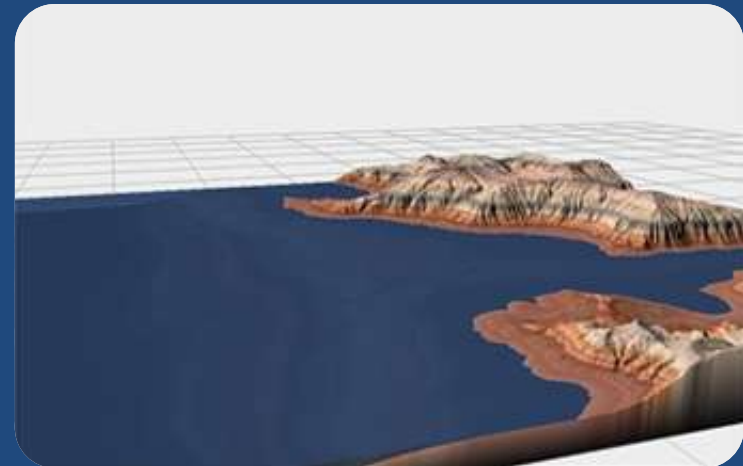
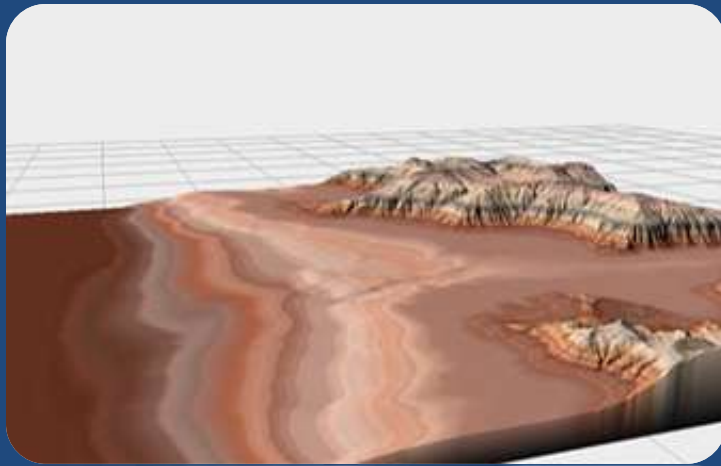


Rising Tides and Expanding Footprints: Maritime Heritage and Coastal Erosion into the Twenty-First Century



Rich Hutchings

24 MAY 2011

Panelists

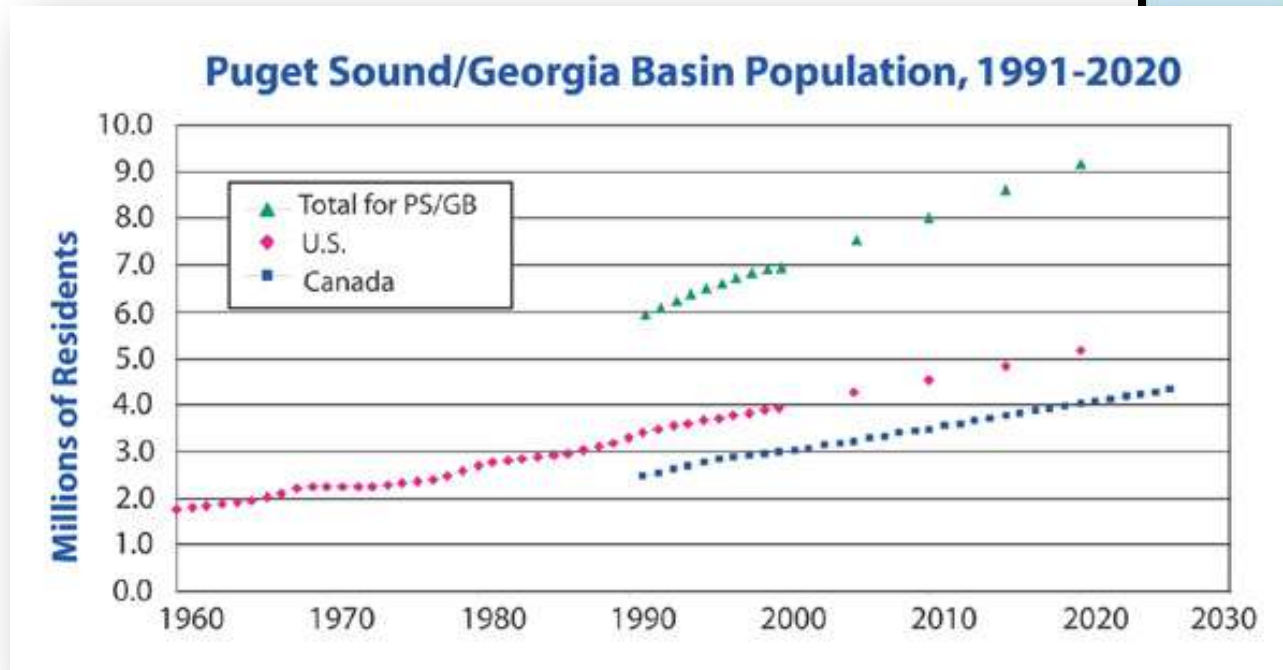
- Rich Hutchings
 - PhD candidate, Interdisciplinary Studies, UBC
 - Maritime Heritage and Coastal Erosion
 - 10 years experience
- Maurice Major
 - WA State DNR, Aquatic Lands Division
 - 20 years experience
- Gary Wessen
 - Wessen and Associates
 - 40 years experience

