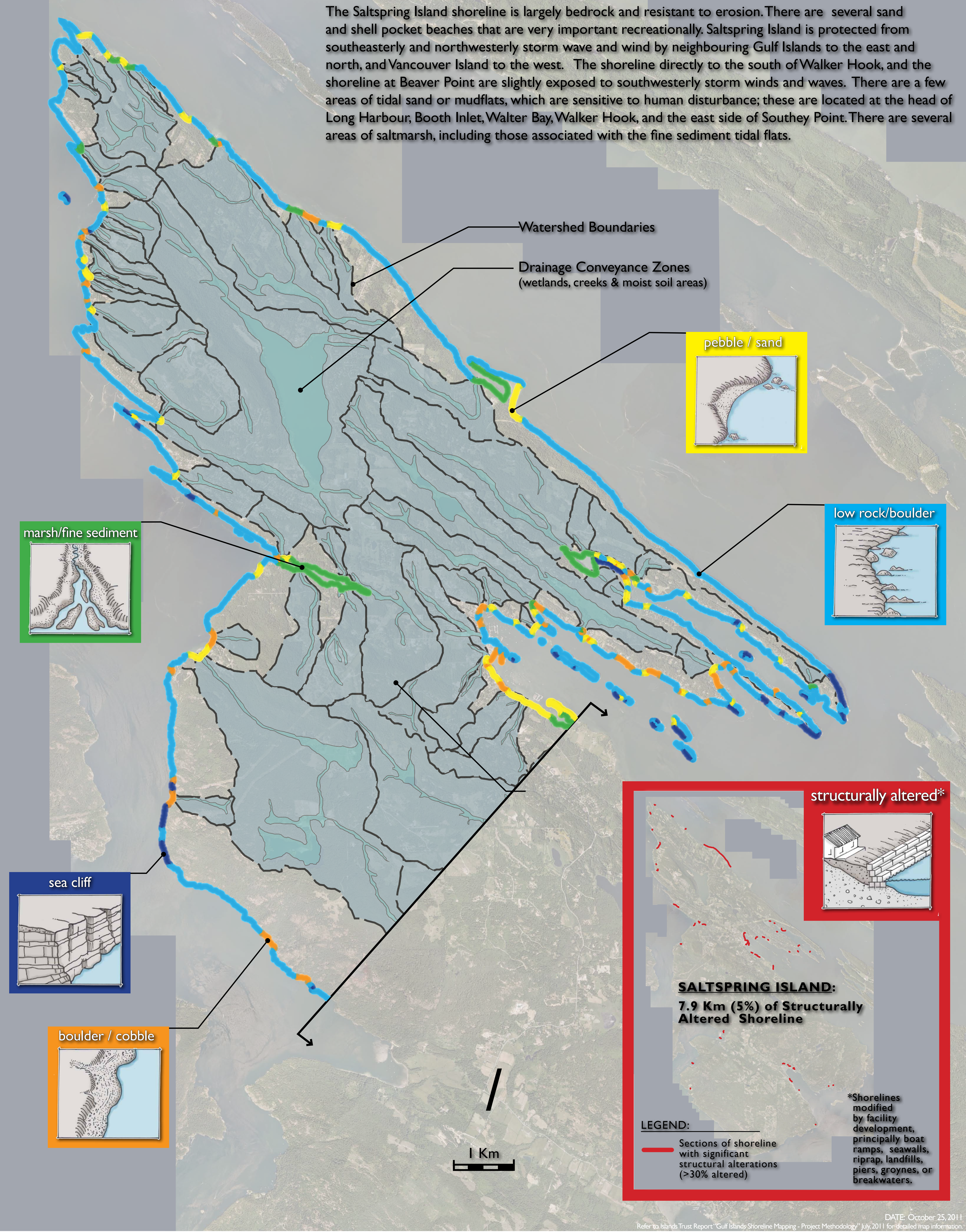


SALTSPRING Is. NORTH MAP I of 3: Distribution of Shoreline Types

The Saltspring Island shoreline is largely bedrock and resistant to erosion. There are several sand and shell pocket beaches that are very important recreationally. Saltspring Island is protected from southeasterly and northwesterly storm wave and wind by neighbouring Gulf Islands to the east and north, and Vancouver Island to the west. The shoreline directly to the south of Walker Hook, and the shoreline at Beaver Point are slightly exposed to southwesterly storm winds and waves. There are a few areas of tidal sand or mudflats, which are sensitive to human disturbance; these are located at the head of Long Harbour, Booth Inlet, Walter Bay, Walker Hook, and the east side of Southey Point. There are several areas of saltmarsh, including those associated with the fine sediment tidal flats.



