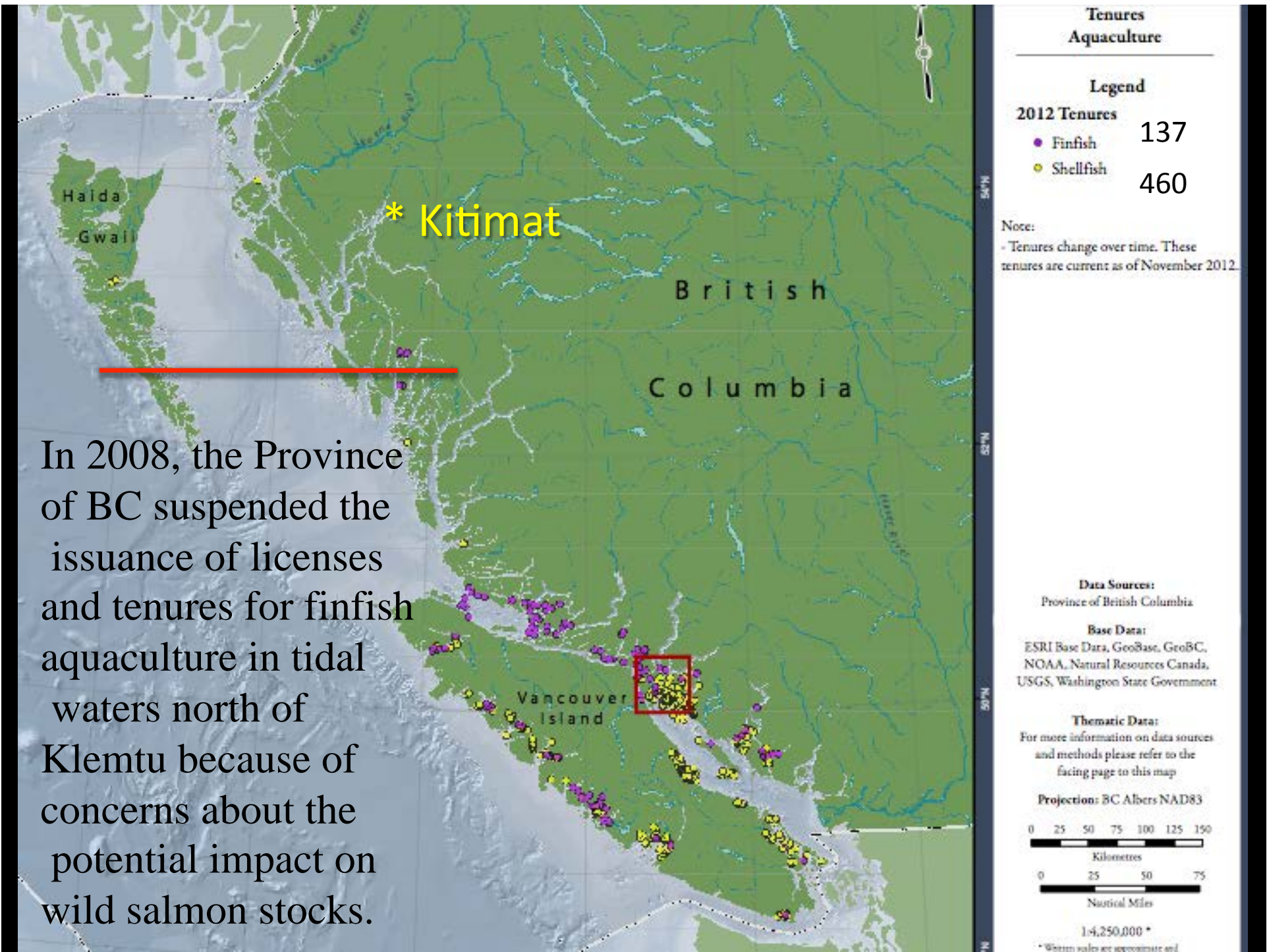
- Shellfish industry provides over 1,000 full-time jobs in rural and coastal communities and has \$33 million in farm gate sales yearly.
- There is large physical potential for the development of aquaculture in B.C.
- There are, however, many social and community considerations that enter into development discussions.

Coastal Communities and Aquaculture



Aquaculture, particularly salmon farming, is a hotly contested issue in B.C.