Background

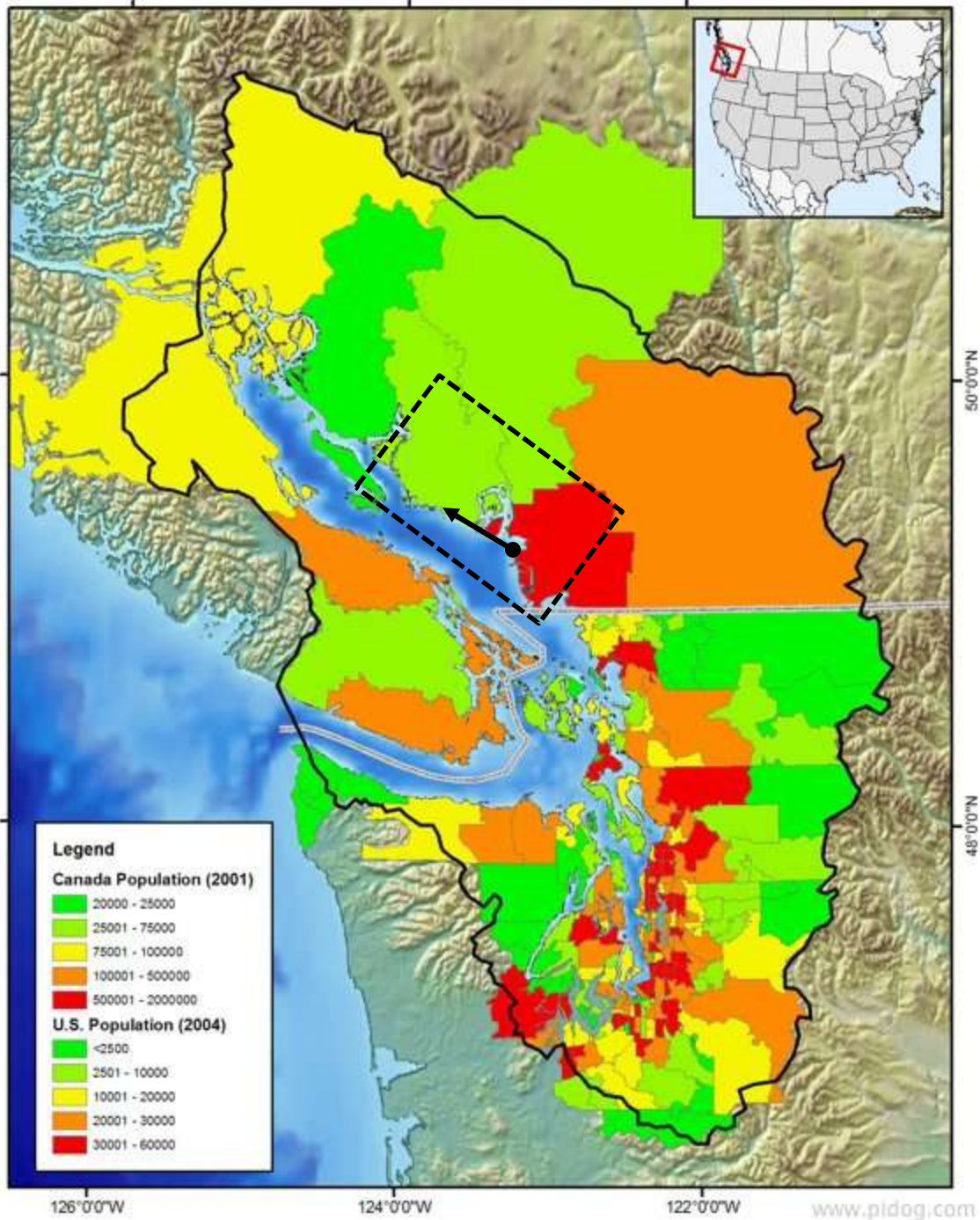
The Coastal Erosion Threat

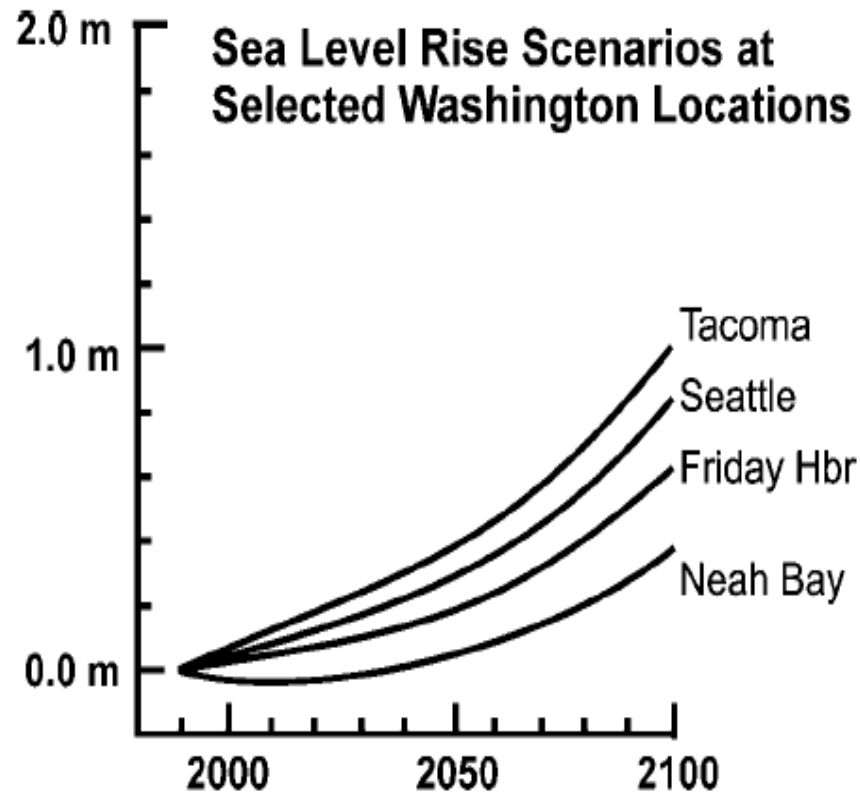
- **Population increase**
 - development
 - recreation
 - resource extraction
- **Climate change**
 - increased storminess
 - sea-level rise
- **Coastal Erosion *affects people***