SEA CLIFF

- rocky shore with steep slopes
- 10% of shoreline (14.3 Km)

Rock (Hard) Shorelines

LOW ROCK/BOULDER

- rocky shore with low slopes
- 62% of shoreline (91 Km)

BLUFF

- moderate to high slopes of sediment (often eroding)
- Thetis Island has no bluff shores

BOULDER/COBBLE

- boulder - cobble cover on beach (often indicates eroding shoreline)
- 11% of shoreline (16.6 km)

PEBBLE/SAND

- stable or accreting pebble-sand (or shell) beaches (may be eroding where sediment supply is interrupted).
- 11% of shoreline (15.9 Km)

MARSH/FINE SEDIMENT

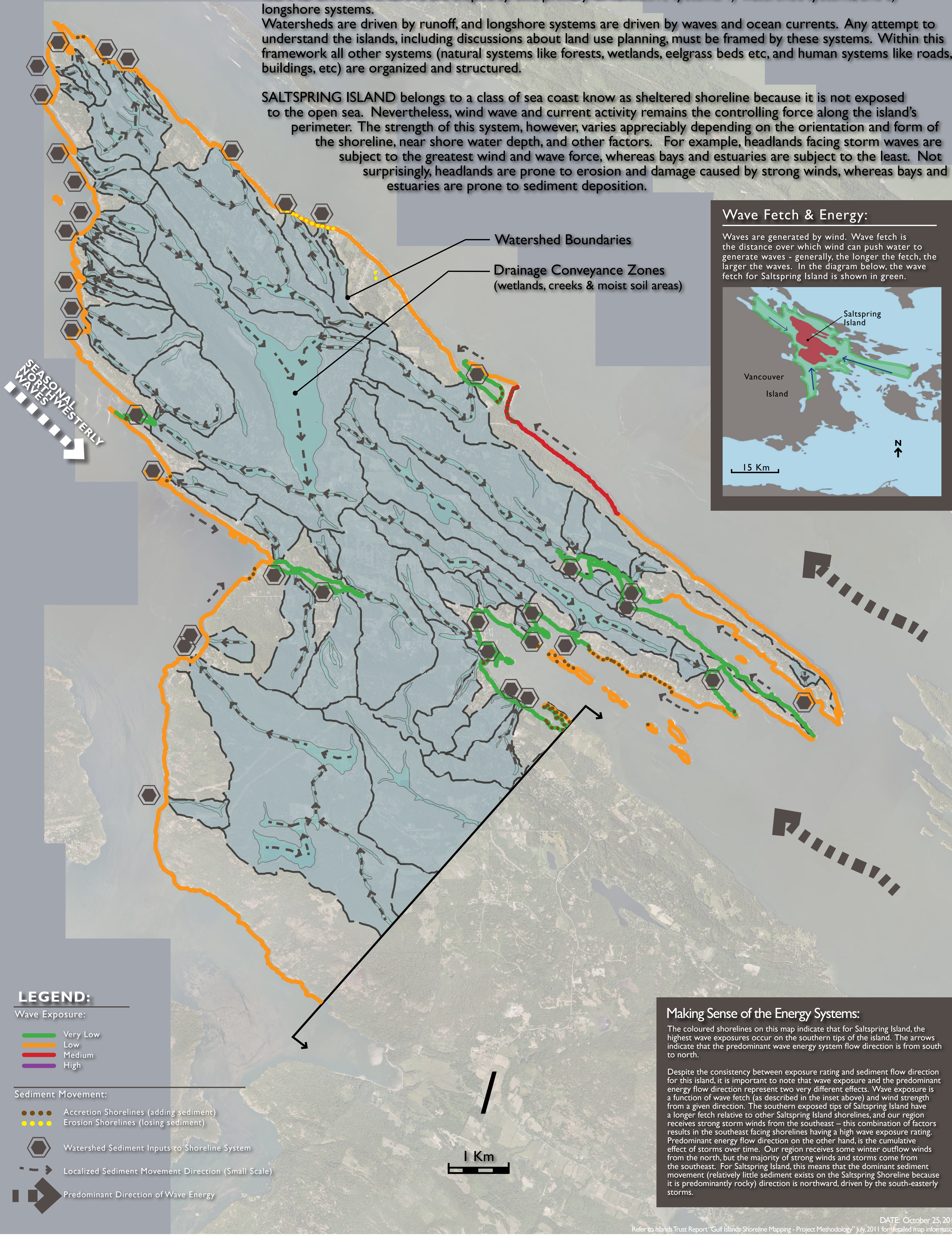
- low energy shorelines with sediment inputs from watersheds nearby
- 7% of shoreline (9.6 Km)

SALTSPRING Is. NORTH

MAP 2 of 3: Energy & Sediment Movement

ISLAND ENVIRONMENTS are shaped by two primary or formative systems: 1) watershed systems; and 2) longshore systems. Watersheds are driven by runoff, and longshore systems are driven by waves and ocean currents. Any attempt to understand the islands, including discussions about land use planning, must be framed by these systems. Within this framework all other systems (natural systems like forests, wetlands, eelgrass beds etc, and human systems like roads, buildings, etc) are organized and structured.

