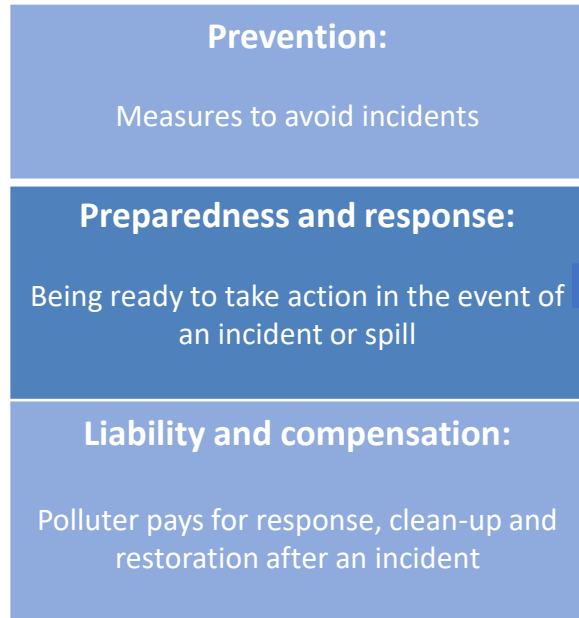


ECCC OPP 2.0 Shoreline Mapping Overview

Valerie Wynja – March 2023

The Marine Safety System in Canada



Preparedness includes:

Spill Response Plans
Pre-positioning of equipment caches and staffed depots
Spill Exercises
Response training
Partners exercise together

ECCC Baseline Data Supports:

Detailed spill response planning
Proactive identification sensitive areas
Rapid response to events
Effective cleanup efforts and recovery

Upper Intertidal SCAT Class legend

Bedrock Cliff	
Bedrock Sloping/Ramp	
Bedrock Platform	
Boulder Beach/Bank	
Pebble-Cobble Beach/Bank	
Mixed Sediment Beach/Bank	
Sediment Cliff	
Sand Beach/Bank	
Mud/Clay Bank	
Mixed Sediment Flat	
Sand Flat	
Mud Flat	
Vegetated Bank	
Wetlands/Marsh	
Manmade Permeable	
Manmade Impermeable	
Inundated Low-Lying Tundra	
Tundra Cliff (Ice Poor)	
Tundra Cliff (Ice Rich)	
Peat Shoreline	
Snow Covered Shoreline	
Ice	
Glacier Ice	
Ice Shelf	

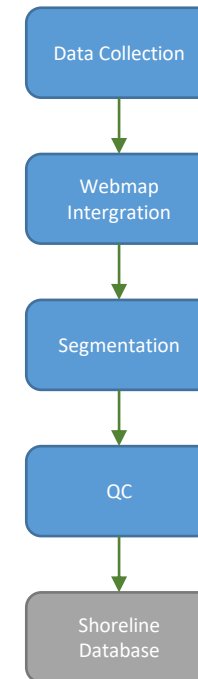
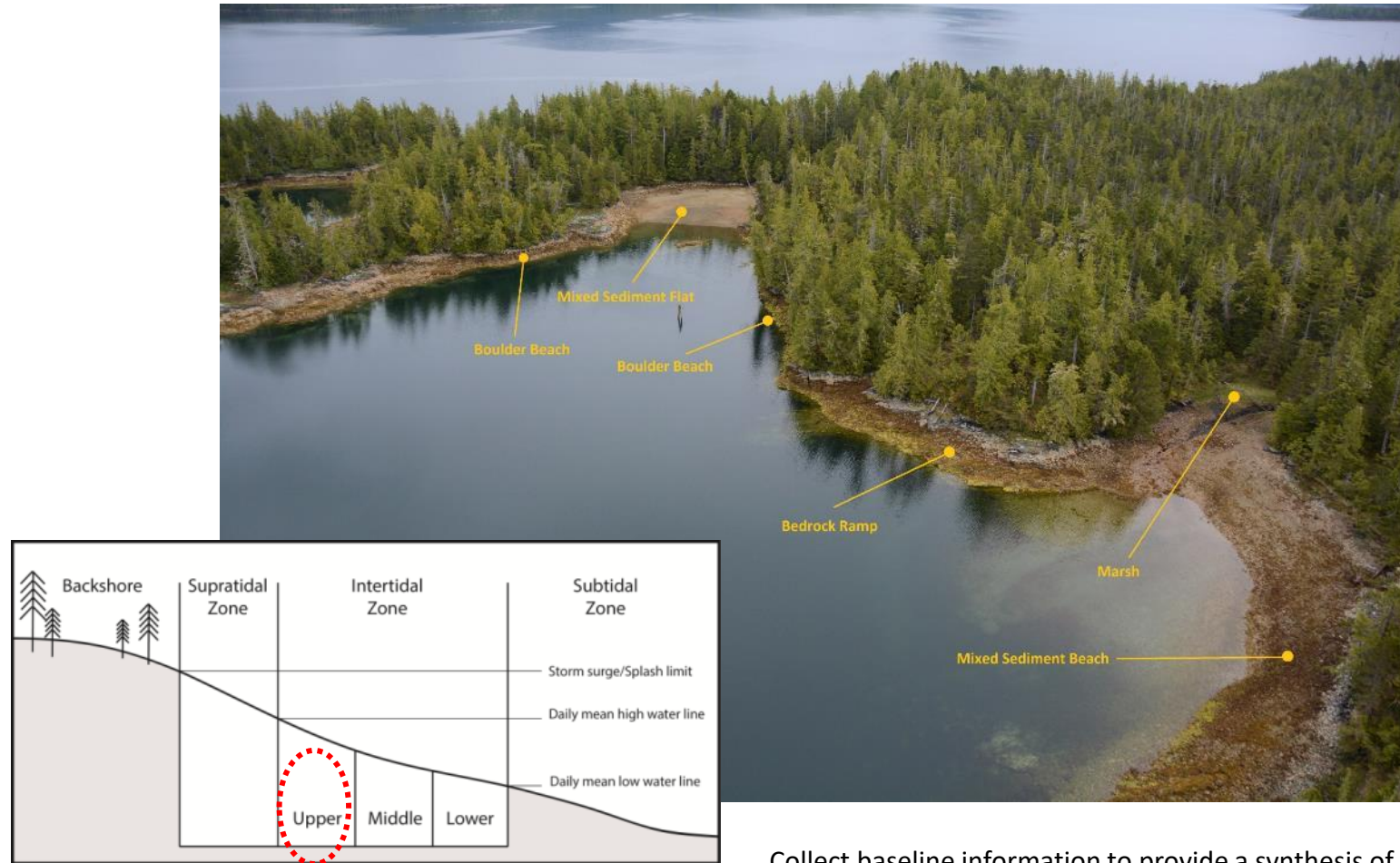