- Strong NGO campaigns against the industry
- Legal challenges
- Community protests
- Conflicting science
- Media involvement



**Tenures
Aquaculture**

Legend

2012 Tenures	
● Finfish	137
● Shellfish	460

Note:
- Tenures change over time. These tenures are current as of November 2012.

Data Sources:
Province of British Columbia

Base Data:
ESRI Base Data, GeoBase, GeoBC, NOAA, Natural Resources Canada, USGS, Washington State Government

Thematic Data:
For more information on data sources and methods please refer to the facing page to this map

Projection: BC Albers NAD83

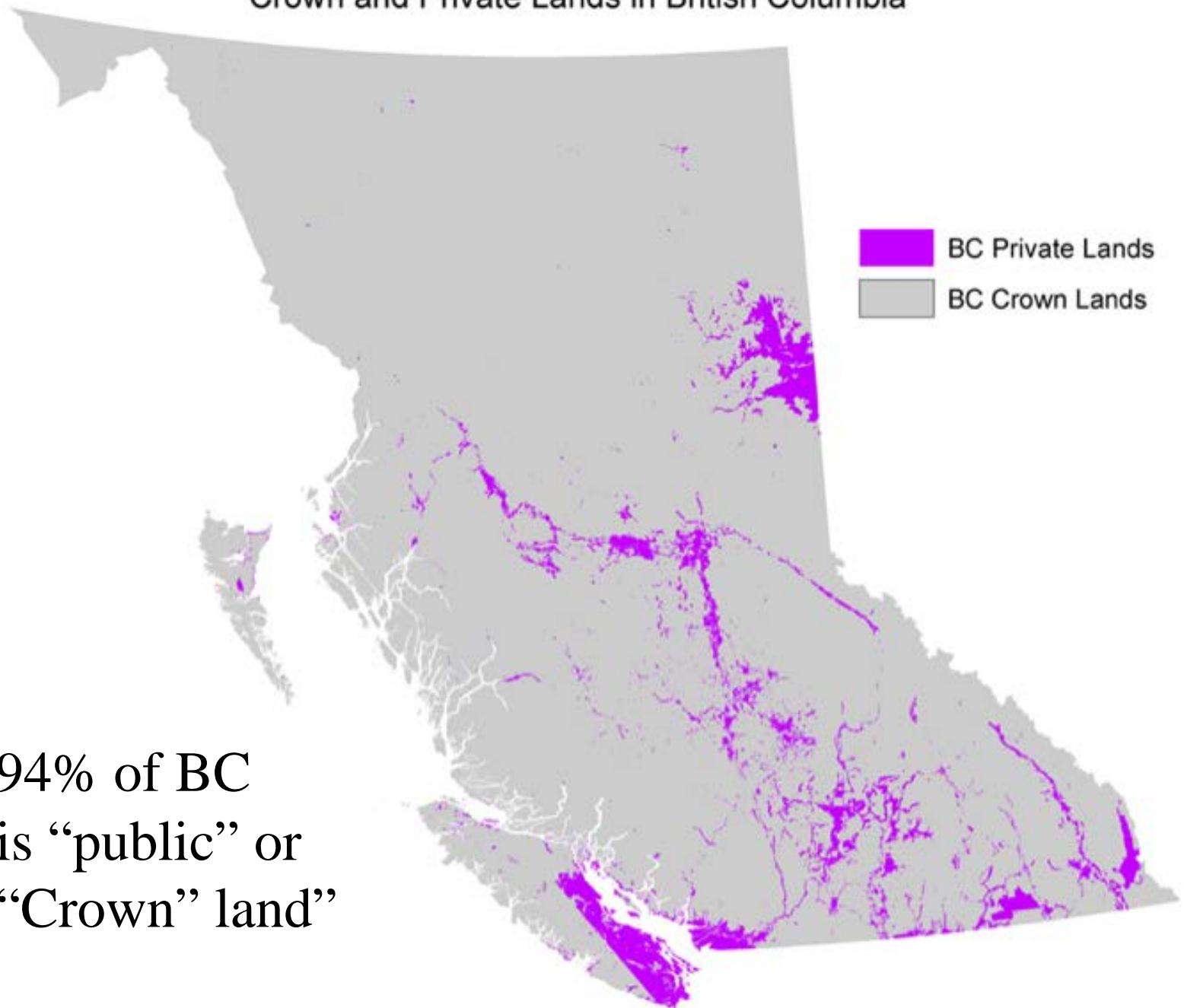
0 25 50 75 100 125 150
Kilometres

0 25 50 75
Nautical Miles

1:4,250,000 *

In 2008, the Province of BC suspended the issuance of licenses and tenures for finfish aquaculture in tidal waters north of Klemtu because of concerns about the potential impact on wild salmon stocks.

