

# Emerging Marine Projects in BC:

## Underwater Noise in the Marine Environment

Presented to: WWF Working Group

Presented by: Ben Wheeler

January 2012

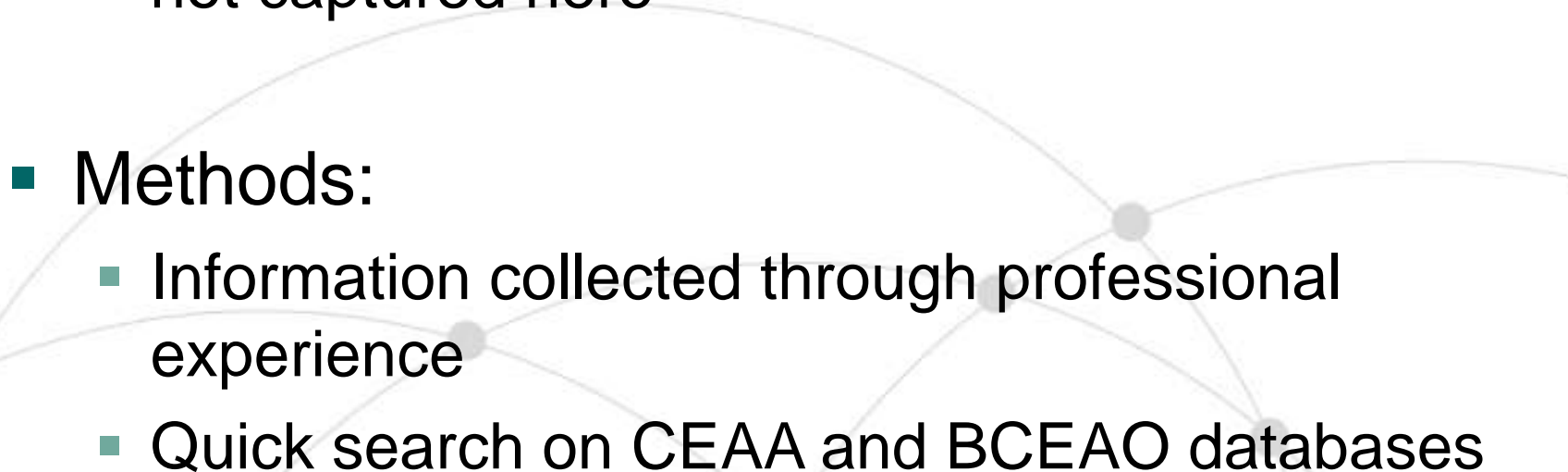


# OUTLINE

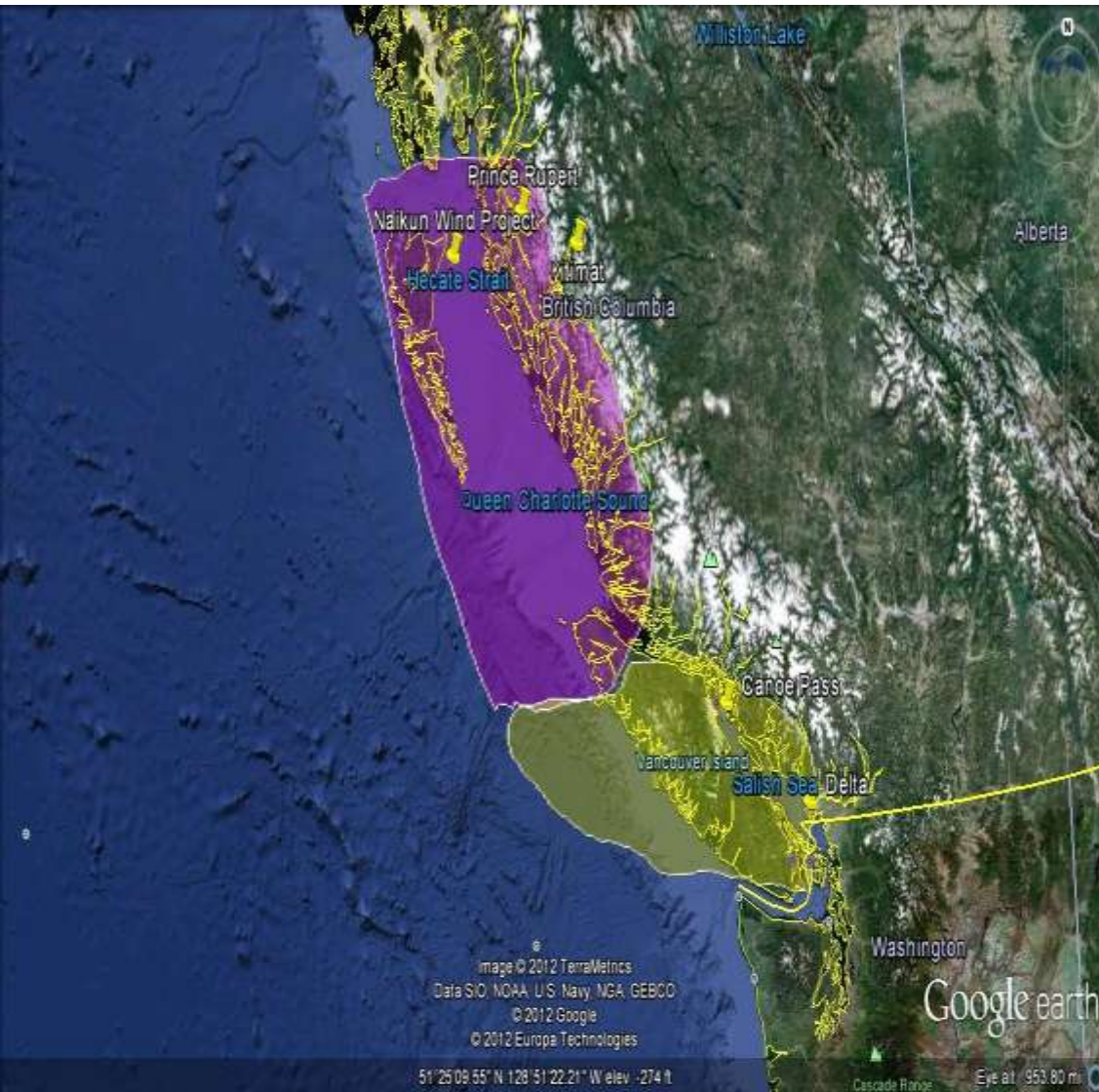
- Objective/Methods
- Geographical Context
- Activities
- Overview of emerging/proposed marine activities in BC:
  - Oil & Gas
  - Port Expansion
  - Renewable Energy



