Apr 5th, 2:30 PM - 2:45 PM

Conserving forage fish beach spawning habitat in British Columbia

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Salish Sea Ecosystem Conference Session 2.2
Presentation SSE1-104

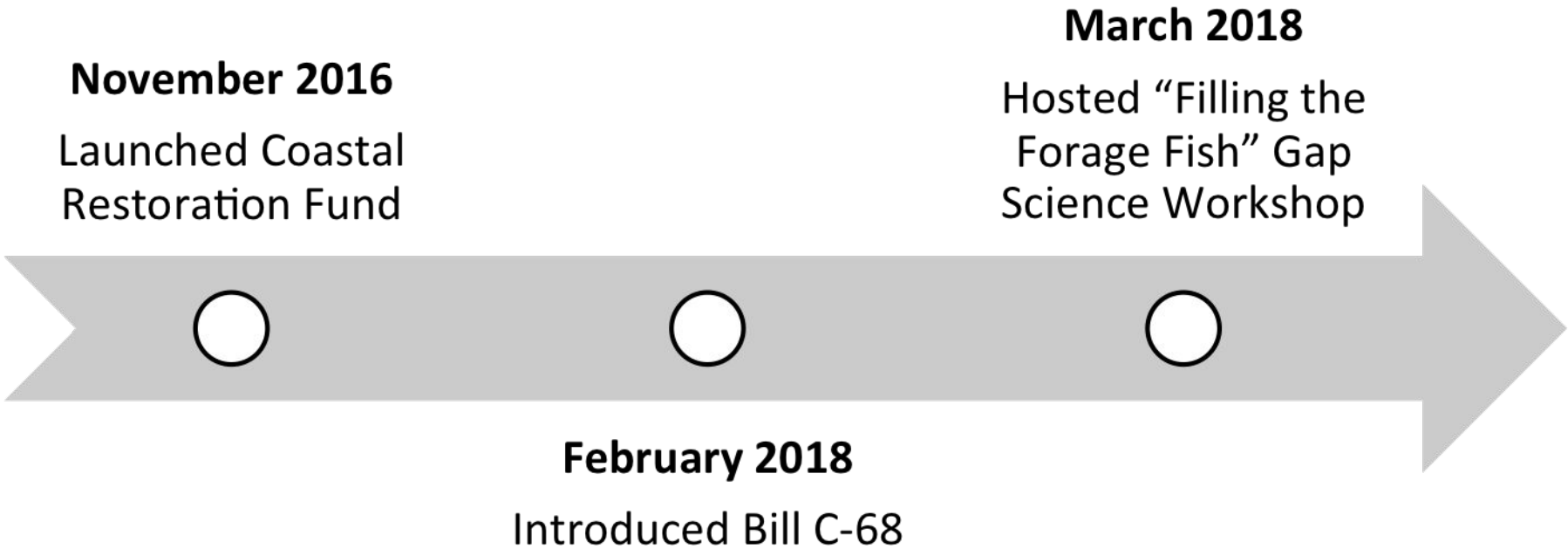
Rachel Wang, WWF-Canada
Haley Tomlin, Mount Arrowsmith Biosphere Region Research Institute

Outline

- State of beach protection
- State of beach monitoring
- Technical document for beach surveys
  - Predictive tool
  - Methods
  - Pilot sites
- Next steps

State of beach protection in British Columbia

- Limited Best Management Practices
- No existing policies that specifically identify forage fish beach spawning habitat protection, BUT recent attention from Fisheries and Oceans Canada (DFO):

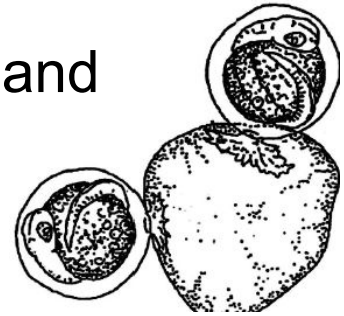


State of beach monitoring in British Columbia

- 2008: BC Shore Spawners Alliance began conducting beach surveys throughout Strait of Georgia
- 2013-2018: Islands Trust Fund suitable habitat assessments for Gulf Islands
- Presently lacking data on spawning habitats; poor database management