 - Directly
 - e.g., aquatic resource base, contaminated water, forced relocation
 - Indirectly
 - e.g., heritage (including archaeology)
 - **“The quiet crisis”**

Salish Sea Population Growth Scenarios, 1991-2020



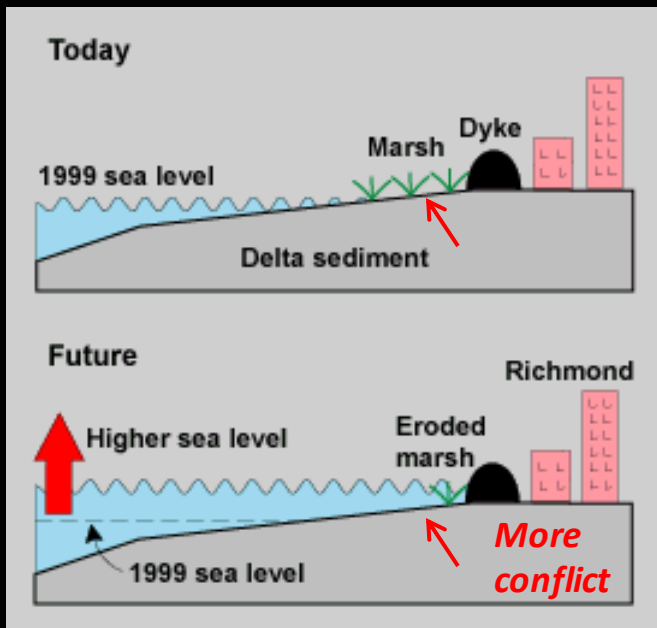
Two million more people in the next 20 years