Crown and Private Lands in British Columbia



94% of BC
is “public” or
“Crown” land”

First Nations Traditional Territories

Most of BC is unceded. It is land traditionally under the jurisdiction of distinct nations.

Aboriginal Title is an unresolved issue that creates uncertainty and, at times conflict, over the development of natural resources.

Most aquaculture tenures are located in First Nation traditional territories.



BC First Nations and Aquaculture

“*Social license*” generally refers to a local community’s acceptance or approval of a project or ongoing presence in an area.

The **social license** for aquaculture needs to be addressed through the perspective of British Columbia’s First Nations communities.

Well Being in Coastal First Nations Communities



Many communities are facing several challenges:

- poor housing and overcrowding
- high unemployment rates
- high rates of physical and mental health issues, and suicide.
- lower life expectancies.
- half of First Nation children in BC live below the poverty line

Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya

Addendum

The situation of indigenous peoples in Canada* July, 2014

Summary

In the present report, the Special Rapporteur on the rights of indigenous peoples examines the human rights situation of indigenous peoples in Canada on the basis of research and information gathered from various sources, including during a visit to Canada from 7 to 15 October 2013. The visit was a follow-up to the 2004 visit to and report on Canada by the previous Special Rapporteur (E/CN.4/2005/88/Add.3). During his visit, the Special Rapporteur met with government officials at the federal level, and at the provincial level in six provinces.

The relationship of Canada with the indigenous peoples within its borders is governed by a well-developed legal framework and a number of policy initiatives that in many respects are protective of indigenous peoples' rights. But despite positive steps, daunting challenges remain. The numerous initiatives that have been taken at the federal

been insufficient. The well-being gap between aboriginal and non-aboriginal people in Canada has not narrowed over the past several years; treaty and aboriginal claims remain persistently unresolved; indigenous women and girls remain vulnerable to abuse; and overall there appear to be high levels of distrust among indigenous peoples towards the government at both the federal and provincial levels.

Well Being in Coastal First Nations Communities

- For all groups along the BC Coast, the ocean was the major source of food, providing salmon, halibut and other fishes, shellfish, smelt, crabs, and seaweed.
- Harvesting shellfish for food and cultural purposes is a longstanding practice that is deeply rooted in First Nations communities.
- 1,000 year old First Nations “*clam gardens*” dramatically increased the survival, growth rate and size of shellfish using rock-walled beach terraces.

Aquaculture development in BC requires consultation with First Nations Communities.

Some communities oppose the the further expansion of the industry and would like to see existing operations closed down, arguing that salmon farms harm wild salmon by spreading sea lice and disease. They create dead zones on the ocean floor due to the accumulation of farm waste, and allow the escape of non-native Atlantic salmon.



28 First Nations have salmon farms in their territories

- Heiltsuk
- Ahousaht
- Huu-ay-aht
- Tseshaht
- Mowachaht/Muchalaht
- We Wai Kum
- We Wai Kai
- Xwemaljkwu (Homalco)
- Ucluelet
- Klahoose
- Sliammon
- Gwawaineuk
- Tsawataineuk
- Kwicksutaineuk-ah-kwaw-ah-mish
- Tla-o-qui-aht
- Namgis
- Ehattesaht
- Mamalilikulla-Qwe'Qwa'Sot'Em Band
- Komox
- Nuchatlaht
- Gwa'sala/Nadwxda'xw
- Kwaikah
- Sechelt
- Qwe Qwa Sot Enox
- Kwakiutl
- Quatsino
- Kitasoo/Xai'xias
- Tlowitsis