Oil Spill Preparedness & Response Partners

Helicopter Methodology



Shoreline Segmentation



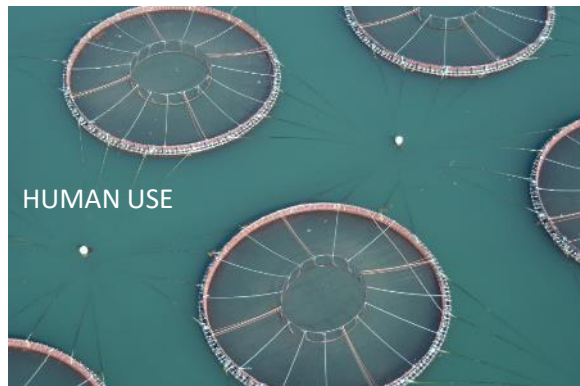
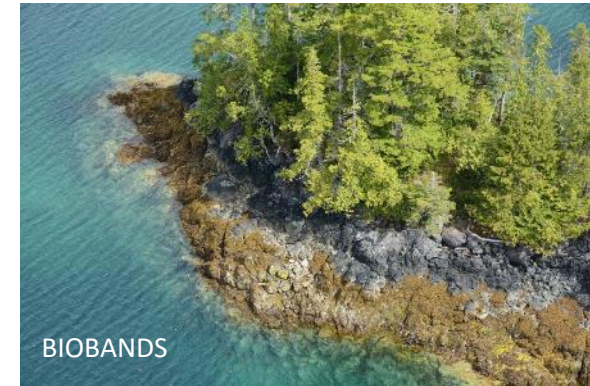
Collect baseline information to provide a synthesis of environmental information relevant to the planning and implementation of oil-spill in coastal areas in Canada.

