

# Clam Garden Eco-cultural Restoration in the southern Gulf Islands



Photo: Iain Robert Reid

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Parks  
Canada

Parcs  
Canada

Canada

# Did you know...

- 1,000's of years ago, First Nations on BC Coast were active shellfish engineers for 1,000's of years?
  - Kilometers of rock walls created, many tonnes of rocks moved
  - Increase production by as much as 400%
  - In front of traditional settlements
- No longer in production
  - Virtually unknown to western science until recently. Lived in the memory of First Nations
- Now imagine...
  - A living landscape once again
  - Presents opportunity to combine ATK + science to benefit people, culture, and ecosystem



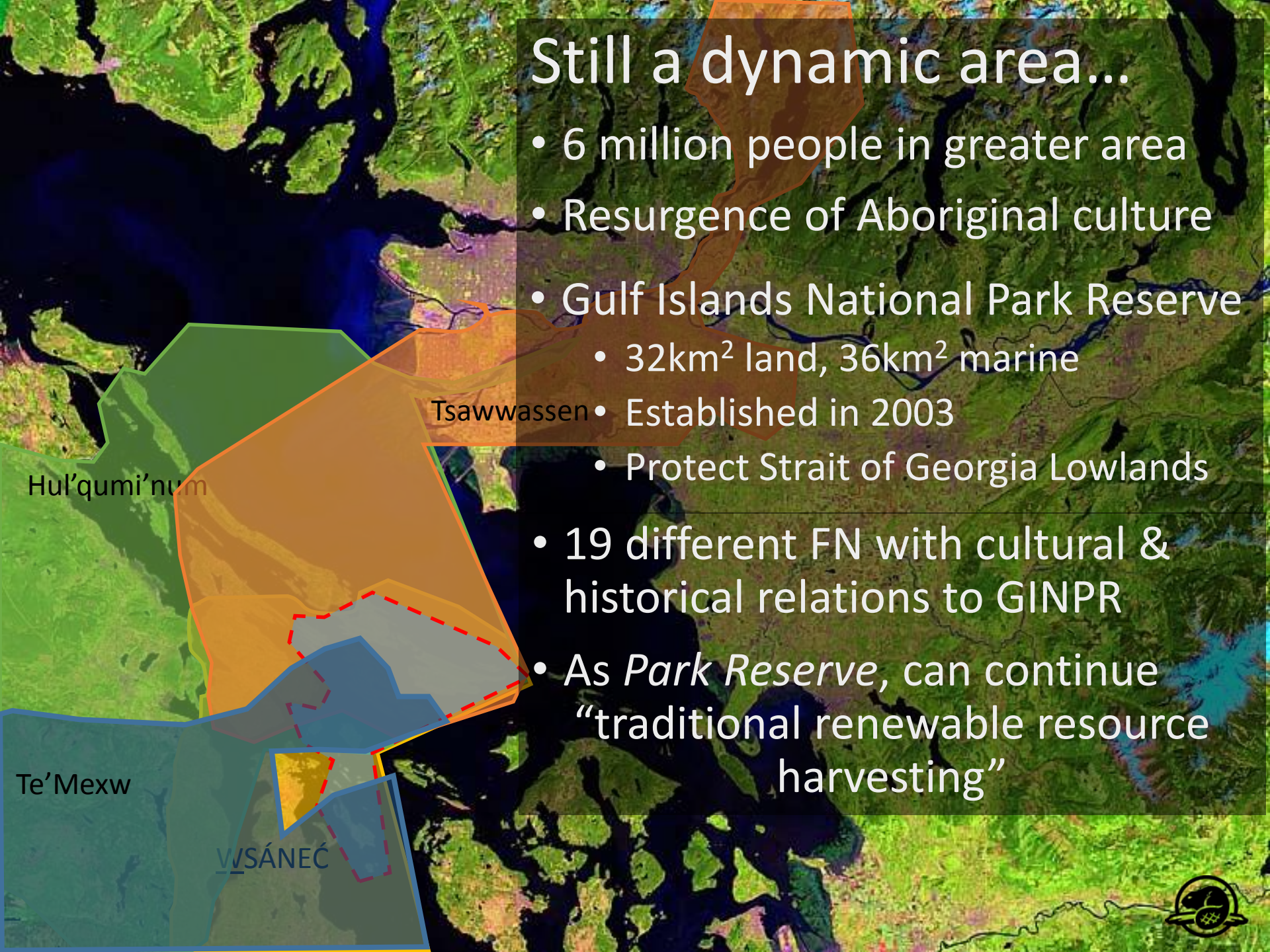
# Southern Gulf Islands

- Highly productive area
  - Protected coastline
  - Fraser River input
  - Upwelling from Pacific Ocean
- Significant Indigenous Population
  - 5 language groups
  - 10's of thousands of people
- Managed ecological landscapes
  - “Dropped out of heaven”