Eighteen have protested or initiated lawsuits against the industry

- **Heiltsuk**
- **Ahousaht**
- Huu-ay-aht
- Tseshah
- Mowachaht/Muchalaht
- We Wai Kum
- We Wai Kai
- **Xwemaljkwu (Homalco)**
- **Ucluelet**
- **Klahoose**
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Pentlatch Seafoods Ltd. is a company wholly owned and operated by the K'ómoks First Nation on Vancouver Island, British Columbia, Canada, named in honour of the house of Pentlatch. The K'ómoks further acknowledge their heritage by choosing as their primary brand the mask of *Komo Gway* – The Ruler of the Undersea. Today, Pentlatch Seafoods employs over 20 full-time people, produces over 2 million oysters a year and has worldwide sales including Taiwan, China, the United States and Canada. In 2011 the company inked a western distribution deal with Thrifty's Foods and also offers Ready-To-Eat (RTE) oysters rockefeller in supermarkets to compliment their shucked product line.



Expansion plans include the cultivation of geoduck, sea urchins, sea cucumbers and horse clams. Pentlatch Seafoods Ltd. (PSL) continues to actively culture Manila Clams and Pacific Oysters on our own beaches and to ensure the future sustainability of these resources we plant millions of clam and oyster seed on an annual basis. **We are continually upgrading**

Some communities are supporters of the industry and see it as an important source of employment and tenure fees.

Kitasoo Aquafarms

The Klemtu Band as a business entity to support its new salmon aquaculture initiative formed Kitasoo Aquafarms Ltd. in 1986. Kitasoo Aquafarms operated a production salmon farm near Klemtu from 1989 to 1994. Since 1998, Kitasoo Aquafarms has partnered with Marine Harvest Canada for the purposes of salmon farming. Kitasoo Aquafarms currently holds 4 salmon farm tenures and is currently developing 2 additional tenures as well as research on potential shellfish farming sites in the Kitasoo traditional territory.





ABORIGINAL AQUACULTURE ASSOCIATION

The Aboriginal Aquaculture Association is a sectoral organization designed to assist, support and facilitate the meaningful participation of First Nations in sustainable aquaculture development.

It serves as a resource body providing guidance and advice with respect to sustainable aquaculture development, regulation and management of aquaculture.

It believes that aquaculture development has the potential to play a major role in the diversification and strengthening of the local and regional economies of First Nations.

The Aboriginal Aquaculture in Canada Initiative

The Aboriginal Aquaculture in Canada Initiative is a new program that supports Aboriginal economic development in the Canadian aquaculture sector.

Funded through the Federal Framework for Aboriginal Economic Development Strategic Partnership Initiative. June, 2014

Aboriginal communities are in a unique position to benefit from sustainable aquaculture development due to their aquatic resources, rights, and special access to aquaculture development sites.

Update 2014-09-05: National Aboriginal Aquaculture Fund

2014-2015 Call For Proposals

Wed, 2014-08-20

A National Aboriginal Aquaculture Fund (NAAF) has been established through the Aboriginal Aquaculture in Canada Initiative (AACI). A total of \$400,000 is available nationally for the fiscal year 2014-2015. This funding is accessible by First Nations, Aboriginal organizations and entrepreneurs.



Marine Planning Partnership for the North Pacific Coast (MaPP)

The MaPP initiative is a partnership between the Province of British Columbia and 18 member First Nations that is planning for marine uses and long-term ocean health on B.C.'s North Pacific Coast