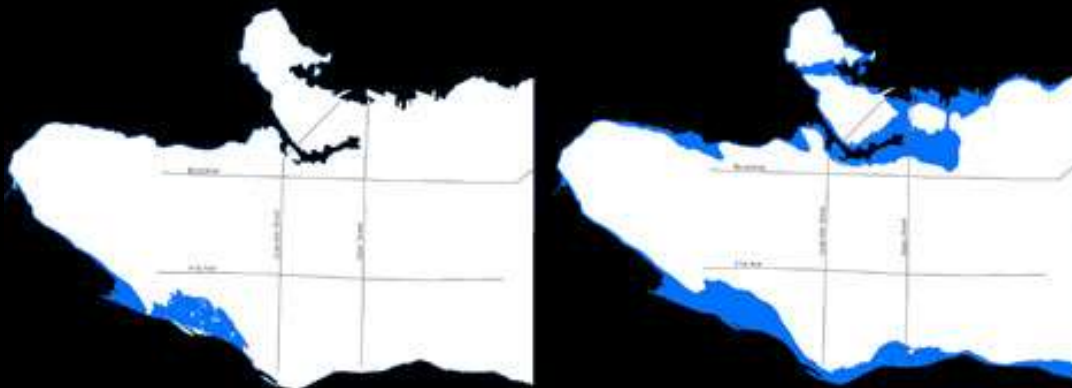


SLR of 0.5 to 1.0 meter over the next 100 years

Coastal squeeze



Clague and Bornhold 1980



2 m and 7 m inundation of Point Grey. Bing Thom Architects.

Background

Coastal Zone Management: **Three Key Factors**

- ICZM study (European Commission 1999:5)
- Continued degradation and mismanagement of coastal areas can be traced to problems related to:
 - **insufficient or inappropriate information**
 - about the state of coastal zones and
 - about the impact of human activities
 - **insufficient coordination**
 - between different levels and sectors of administration, and their policies
 - **insufficient participation and consultation**
 - of the relevant parties/communities ('stakeholders')

Background

Coastal Zone Management: **Land Use**

- Pop. growth is leading to *increased conflict* between competing uses in the coastal zone
 - “low impact uses being replaced by intensive uses that are profitable in the short-term, but which undermine the long-term potential of the coast, by reducing its ‘resilience’” (EC 1999:7)

Background

Coastal Zone Management: **Key Problems**

- Unplanned and uncontrolled development
 - destroys landscapes, reducing quality of life
 - destroys the resource base that supports economic activity, attract tourists, and supports fisheries
- Coastal erosion
 - damages natural habitats and human settlements
 - destroys economic activities and threatens human life

(EC 1999:8)