# Still a dynamic area...

- 6 million people in greater area
- Resurgence of Aboriginal culture
- Gulf Islands National Park Reserve
  - 32km<sup>2</sup> land, 36km<sup>2</sup> marine
  - Established in 2003
  - Protect Strait of Georgia Lowlands
- 19 different FN with cultural & historical relations to GINPR
- As *Park Reserve*, can continue “traditional renewable resource harvesting”



# The importance of clams



- Still an important staple
- Many barriers to harvesting
- Gaps in knowledge
  - Less contemporary harvest
  - Little stock assessment

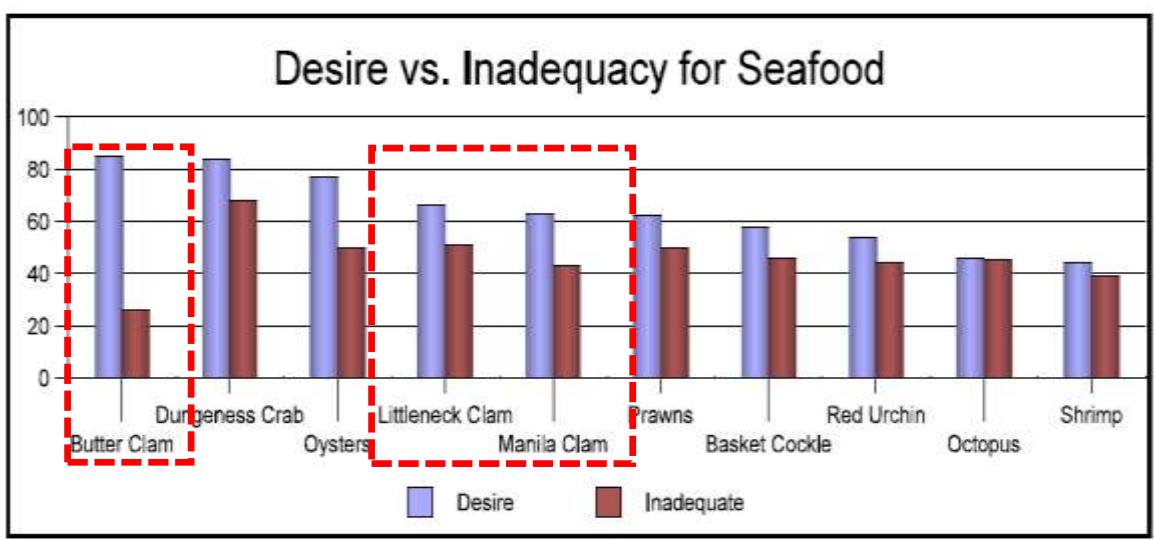
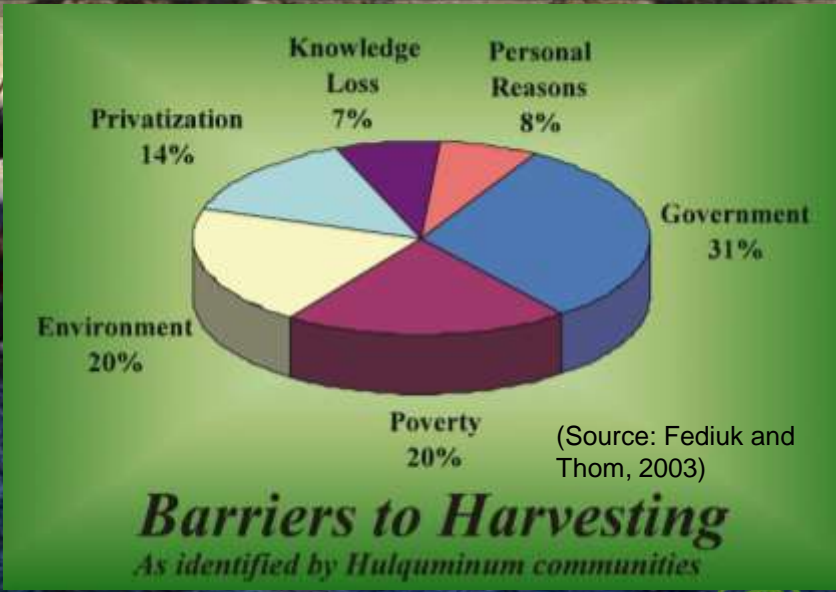