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Wave Fetch & Energy:

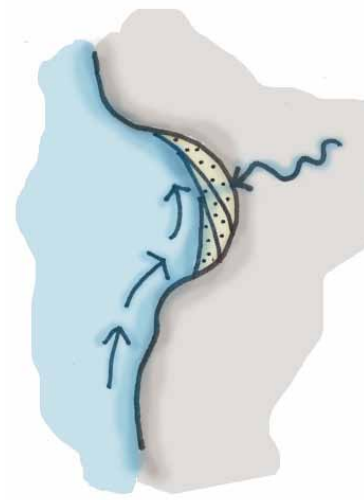
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Making Sense of the Energy Systems:

The coloured shorelines on this map indicate that for Saltspring Island, the highest wave exposures occur on the southern tips of the island. The arrows indicate that the predominant wave energy system flow direction is from south to north.

Despite the consistency between exposure rating and sediment flow direction for this island, it is important to note that wave exposure and the predominant energy flow direction represent two very different effects. Wave exposure is a function of wave fetch (as described in the inset above) and wind strength from a given direction. The southern exposed tips of Saltspring Island have a longer fetch relative to other Saltspring Island shorelines, and our region receives strong storm winds from the southeast - this combination of factors results in the southeast facing shorelines having a high wave exposure rating. Predominant energy flow direction on the other hand, is the cumulative effect of storms over time. Our region receives some winter outflow winds from the north, but the majority of strong winds and storms come from the southeast. For Saltspring Island, this means that the dominant sediment movement (relatively little sediment exists on the Saltspring Shoreline because it is predominantly rocky) direction is northward, driven by the south-easterly storms.

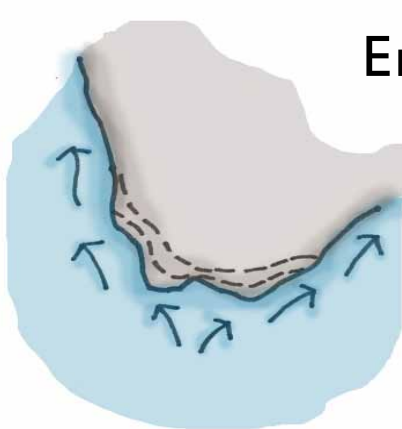
DATE: October 25, 2011
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Accretion Shorelines:

Sediment accumulation (accretion) is typically associated with lower energy environment along the shorelines.

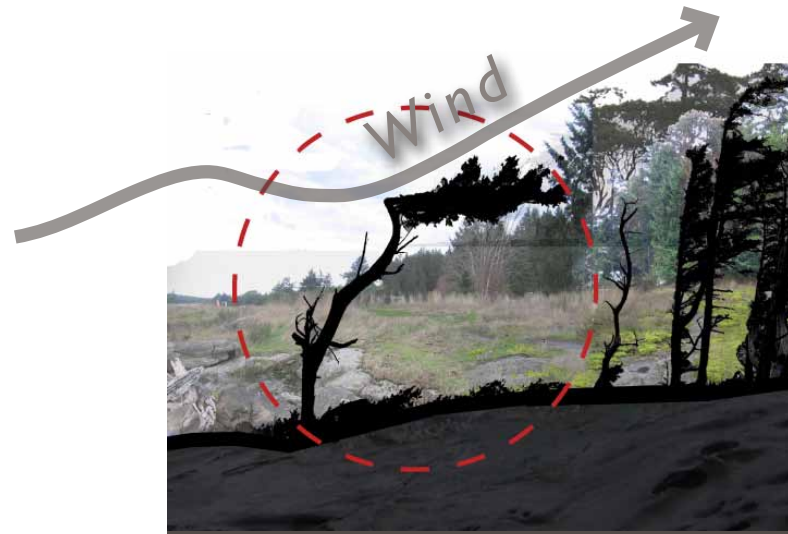
Accretion features include sandy beaches, beach berms, pocket beaches or storm berms, and are often high value recreation features or wildlife habitats.



Erosion Shorelines:

Eroding shorelines are typically associated with higher energy environment along the shorelines, like headlands, high exposure sediment shorelines or points of land.

Eroding shorelines feed the sediment transport system and halting erosion can have severe impacts on the shoreline sediment movement system and 'downstream' beaches. Adequate setbacks for buildings and facilities are critical.

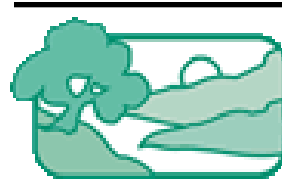


Trees and vegetation damaged or shaped by the wind along shorelines are good indicators of high wind exposure.

Caution should be exercised when siting buildings and facilities in these locations to ensure they are adequately set back from the shoreline.