North Vancouver Island Marine Plan

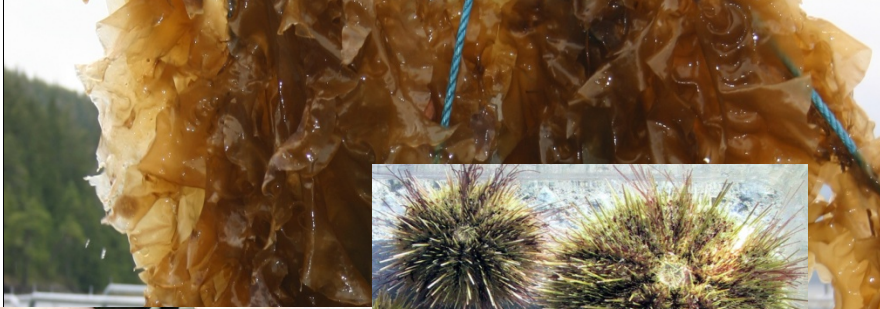
Issue 1. Support for, integration and rationalization of existing and future aquaculture activities.	
Objective	Strategies
1.1 Increase the support of existing and future ecosystem-based aquaculture activities.	1.1.1 Increase government and industry efforts to establish and implement ecosystem-based management practices for aquaculture.
	1.1.2 Encourage research and/or pilot projects in marine plant and integrated multi-trophic aquaculture.
Issue 2. Opportunities for new aquaculture industry sectors.	
Objective	Strategies
2.1 Maintain local aquaculture opportunities in Plan Area.	2.1.1 Work with industry and key marine sectors to identify areas with high shellfish and other invertebrates and plants aquaculture capability for potential establishment of provincial government notations of interest.
	2.1.2 Work with industry to identify opportunities and incentives for entrepreneurial business for aquaculture operations.
	2.1.3 Work with relevant agencies to research new marine species that offer viable, long term, EBM based aquaculture opportunities (including but not limited to sablefish, kelp, sea cucumber and urchin production).
	2.1.4 Support the termination of unused provincial shellfish tenures and their reallocation to new applicants, in accordance with the tenure provisions.

“Integrated multi-trophic aquaculture on existing sites also has potential for increasing revenue generation through efficient use of sites, wastes and by-products, in some locations.”

Located along the northwestern coast of Vancouver Island, this farm has served as the pre-commercial R&D site for SEAVision's Sustainable Ecological Aquaculture System. It holds the first commercial aquaculture license of its kind in Canada.

Platform for CIMTAN graduate student research - University of Victoria and the University of New Brunswick.