Background

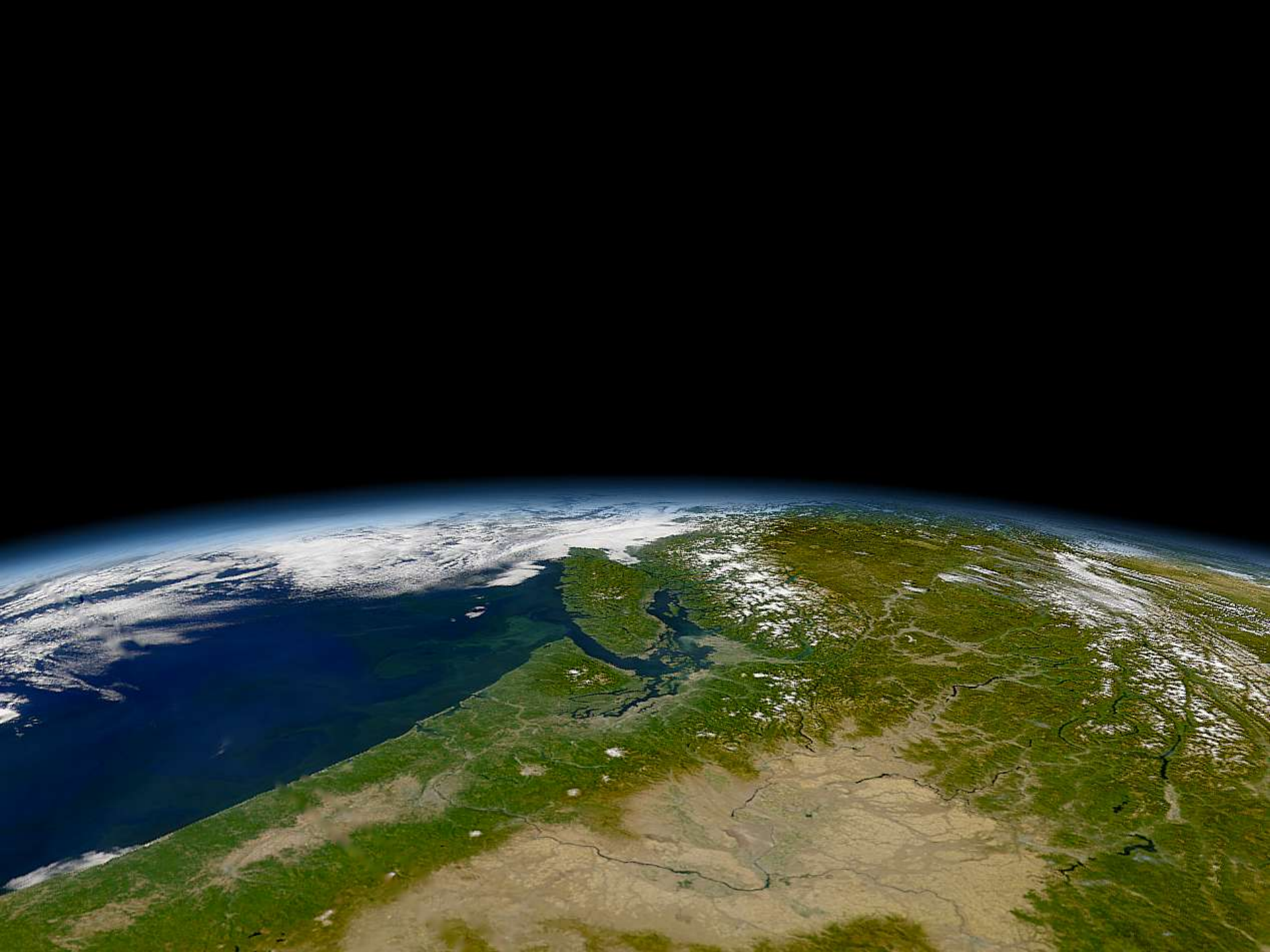
Coastal Zone Management: **Conflict**

- Coastal zone conflict can arise from:
 - competing sectoral interests
 - cultural differences and traditions
 - inaccurate, withheld or disputed data
 - ignorance or unconcern for others' needs
 - structural, social or economic inequalities
 - clashes of interest on specific issues or procedures
 - personalities and power struggles (EC 1999:13)

Seamless approach

(Fulford, Champion, and Long 1997)

- Because maritime cultural landscapes can extend seamlessly from dry land, through the littoral zone, and into offshore areas, *“effective management of the coastal archaeological resource cannot be achieved without due consideration of **marine** as well as terrestrial archaeological remains”*



Background

Coastal Archaeology and Heritage: **PNW Coast**

- Historical emphasis on
 - physical/material record
 - terrestrial shell middens
 - environmental change
 - intertidal features
 - ‘externalist’ approaches = researcher/community disconnect
- Alternative approaches are limited
 - intangible (values and meaning to community/ies)
 - ‘internalist’ approaches
 - Elroy White (2006)
 - Heiltsuk intertidal stone features

Study Goals

- Investigate Indigenous littoral heritage stewardship
 - Coastal erosion threat
 - assess the impact of coastal change on *shíshálh* (Sechelt) First Nation littoral heritage (past, present, future)
 - Varying social meanings and values attributed to MCL's
 - focus on what heritage is deemed 'significant' by them
 - Contemporary legal-political climate of contested landscapes
 - contribute to the *shíshálh* Marine Use Plan by anticipating and strategizing for future coastal change

How can littoral heritage be effectively 'managed' in light of coastal erosion while being responsive to local values?

What sites do we value?



More than 24 meters (80 feet) of coastline retreat in 2007 on Alaska's Beaufort Sea. *Photo by Benjamin Jones, USGS.*

What do we save?

What do we let go?



This medieval church “is now heavily defended with rockrubble armouring, without which it would erode rapidly, but will it be possible to sustain this through the twenty-first century?” Reculver, Kent. *Photo © Peter Murphy*

Conceptual Frameworks

Heritage Stewardship and Applied Archaeology

- “CRM, which may be defined in Western contexts as the process concerned with the management of material or tangible cultural heritage, is also ultimately about the management and governance of the *meaning* and *values* that the material heritage is seen to symbolize or otherwise represent.
- Those values, and the cultural, historical or social identities that are linked to heritage places and items, become themselves governed and regulated.”