Wave Exposure & the Sediment System

Wind Exposure & Buildings



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Preserving island communities, culture and environment

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SALTSPRING Is. NORTH

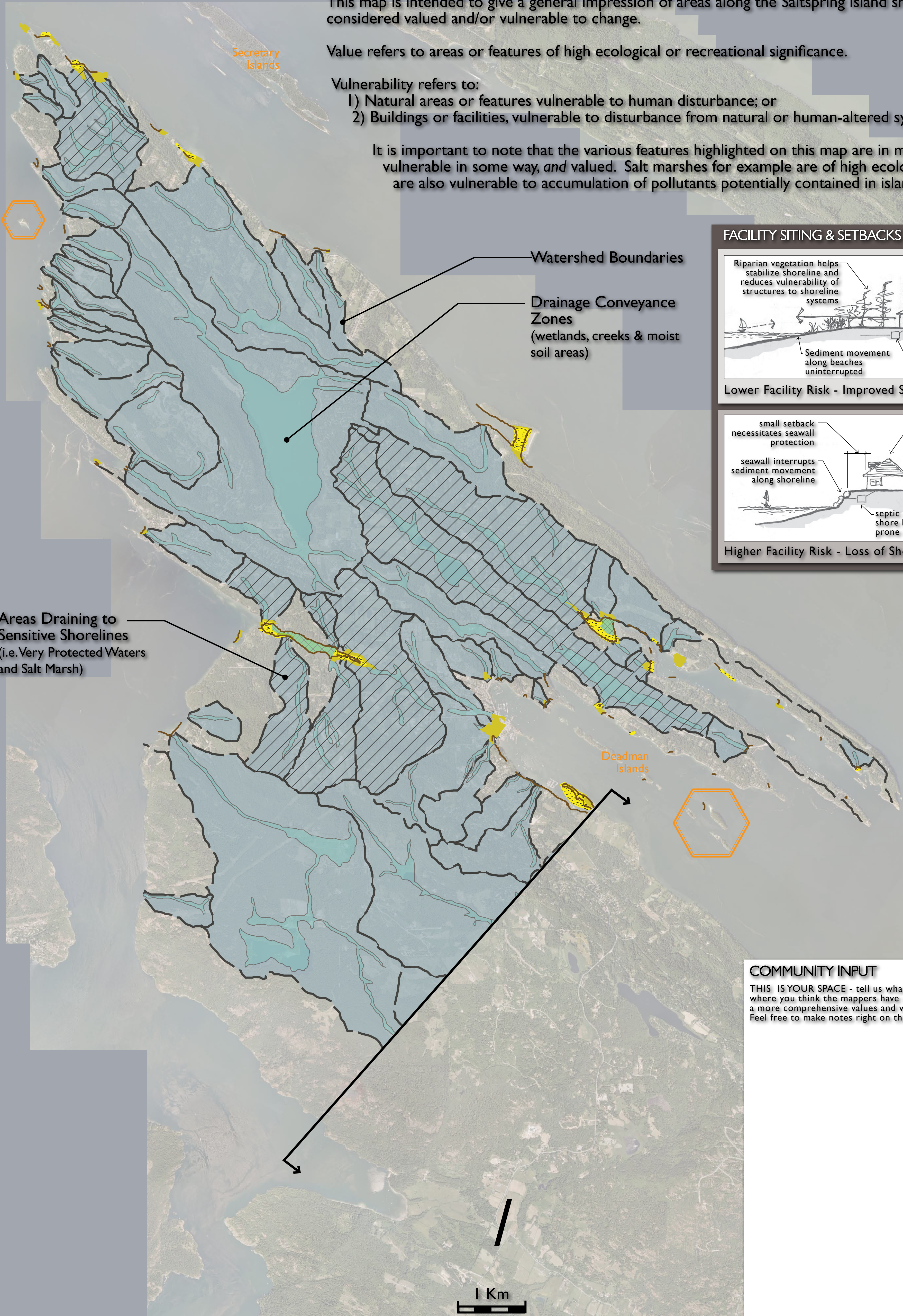
MAP 3 of 3: Shoreline Values & Vulnerability

This map is intended to give a general impression of areas along the Saltspring Island shoreline that are considered valued and/or vulnerable to change.

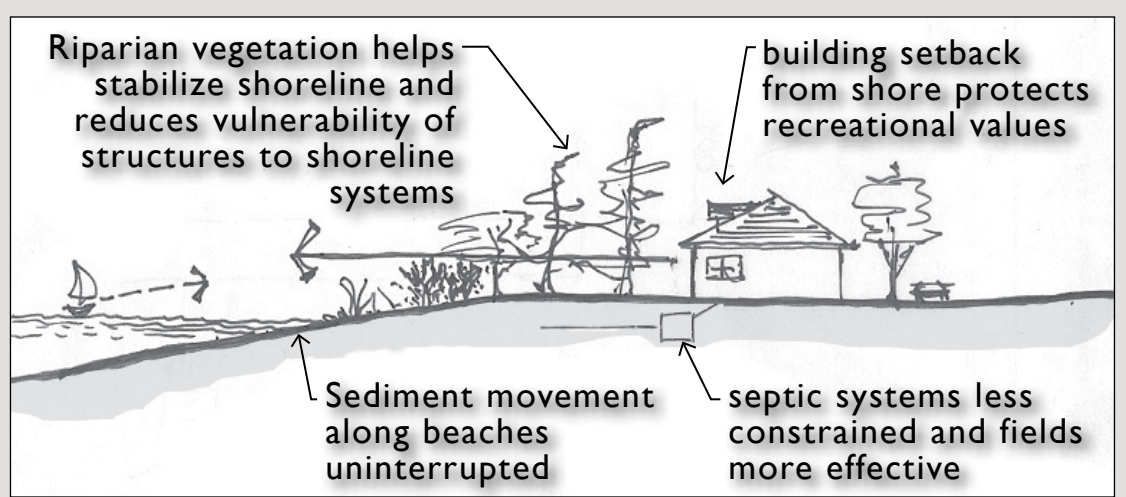
Value refers to areas or features of high ecological or recreational significance.