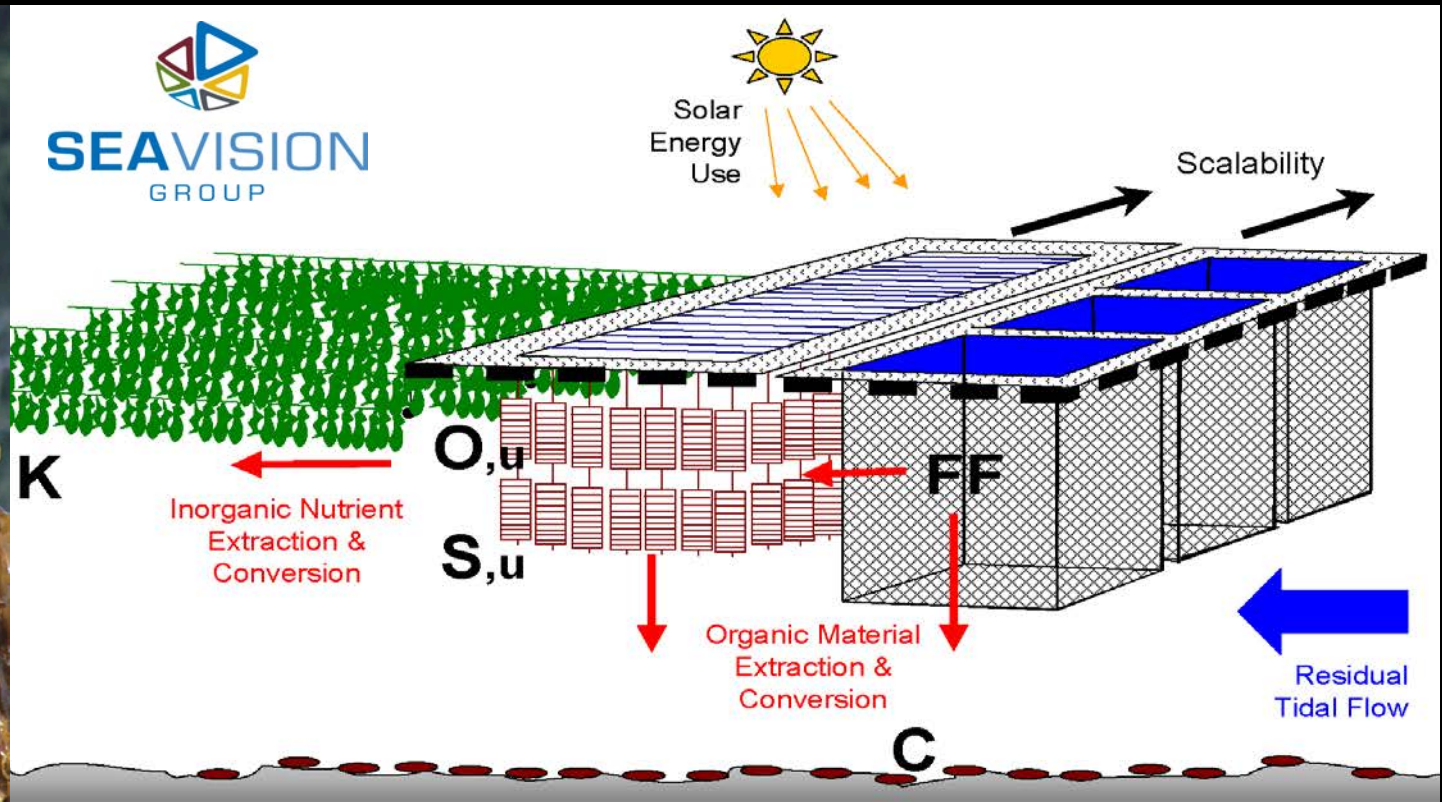
Multi-Species License

- Sablefish Fed Component
- Blue/Gallo Mussels
 - Pacific Oyster Organic Extractive Component (filtration)
 - Japanese Scallop
 - Cockles
- Green/Red Urchins Organic Extractive Component (deposit)
- Sea Cucumber
- Kelp/Seaweed Inorganic Extractive Component

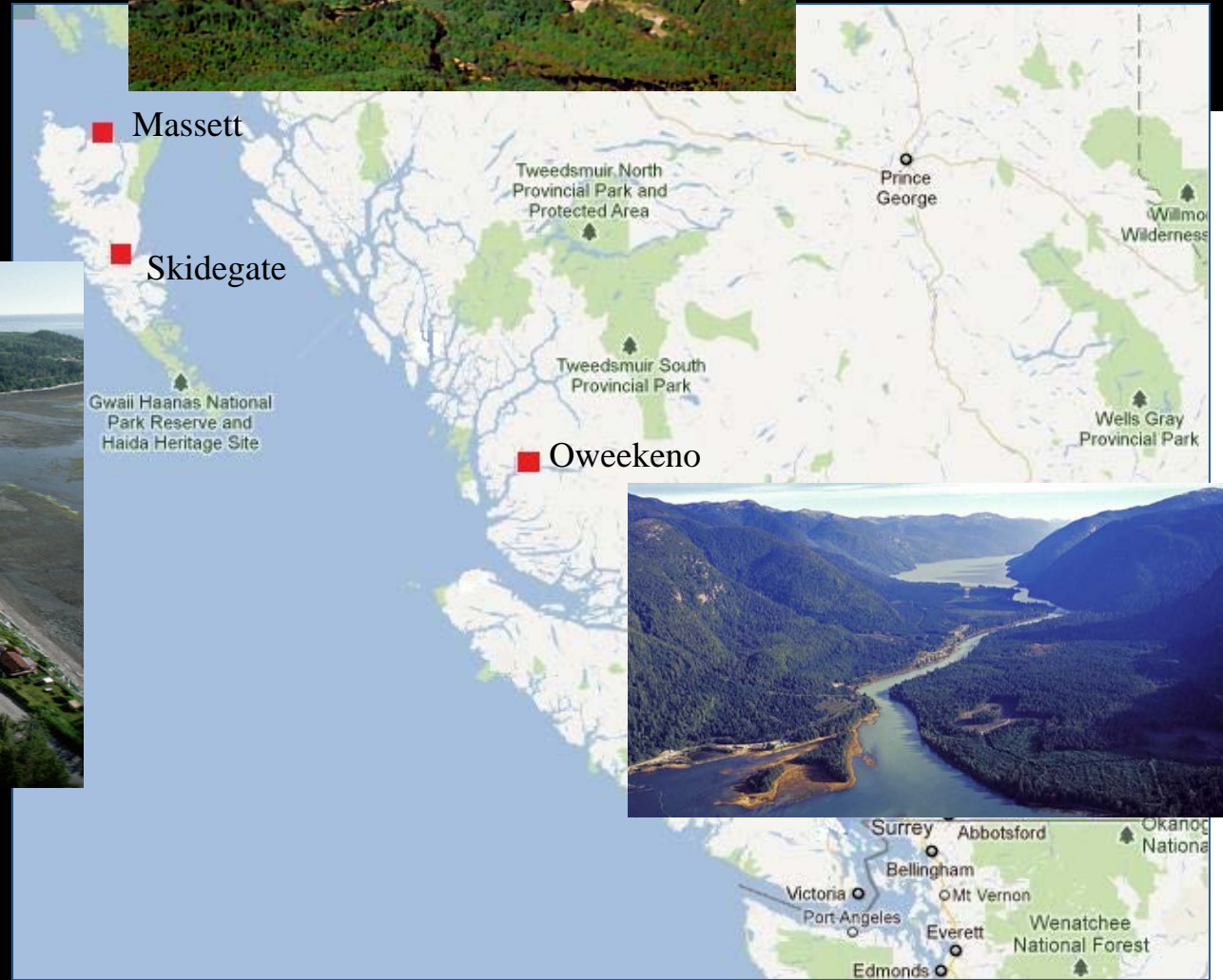
High valued commercial species WITH complementary ecological roles