Methodology Details

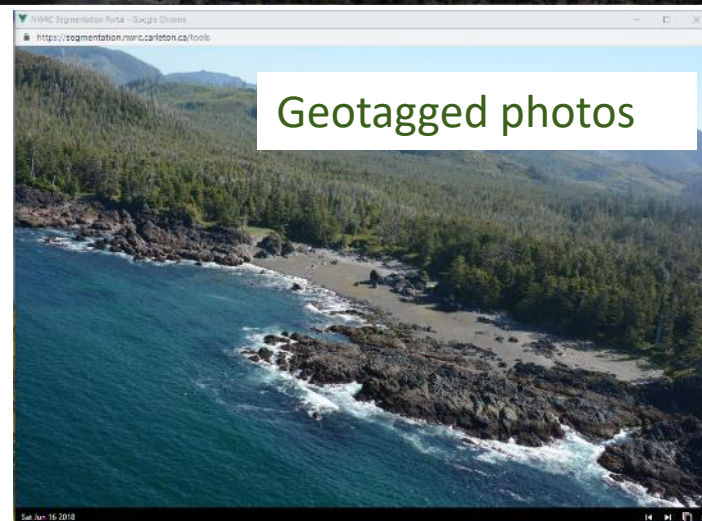
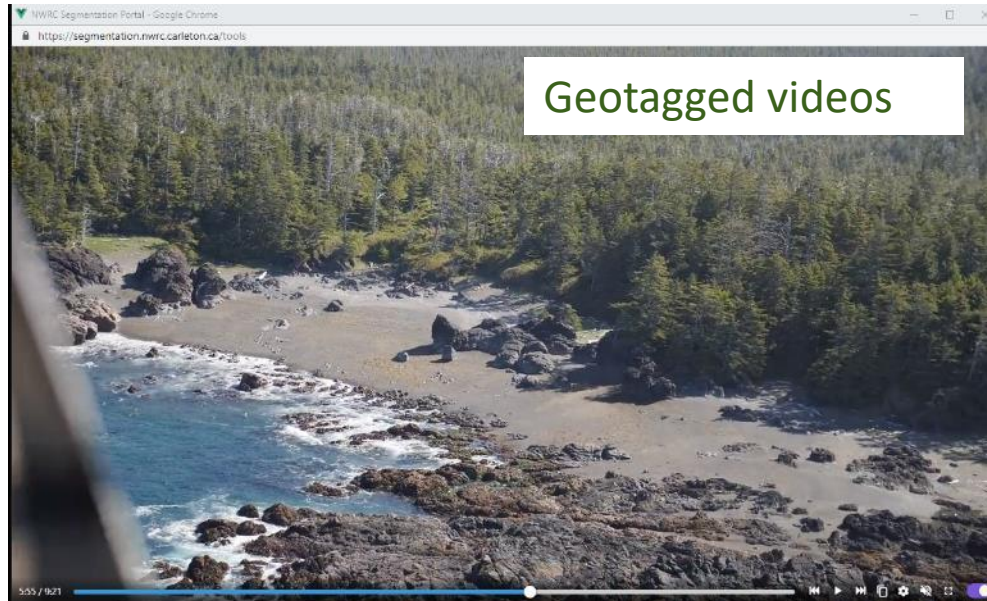
- Local /Fine Scale
 - Interested in substrate and rock sizes
 - Linear assemblages of biota or “Biobands”
 - Shoreline Access information
- Geotagged videos and photos from low-altitude coastal overflights
 - ~200-300 feet high
 - ~70 knots (110-130 km/hr)
- Ground sampling to validate overflights.



Baseline Coastal Data



Populating the database using webmap



Form (NWRC Segmentation Portal) - Google Chrome
segmentation.nwrc.carleton.ca/tools