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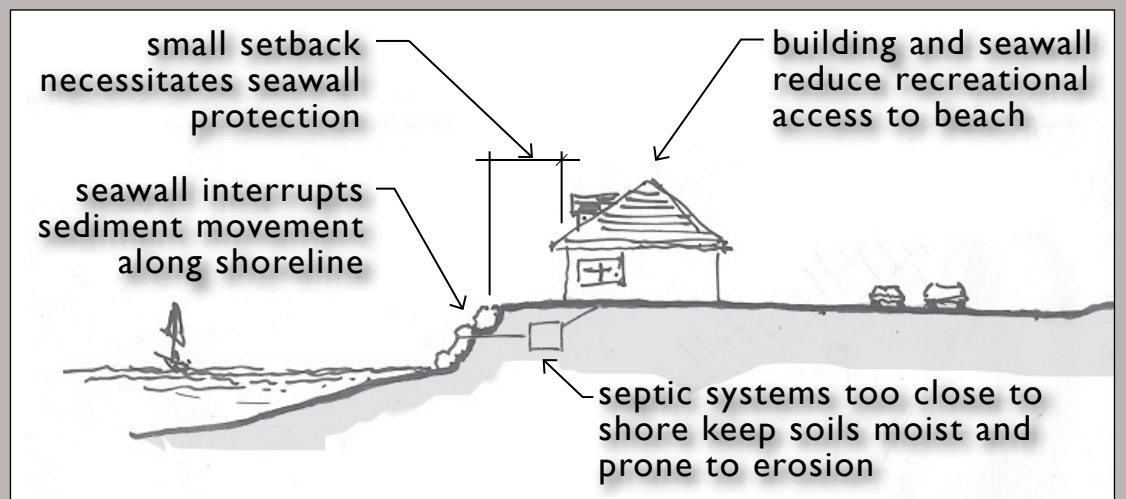
It is important to note that the various features highlighted on this map are in many cases both vulnerable in some way, *and* valued. Salt marshes for example are of high ecological value, *and* are also vulnerable to accumulation of pollutants potentially contained in island runoff.



FACILITY SITING & SETBACKS



Lower Facility Risk - Improved Shore Protection



Higher Facility Risk - Loss of Shore Values

COMMUNITY INPUT

THIS IS YOUR SPACE - tell us what we have missed or where you think the mappers have erred to help us build a more comprehensive values and vulnerability resource! Feel free to make notes right on the map also.

DATE: October 25, 2011

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LOW LYING AREAS

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SOFT SHORELINES

- Sediment shorelines are typically associated with high recreational values and high ecological values (pocket beaches, estuaries, etc).

VERY PROTECTED WATERS

- Shorelines highly protected from wave exposure
- Poor water circulation increases vulnerability to water pollution

SALT MARSH

- Valued ecological features
- Vulnerable to pollution from land-based activities

ISLETS

- Often important ecologically, islets can be vulnerable to disturbance from recreational users

Areas of High Ecological or Recreational Significance



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Preserving island communities, culture and environment