Figure 2. Desire vs. Inadequacy for Seafood (Source: Fediuk and Thom, 2003)



(Source: Fediuk and Thom, 2003)

Photo: Iain Robert Reid

# A time of learning together

Pilot project: gather knowledge to inform sustainable & safe harvest

- Scientific data collection:

- On populations (part of EI monitoring)
- On pollutants and other concerns

- Traditional knowledge collection:

- Minimize government barriers
- Holistic knowledge

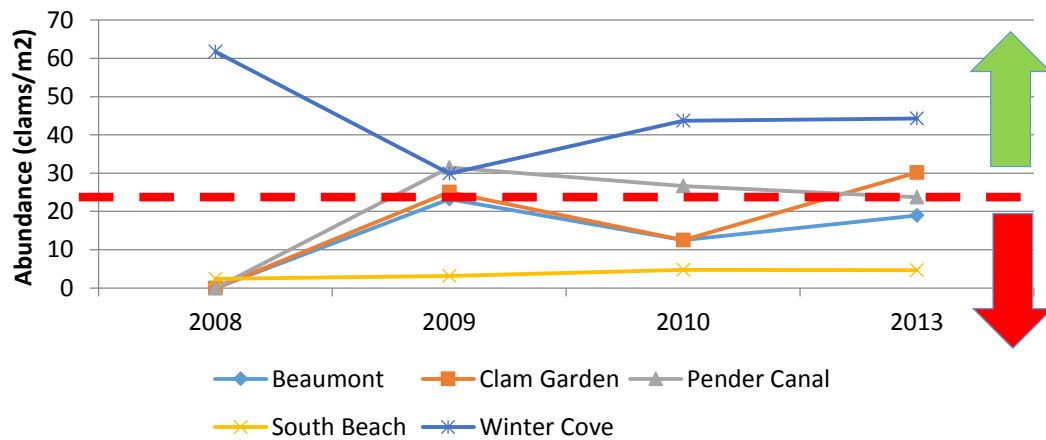
- Use together to tell understand the rise and fall of shellfish