# Objective/Methods

- Objectives:
    - Provide quick snap-shot of emerging or proposed activities in BC
    - Solicit information from group on other activities not captured here
  - Methods:
    - Information collected through professional experience
    - Quick search on CEAA and BCEAO databases
- 

# Geographical Context



- Coarse division of BC coastal waters into:

- North Central Coast (NCC) – pink
- South Coast (SC) – yellow

- Majority of emerging projects proposed in NCC, especially Kitimat

- Did not review potential activities from US that may be within Canada waters

# Activities

- Numerous 'activities' contribute underwater noise in BC:
  - Whale Watching\*
  - BC Ferries\*
  - Commercial Fishing\*
  - Cruise Ships\*
  - Pleasure craft\*
  - Government Research (e.g., offshore seismic & bathymetric - CHS)
  - Naval exercises
  - Offshore Oil & Gas Exploration (e.g., seismic)
  - Marine Transportation
    - Oil & Gas
    - Commodities
  - Renewable Energy

\*Statistics likely available



# Oil & Gas

Project	Location	Description	Marine Activities
Kinder Morgan Westridge Terminal Expansion	Vancouver (SC)	Transmountain pipeline expansion/ widening Second Narrows for Suezmax vessels	Dredging Shipping
Kitimat LNG	Kitimat (NCC)	Natural gas liquefaction and marine export terminal facilities	Construction Shipping
Shell LNG	Kitimat (NCC)	LNG marine terminal and export facilities	Construction Shipping
YVR Fuel Delivery	Richmond (SC)	Marine transport of fuel to YVR	Construction Shipping

# Oil & Gas (con't)

Project	Location	Description	Marine Activities
Douglas Channel LNG	Kitimat (NCC)	Convert <i>S/S Arctic</i> into floating LNG plant -moored short new jetty.	Construction Shipping
Methanex	Kitimat (NCC)	Condensate shipment to Kitimat	Shipping
Enbridge Northern Gateway Pipeline	Kitimat (NCC)	Condensate import/bitumen export -double berth marine terminal	Construction Shipping
Pembina Pipeline	Kitimat (NCC)	Export of bitumen	Construction Shipping

# Port/Marine Terminal Development

Project	Location	Description	Marine Activities
Container Capacity Improvement Program (PMV)	Delta (SC)	capacity improvements at current Deltaport terminal (e.g. road and rail improvements) & multi-berth container terminal (Terminal 2)	Construction Shipping
Fairview Phase II	Prince Rupert (NCC)	Expansion of existing container handling facility	Construction Shipping
Sandhill Marine Terminal	Kitimat (NCC)	Deep-sea marine terminal with associated shipping of aggregate to California and Hawaii markets.	Construction Shipping
Raven Coal	Port Alberni (SC)	Mining of coal and shipment from Port Alberni	Construction Shipping

# Port/Marine Terminal Development (cont'd)

Project	Location	Description	Marine Activities
Canpotex	Burrard (SC)	Transportation of Potash	Construction Shipping
Canpotex (2)	Prince Rupert (NCC)	Transportation of Potash	Construction Shipping
BHP	Prince Rupert (NCC)	Transportation of Potash	Construction Shipping
Burnco Aggregate Mine	Howe Sound (SC)	Marine transport of aggregate	Construction Shipping
Kitsault Mine	Alice Arm (NCC)	Marine transport of molybdenum	Shipping

# Renewable Energy

Project	Location	Description	Marine Activities
Naikun Wind Farm	Hecate Strait (NCC)	Offshore wind energy project with up to 116 turbines	Construction Operations
Canoe Pass Tidal Energy Project	Campbell River (SC)	Installation of two 250 kilowatt (kW) vertical-axis hydrokinetic turbines in a new pile-supported turbine support structure	Construction Operations
Misc	West Coast Vancouver Island (SC)	Several conceptual wave energy projects	Construction Operations

# Questions/Suggestions

- Are there major proposed/emerging Projects we've overlooked?



Images courtesy of: Darwin LN