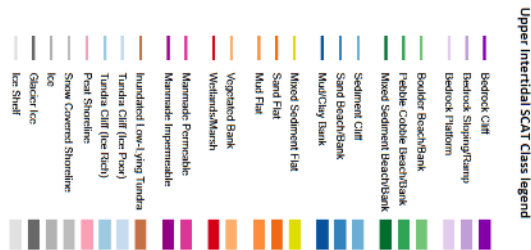
SHORELINE CLASSIFICATION

UPPER INTERTIDAL ZONE	LOWER INTERTIDAL ZONES	SUPRATIDAL	BACKSHORE
UI Scat Class <input type="text" value="Bedrock Cliff"/>	LI Scat Class <input type="text" value="Bedrock Cliff"/>	SI Scat Class <input type="text" value="Bedrock Cliff"/>	BS Landcover Class <input type="text" value="Forest"/>
UI Form <input type="text" value="Cliff"/>	LI Form <input type="text" value="Cliff"/>	SI Landcover Class <input type="text" value="N/A"/>	BS Form <input type="text" value="Sloped"/>
UI Slope <input type="text" value="Strong or Vertical"/>	LI Slope <input type="text" value="Strong or Vertical"/>	SI Form <input type="text" value="Cliff/Hill"/>	BS Slope <input type="text" value="Moderate"/>
UI Height <input type="text" value="1 - 5m"/>	LI Height <input type="text" value="1 - 5m"/>	SI Slope <input type="text" value="Strong or Vertical"/>	BS Height <input type="text" value="N/A"/>
UI Substrate 1 <input type="text" value="Bedrock"/>	LI Substrate 1 <input type="text" value="Bedrock"/>	SI Height <input type="text" value="1 - 5m"/>	BS Substrate 1 <input type="text" value="Tree-C"/>
UI Substrate 2 <input type="text" value="N/A"/>	LI Substrate 2 <input type="text" value="N/A"/>	SI Substrate 1 <input type="text" value="Bedrock"/>	BS Substrate 2 <input type="text" value="Shrub-D"/>
UI Substrate 3 <input type="text" value="N/A"/>	LI Substrate 3 <input type="text" value="N/A"/>	SI Substrate 2 <input type="text" value="N/A"/>	BS Substrate 3 <input type="text" value="N/A"/>
UI Scat Class 2 <input type="text" value="N/A"/>	LI Scat Class 2 <input type="text" value="N/A"/>	SI Substrate 3 <input type="text" value="N/A"/>	BS Landcover Class 2 <input type="text" value="N/A"/>
UI Substrate 4 <input type="text" value="N/A"/>	LI Substrate 4 <input type="text" value="N/A"/>	SI Scat Class 2 <input type="text" value="N/A"/>	BS Substrate 4 <input type="text" value="N/A"/>
UI Substrate 5 <input type="text" value="N/A"/>	LI Substrate 5 <input type="text" value="N/A"/>	SI Landcover Class 2 <input type="text" value="N/A"/>	BS Substrate 5 <input type="text" value="N/A"/>
UI Substrate 6 <input type="text" value="N/A"/>	LI Substrate 6 <input type="text" value="N/A"/>	SI Substrate 4 <input type="text" value="N/A"/>	BS Substrate 6 <input type="text" value="N/A"/>
		SI Substrate 5 <input type="text" value="N/A"/>	
		SI Substrate 6 <input type="text" value="N/A"/>	

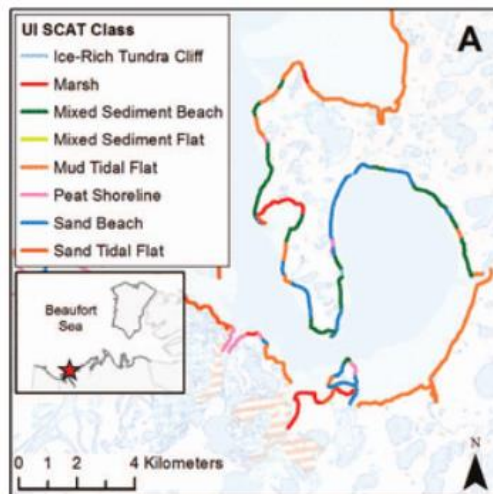
Working Towards a High Resolution Satellite Shoreline Classification

Helicopter

Detailed Classes and Zones



Vector

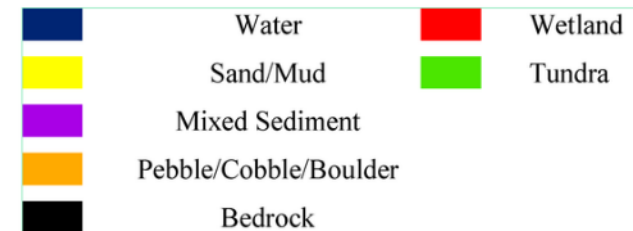


Balance
between
*Environmental
Emergency*
needs /
information
resolution / cost
/ coverage

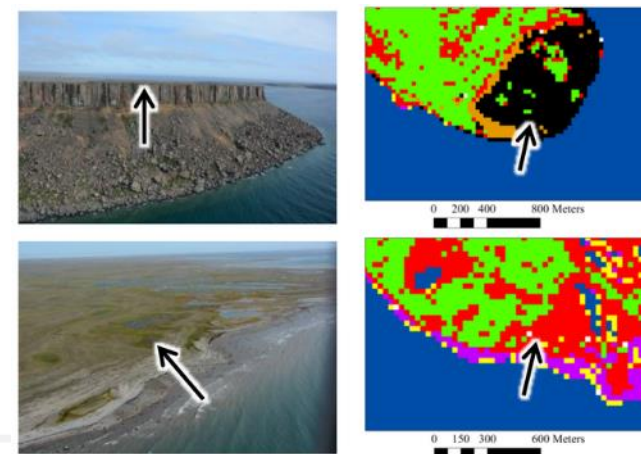
Consideration of
Pros/Cons
of different
methodologies

High Resolution

Simplified Classes and Zones



Raster



Other Applications for the Coastal Dataset

- Local shoreline planning
- Coastal development
- Coastal erosion
- Species at risk
- Habitat management
- Environmental assessments
- Identification of rare and invasive species
- Baseline set of information for monitoring change in shoreline features
- Research site selection