# What did we learn?

## Unhealthy population

Average bivalve abundance (harvestable clams) by site, 2008-2013



## Cultural Landscapes managed by First Nations

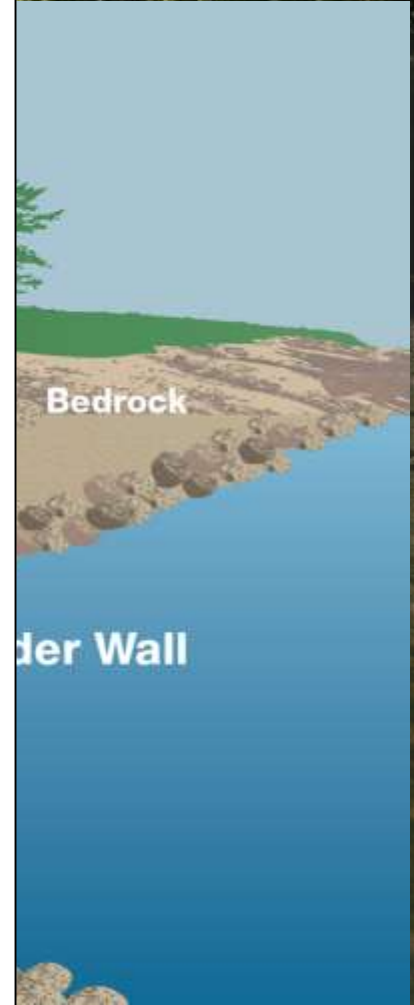
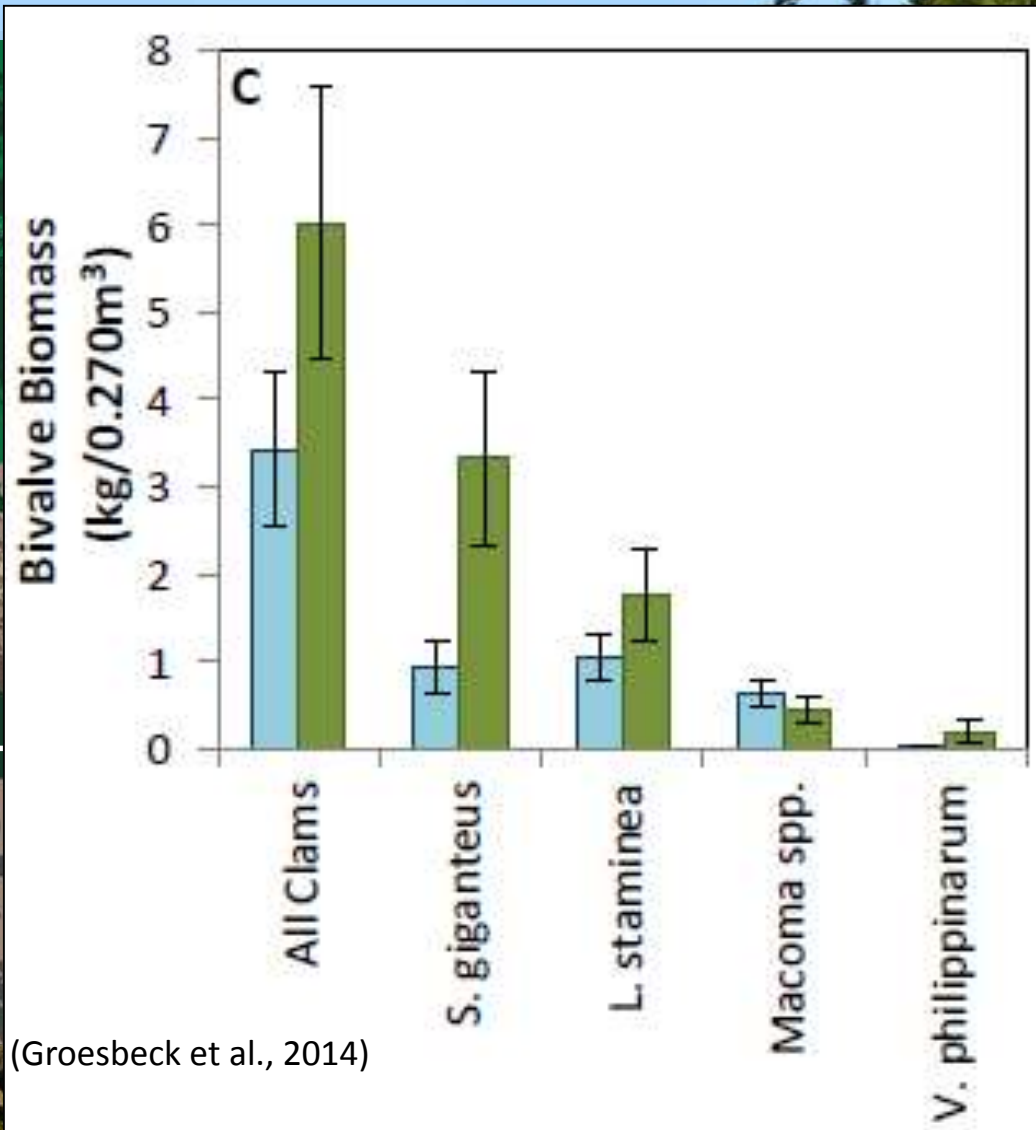
- Unhealthy landscape
- “Clam gardens”



Photo: Dan Anthon



# What is a clam garden?





# Clam garden restoration project

- **Question:** What impact do clam gardens have on intertidal ecosystem?
- **Experiment:** Rebuild 2 clam gardens with Coast Salish and manage them for 5-6 years
- Examine impact of **wall & management actions**
- **Guided** by traditional knowledge and community
- **Monitor** using science and TK
- **In the end:** Did conditions improve or not?
- **Provide recommendations** to Parks Canada and other resource managers
  - **Traditional management in the modern day**