British Columbia Beach Survey Technical Document

- Similar to Moulton & Pentilla (2001) Field Manual
  - Site selection (predictive modelling)
  - Beach survey (WDFW vortex method)
  - Quality Assurance Quality Control
    - Lab analysis
    - Data reporting
- Adapting Washington Department of Fish and Wildlife (WDFW) methods and existing methods in British Columbia (BC)
- Finalizing first draft for US and Canada expert input and review



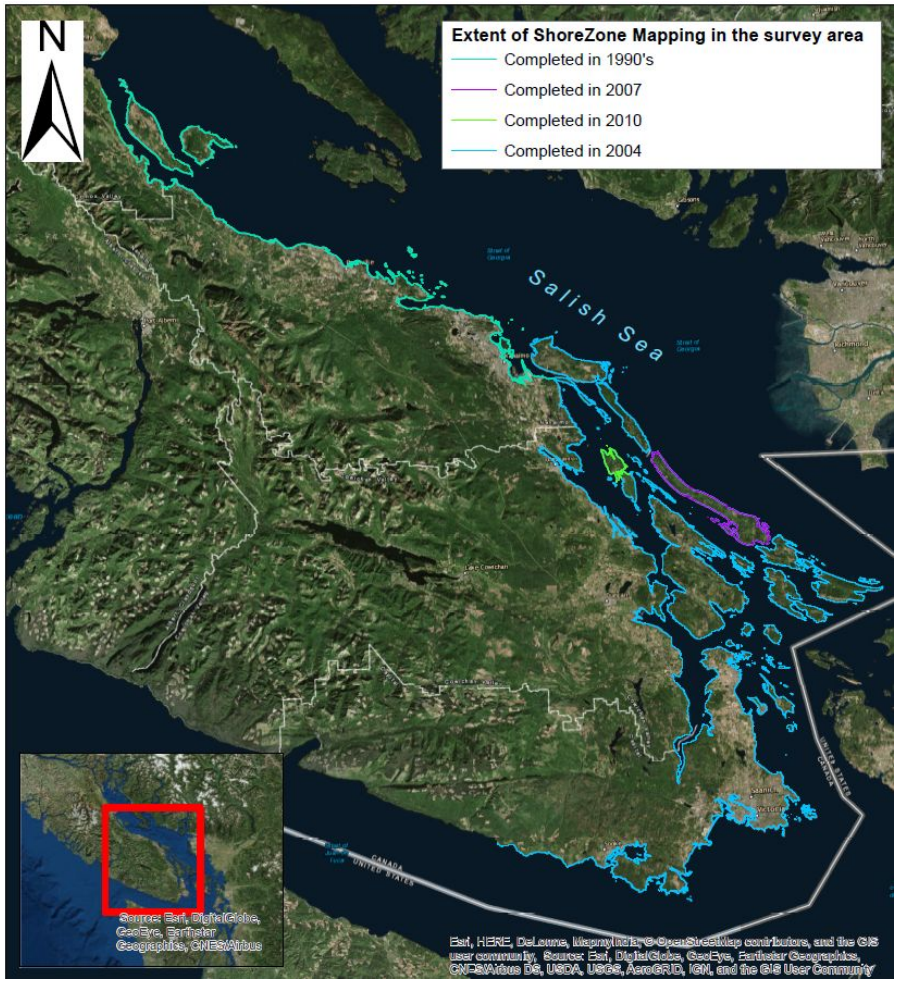
ShoreZone predictive tool

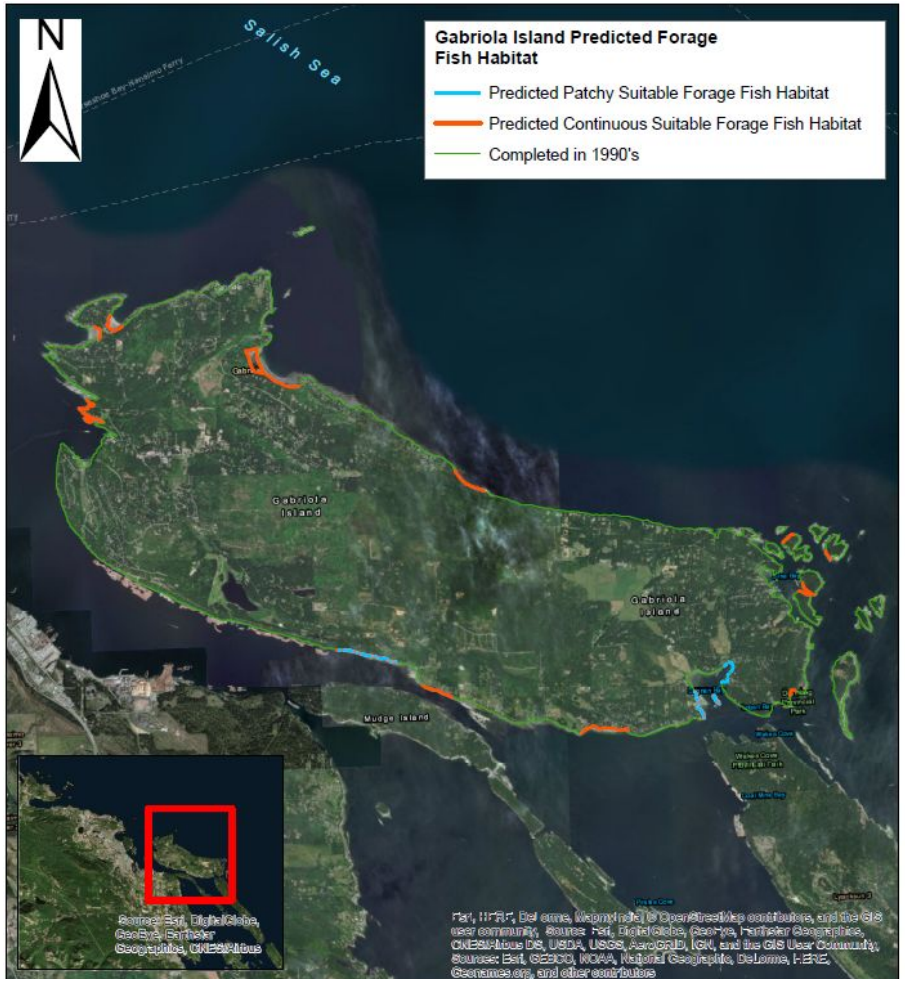
- Coastal and Ocean Resources compared 2 datasets to develop ShoreZone predictive tool (Harper & Borecky 2003)
- Used potential habitat attributes and applied to BC ShoreZone database

Attribute Type	Values (with ShoreZone Codes)
Upper Intertidal (B1) Form	Not specified (all upper intertidal (component B1) Forms included)
Upper Intertidal (B1) Material(s)	Any combination of Sand, Pebble and Cobble Materials. The possible combinations are in ShoreZone are: Bcf, Cs, Csp, Cps, Ccsp, Ccps, Cspc, Cscp, Cpsc, Cpcs */Cs, */Csp, */Cps, */Ccps, */Ccsp, */Cpcs, */Cpsc, */Cspc, */Cscp Cs/*, Csp/*, Cps/*, Ccsp/*, Ccps/*, Cspc/*, Cscp/*, Cpsc/*, Cpcs/*
Exposure	Very Protected (VP) **OR** Protected (P) **OR** Semi-Protected (SP)

*Indicates a non-specific Material code

British Columbia ShoreZone predictive tool





Mount Arrowsmith Biosphere Region Research Institute (MABRRI)

Predictive Mapping

Nanaimo Area Predicted Forage Fish Habitat

The predicted forage fish habitat identified using the "Suitable Forage Fish Spawning Habitat in the Gulf Islands" ShoreZone model is selecting for favourable spawning habitat attributes for forage fish, including specific sediment types, presence of overhanging vegetation, and protected to semi-exposed beach types.

- Predicted Continuous Suitable Forage Fish Habitat
- Predicted Patchy Suitable Forage Fish Habitat
- ShoreZone Mapping Completed in 1990's

Scale 1:75,000

0 0.5 1 2 3 4

Kilometers

Imagery sourced from Esri
Predicted habitat model credited to Coastal & Ocean Resources Inc.
Suitable forage fish habitat sourced from Islands Trust

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Beach Surveying

MABRRI's Sample Sites

- To start, focused on the Parksville Qualicum Beach area
- Established sites that we will monitor frequently in the upcoming summer and winter spawning seasons

Next steps

- Resume conducting beach surveys along the Vancouver Island and Gulf Island coastlines, beginning in May
- Finalize Technical Document for BC beach surveys
- Work towards developing and implementing an updated training program that can be used throughout the BC Salish Sea


Thank you!