Laurajane Smith 2004:195

Community-based with emphasis on values and meaning

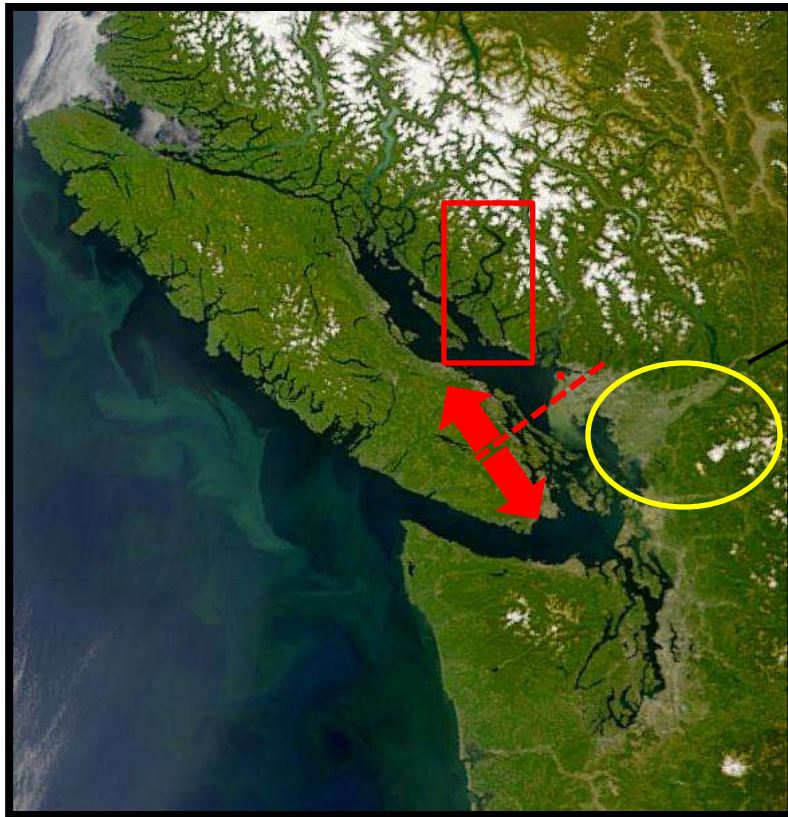
Conceptual Frameworks

Maritime Cultural Landscapes: **Four Benefits**

- Historically rooted in CRM
- Dual focus on tangible and intangible
 - place name studies
 - ‘seascapes’ and ‘spiritscapes’
- Seamless approach
 - spatial and temporal continua
- Rapid Coastal Zone Assessment Survey (RCZAS)

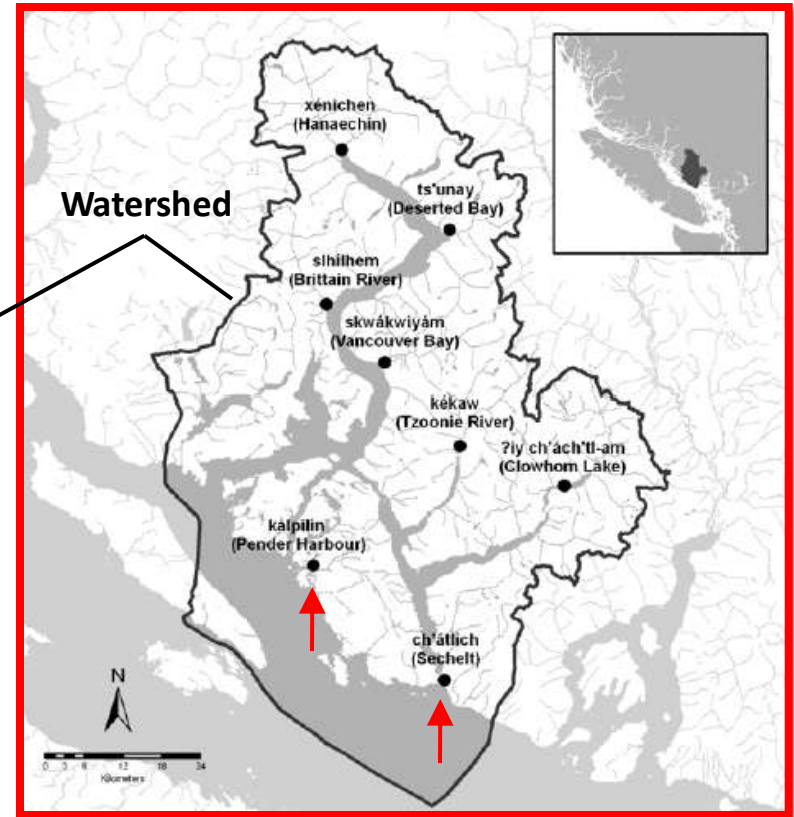
Study Areas

Rocky coasts (fjords)