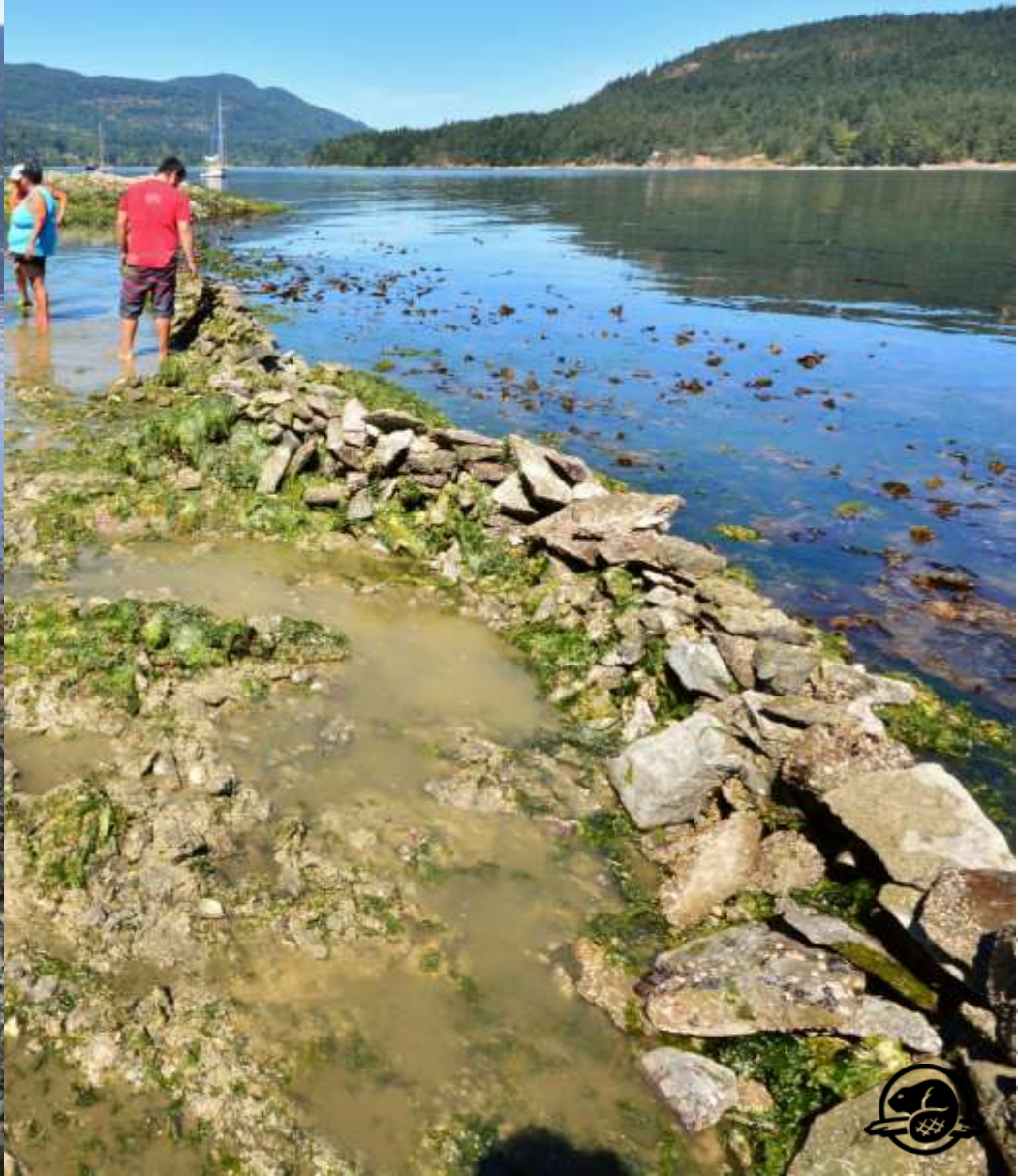
# Where are we now?

- Two TK working groups
  - Community-driven
  - Identified experts – language, culture, harvesters
  - Guide restoration activities – traditional guidelines
- Rebuilding with community
  - Elders and Youth culture & science camps
  - School and community group restoration trips
  - Develop traditional teaching tools
- Research partnerships
- 200+ community volunteers
- Outreach BC Ferries, Vancouver Aquarium

**2008**



**2015**



# Documentation & Treatment of TK

- Shellfish TK Project
  - Put control in hands of Nation
  - TOR – agreed-to goals
  - Field visits, Ind interviews, group workshops
- Clam Garden Restoration Project
  - Control in hands of Nation
  - Expert working groups
  - Field visits
  - Cultural guidance
  - Knowledge holder workshops to confirm



# Successes

+

# Challenges

- Relationship-based
  - Create trust
  - Learn how to gather knowledge
- Equals from the outset
- Community-driven
  - Years of saying “yes”
- Acknowledge barriers to overcome them
  - Respect, IP
- Turn over control



Photo: Nicole Smith



# Successes

# + Challenges



Photo: Nicole Smith

- Discerning meaning
- Community timelines vs. research timelines
- A lack of knowledge
- Competing traditional knowledge
- Trust
- Leading vs. co-opting
- Overlapping territories



*Thank You*

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Acknowledgements:

WSANEC and Hul'q'umi'num Nations, SFU, UVic Dept. of Anthropology, Royal Roads University, Northwest Indian College, WSANEC Tribal School, School District 76, Parks Canada, Dana Lepofsky, Anne Salomon, John Harper, Amy Groesbeck, Marco Hatch, Nicole Smith, Audrey Dallimore, Leslie King, Malcolm Nicol, and the rest of the Clam Garden Network