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A SUSTAINABLE APPROACH TO COASTAL DESIGN AND DEVELOPMENT
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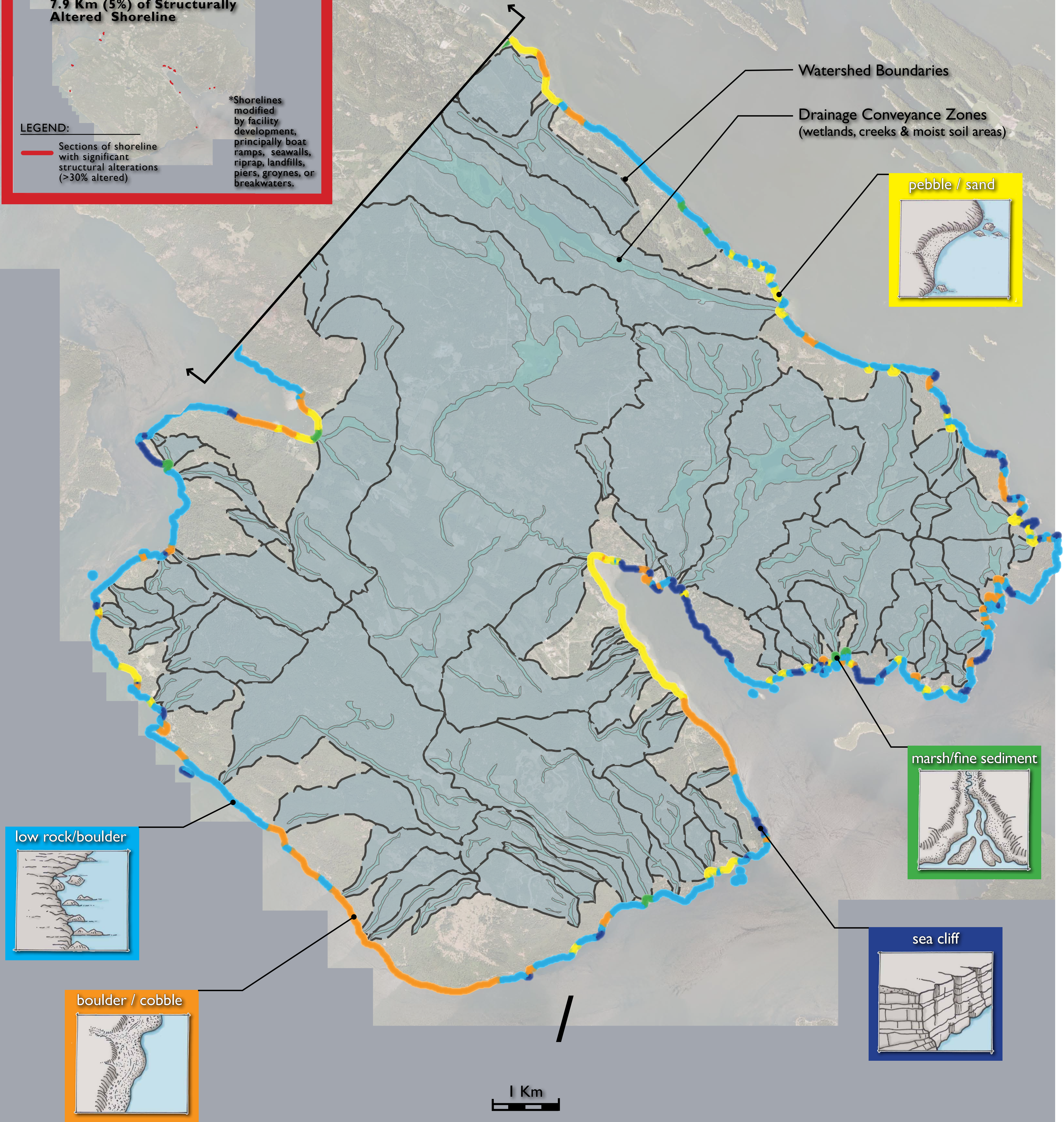
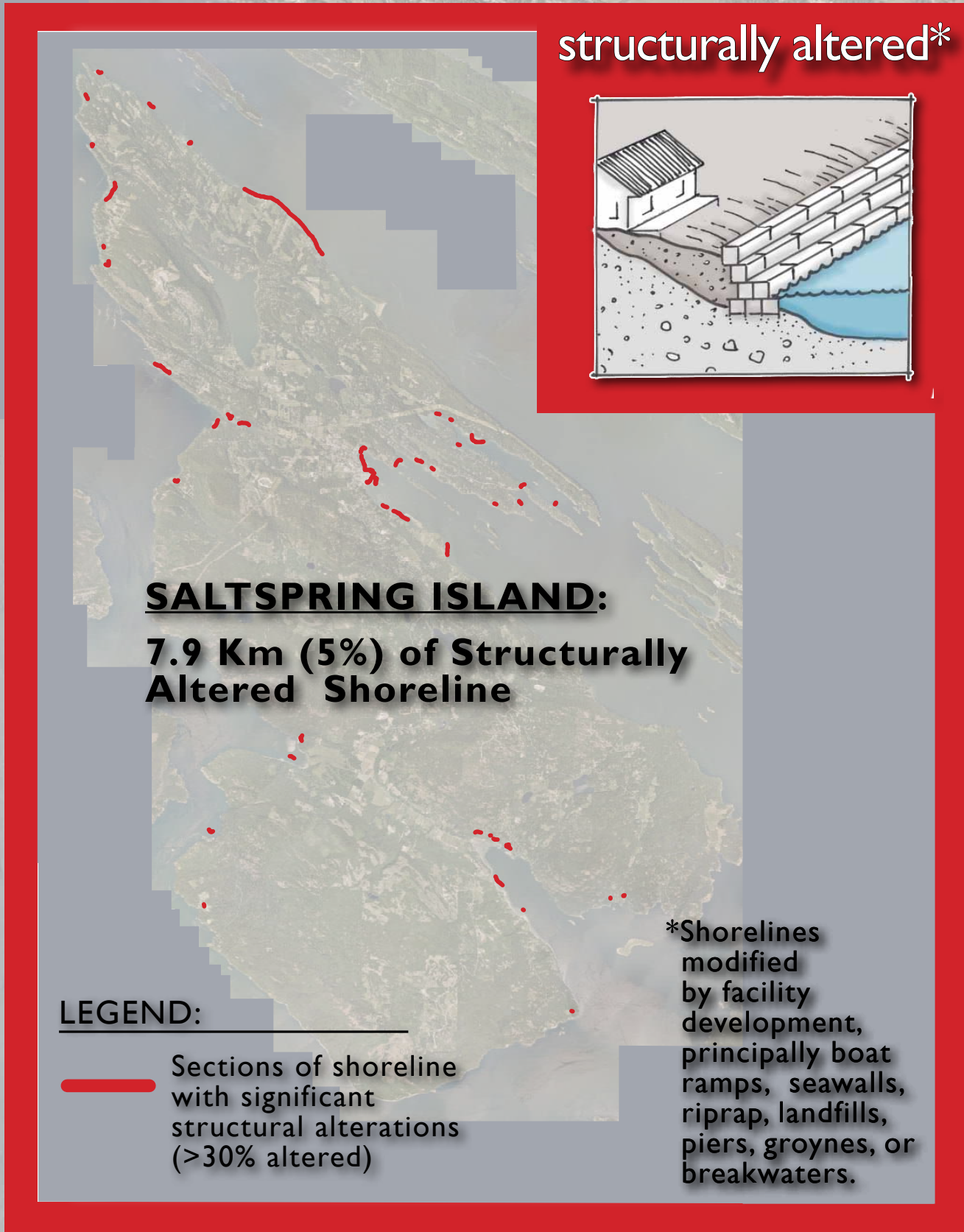