System Design

- Sustainable Ecological Aquaculture



First Nations Key Informant Survey



Key Informants

- The criteria for this research was based on the individual being of indigenous descent, involved in the aquaculture industry, or involved in community decision-making i.e. elected and hereditary chiefs, community board members, community economic development officers.



Seaweed –Most people had never considered farming seaweeds commercially. Moreover, it was not viewed as being of high value compared to other types of aquaculture.

“I wouldn't see a problem with seaweeds. It's something that we use pretty consistently.”



Shellfish Aquaculture – is seen as a promising economic development opportunity. It can be done in a way that is consistent with traditional values and practices. Main concerns are the possible introduction of alien species, and capacity issues – training needs, financing, and market access.

“There is no better place than Haida Gwaii to farm shellfish.”

“I completely agree with shellfish aquaculture and think it is a wonderful way of growing a large crop in a very small area.”

“I see an incredible opportunity for our people, absolutely incredible opportunity.”




Finfish Aquaculture – very strong opposition to salmon farming. Main concerns are perceived environmental and ecosystem impacts. Some interest in learning more about sable fish farming.

“Don’t even talk about it, don’t even mention it. ‘Cause we’ve been hearing about it on the news and everything, it’s kind of the same thing as Enbridge, the same package, and we don’t like either one of them.”

“One thing I don’t like about salmon fish farming is it takes so much bait fish to produce. I think its 5 pounds of bait fish to produce 1 pound of salmon flesh.”

1.31 to 1.0

“I mean, the chemicals jammed into those farmed fish, I don’t think they would be healthy for anybody long term.”

 **Integrated Multi-Trophic Aquaculture** – Generally, limited awareness of IMTA. Description of the system brought requests for more information about the technology, commercialization possibilities training needs and opportunities. Main concern was over finfish (i.e. salmon) as the fed component. Open to discussion about sable fish.

“First Nation people always say, we’re stewards of our land and our sea. To me this is good stewardship.”

“Well I absolutely love this system. I think this is the way that we’re going to have to go to be able to make it safe and stable for communities especially First Nations communities, just amazing.”

Respondent already familiar with IMTA



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RE: Invitation to Host Research Scientists and Participate in Seminar on INTEGRATED MULTI-TROPIC AQUACULTURE (IMTA)

Seminar Theme: Making linkages: exploring the future of aquaculture and the potential of IMTA in British Columbia

- Disseminate results of CIMTAN research initiative to First Nations representatives
- Engage in small group discussions to consider opportunities and barriers for the development of IMTA
- Explore next steps of IMTA research and development, and knowledge mobilization needs within First Nations communities.

Response to Date

- Nicola Tribal Council Central Coast First Nations (4)
- Okanagan First Nations
- Lower Fraser First Nations
- Nanwakolas Council Nations (North Vancouver Island) (7)
- Laxkw'alaams First Nation
- Kitsumkalum First Nation



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Thank you!

Special thanks for comments to:

Erin Latham U. of Victoria

Katie Tebbutt U. of Victoria

Grant Murray Vancouver Island U.