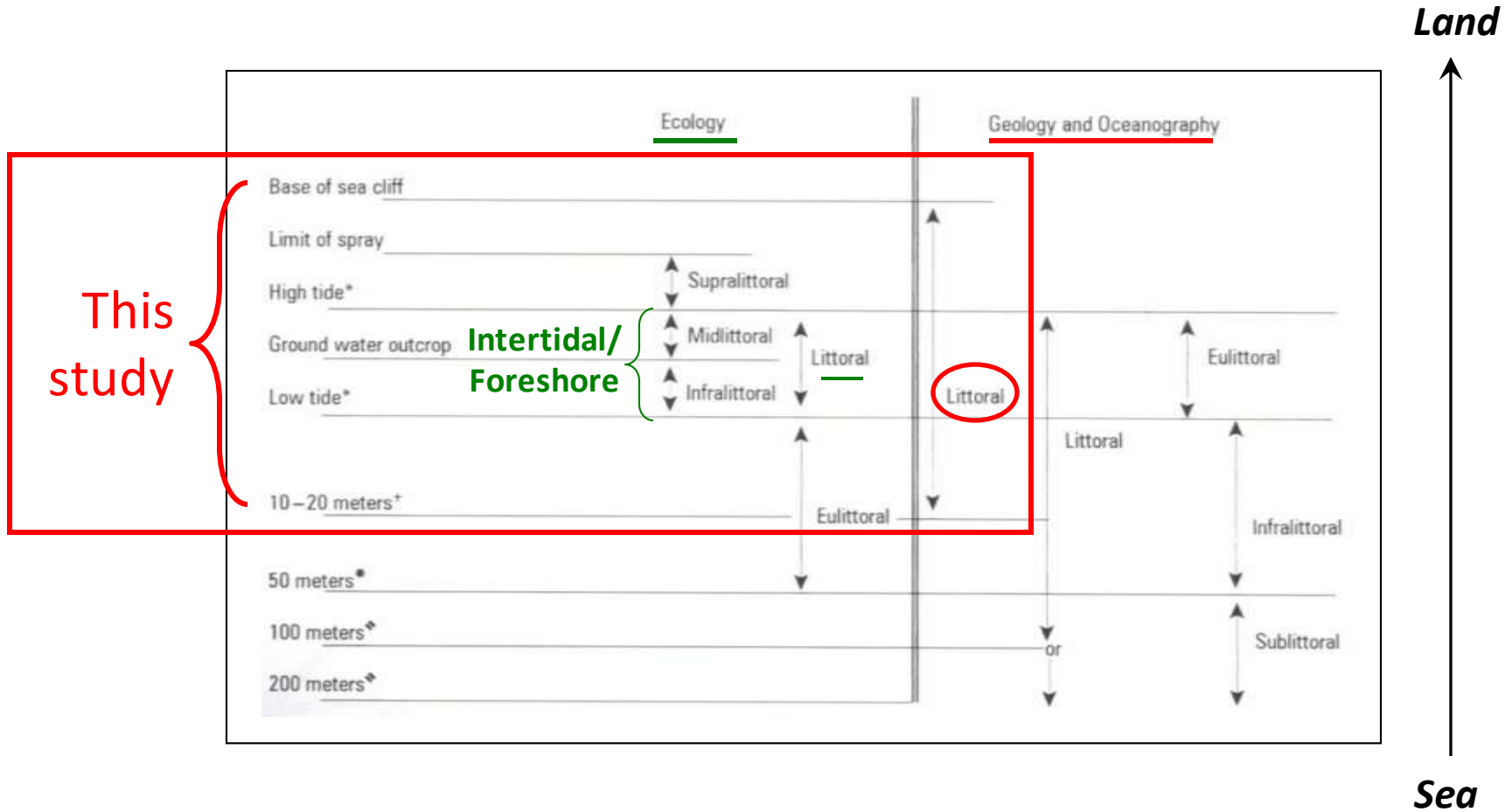


Soft-sediment coasts (estuaries)