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SALTSPRING Is. SOUTH MAP I of 3: Distribution of Shoreline Types

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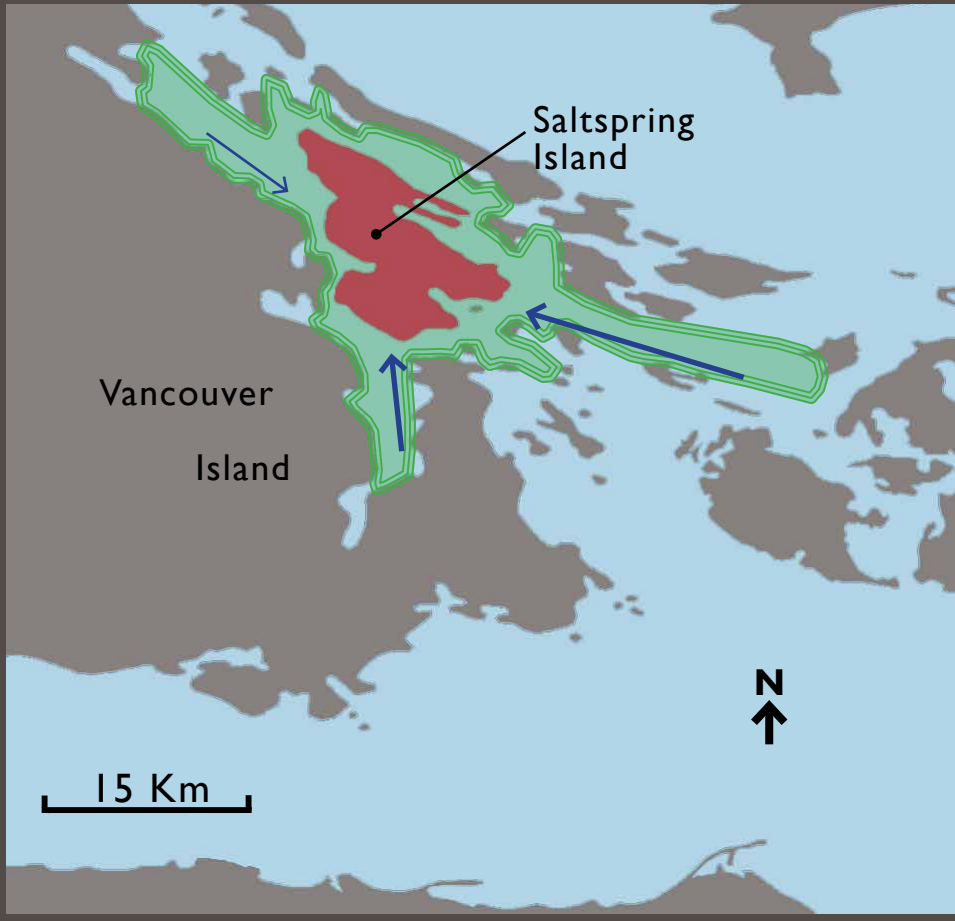
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Rock (Hard) Shorelines			Sediment (Soft) Shorelines		

SALTSPRING Is. SOUTH

MAP 2 of 3: Energy & Sediment Movement

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Watershed Boundaries

Drainage Conveyance Zones
(wetlands, creeks & moist soil areas)

LEGEND:

Wave Exposure:

- Very Low
- Low
- Medium
- High

Sediment Movement:

- Accretion Shorelines (adding sediment)
- Erosion Shorelines (losing sediment)
- Watershed Sediment Inputs to Shoreline System
- Localized Sediment Movement Direction (Small Scale)
- Predominant Direction of Wave Energy

