

The background of the slide is a photograph of a coastal landscape. In the foreground, there is a field of tall, green and brown grasses. In the middle ground, a wide, light-colored sandy beach stretches across the frame. Beyond the beach, the ocean is visible, meeting a pale, overcast sky at the horizon. The overall scene is a natural, coastal environment.

Concept Designs for Neighbourhood-Scale Coastal Adaptation Measures: **Overview of Green Shores Design at Gartley Beach**

Presented by:

Jessica Wilson, P.Eng, Coastal Engineer, Northwest Hydraulic Consultants

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The Green Shores Program

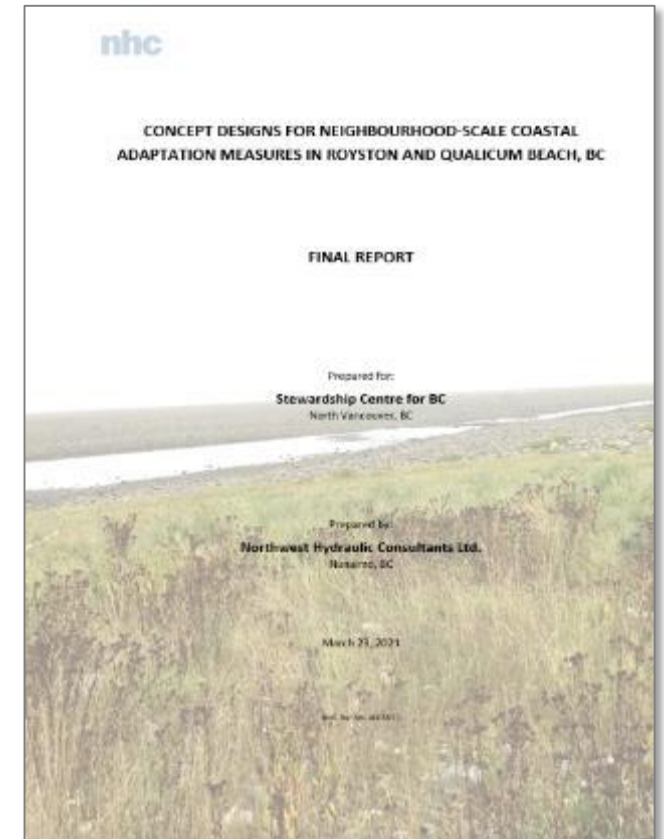
- The Stewardship Centre for British Columbia's (SCBC) promotes sustainable shoreline development through the Green Shores® program
- Four guiding principles:
 - Preserve or restore physical processes
 - Maintain or enhance habitat function and diversity along the shoreline
 - Prevent or reduce pollutants entering the aquatic environment
 - Avoid or reduce cumulative impacts



Source: stewardshipcentrebc.ca

Project Drivers

- Design of shoreline works on an individual-property scale can pose various design and construction challenges
- Neighbourhood scale approaches may provide numerous benefits (e.g. cost sharing, continuity of shoreline processes, etc.)
- This study and report aimed to develop Green Shores concepts on a neighbourhood scale in **Royston** and Qualicum Beach, BC



Project Site in Gartley Beach, Royston

- Located on the historical remnants of the Trent River delta fan
- Varied foreshore composition and existing shoreline protection methods
- Valuable foreshore habitat (e.g. marsh habitat, spawning habitat, shorebird zone)





North End: Marsh Terrace

Existing Shoreline:

- Low-lying cobble beach
- Armoured concrete and rip-rap revetments
- Relatively little habitat compared to adjacent marsh areas



Green Shores Concept:

- Restores a natural shoreline profile
- Expands existing marsh habitat
- Cobble terraces reduce erosion of marsh vegetation
- Restores sediment transport processes
- Increases resiliency to sea level rise





South End: Vegetated Backshore Nourishment

Existing Shoreline:

- Mildly sloping gravel beach
- Vegetated backshore
- Low-lying and susceptible to sea level rise



Green Shores Concept:

- Preserves and builds-upon existing features
- Enhances habitat
- Avoids impacts to sediment transport
- Increases resiliency to sea level rise
- Easily expandable



Conclusions

- The Gartley Beach concepts help to restore natural functions and increase resiliency to sea level rise and erosion at a neighbourhood scale
- Concepts follow the Green Shores for Homes credit and rating system
(application requirements would still need to be met and individual homeowners could achieve additional points through upland works)
- Concepts range in cost (from approximately \$1,300 to \$6,300 per lineal meter)
- Concepts are expected to have significant cost-savings, improve ecosystem function, help protect multiple properties, and serve as references for similar nature-forward and cooperative projects