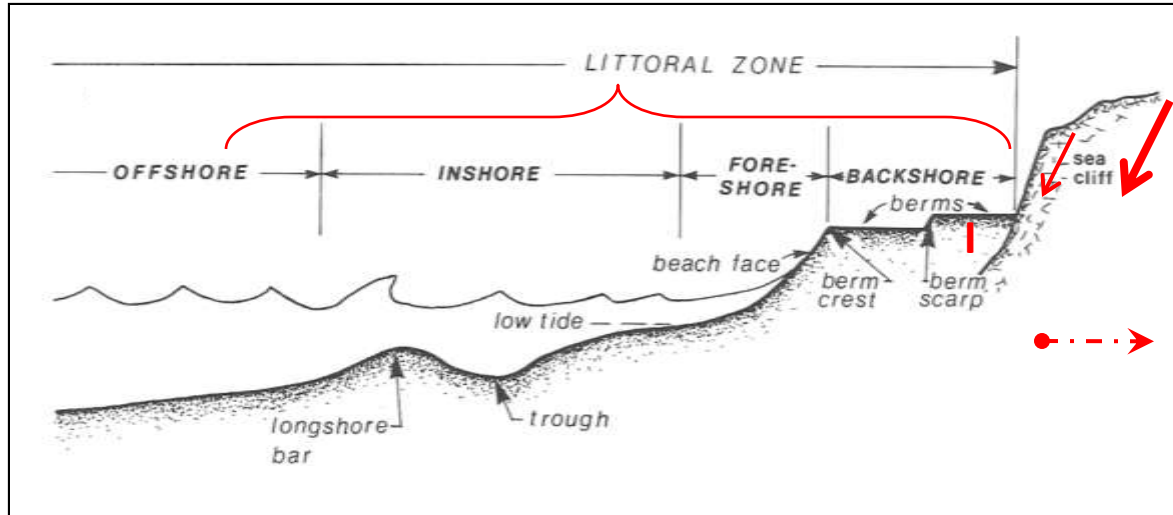
shíshálh Territory



Littoral archaeology



Littoral archaeology



Quantitative data

← mobile across space and through time →



community-based monitoring

Methods, Data, and Analyses

Community Consultation and Interviews

- *shíshálh* Nation
 - TEK/LEK, Government, CRM, and Planners
- Archaeologists
- Resource managers
- District of Sechelt
- Sunshine Coast Regional District

Methods, Data, and Analyses

Community Consultation and Interviews

- Decide what kinds of heritage or heritage landscapes are considered **significant**
- These priorities will be integrated into a RCZAS of *shíshálh* territory coastlines
 - an assessment of the vulnerability of *shíshálh* littoral heritage to coastal erosion
 - provides baseline data for developing research/management strategies for heritage sites or landscapes under threat

Methods, Data, and Analyses

shíshálh RCZAS

PHASE ONE

1. an assessment of known *shíshálh* littoral heritage sites and landscapes
2. discussions with *shíshálh* Nation and resource managers to identify significant site types and heritage landscapes
3. formulation of a research strategy setting out methods to address identified priorities

Methods, Data, and Analyses

shíshálh RCZAS

PHASE TWO

1. *identifying* the variability of littoral sites across space and through time and in relation to a dynamic Holocene coastline
2. *prioritizing* sites according to their relative significance
3. *assessing* risk-level
4. *orienting* management efforts towards the most vulnerable littoral heritage landscapes

Methods, **Data**, and Analyses

- **Archival**
 - Geological landforms/processes
 - CRM and Marine Use Plan (align the ‘dialects’)
 - Heritage site database
- **Interviews**
 - TEK/LEK
 - A baseline for ‘significance’
 - Land Use/Management history and goals
- **Survey results**
 - Digital maps
 - Photographs
 - Notes

Methods, Data, and **Analyses**

- Littoral heritage map
 - Identification
- Significance/Erosion threat map
 - Assessment
- Propose prescriptive measures
 - Prioritization
- **Is this methodology effective?**
 - For the *shíshálh* Nation?
 - Salish Sea? NWC?
 - Globally?

Research Significance

- Designed to directly contribute to the *shíshálh* Nations' Marine Use Plan (*local value*)
- Grounded in local cultural values, provides a framework for community-based littoral heritage stewardship (*regional value*)
- Prioritizes the intangible aspects of littoral heritage, providing a more relevant and meaningful model of stewardship (*cultural value*)
- Alternative to 'top-down' (i.e., federal, provincial/state) models (*applied value*)
 - Ideology is the nexus of the problem