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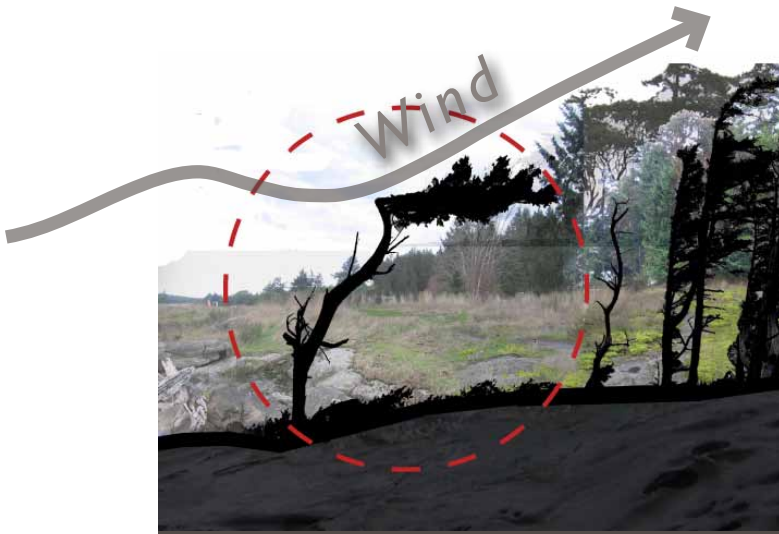
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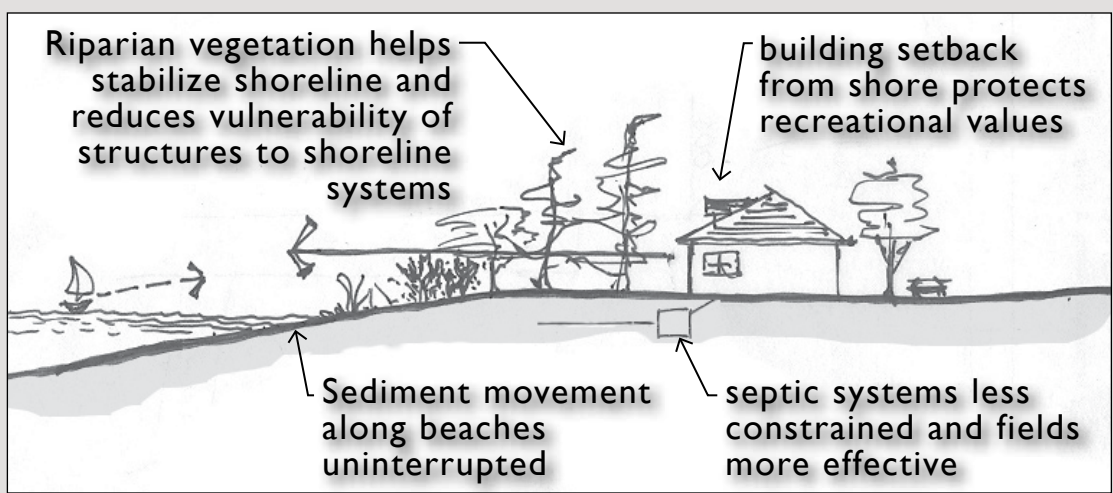
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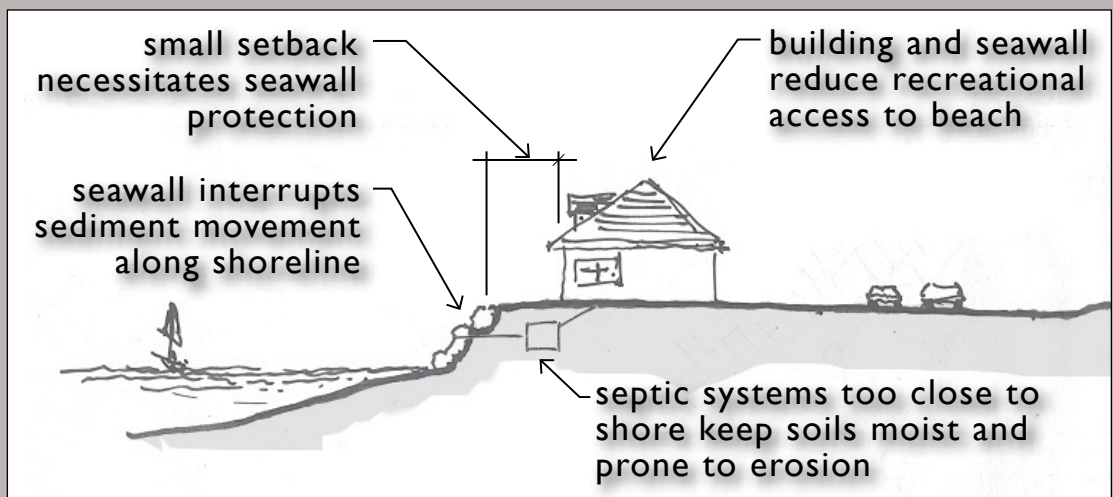
SALTSPRING Is. SOUTH

MAP 3 of 3: Shoreline Values & Vulnerability

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Watershed Boundaries

Drainage Conveyance Zones
(wetlands, creeks & moist soil areas)

Areas Draining to Sensitive Shorelines
(i.e. Very Protected Waters and Salt Marsh)

COMMUNITY INPUT

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1 Km

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