



HABITAT ACQUISITION TRUST

SHORELINE

protection

& stewardship

Are you sure about the shore?

The shoreline is a place where land meets the edge of a large body of water and is influenced by the movement of that sea or lake.

1. A shoreline is a dynamic gradient of habitats constantly shaped by the action of waves, tides, and wind. Shoreline habitats can include rocky or sandy beaches, dunes, bluffs, salt marshes, eel grass meadows, or tidal pools. Since we place great value on living near these scenic coastal areas, oceanfront real estate properties are heavily sought after. The way we live by the sea can either protect or degrade its quality. It was once believed that the ocean was so vast that it could handle whatever we threw at it, no matter how many fish we took, or how many pollutants we added. We now see the detrimental impact of these decisions, and are beginning to learn the importance of protecting this resource.



More than 100 species of algae grow on Eelgrass blades.

2. From rocky cliffs supporting nesting seabirds to sandy beach nurseries for forage fish, shorelines provide many important ecological values that you can help to protect! The best thing you can do is keep shores natural. *But what does that mean?* With storm surges and strong winds, the shoreline can change drastically by sediment erosion or accumulation. While it can be tempting to build hardened

structures like seawalls or boulders as a barrier to stop these changes, it turns out that hardening the shore can increase erosion of soft sediments in front of the wall to the detriment of native flora and fauna. These barriers often replace the nearshore plants that protect against erosion in the first place, leaving us with less wildlife, less beach, and a costly wall to maintain.

3. Recognizing the benefits of healthy shoreline ecosystems is as simple as taking a walk on the beach. Yet, there's

more at play than what meets the eye. Shoreline vegetation provides food for insects that nourish young salmon when swept out to sea. Dune plants provide shade, moisture, and a protective buffer for forage fish, like Surf Smelts and Sand Lance, that rely on pebble-sand shores for laying their eggs. Without a healthy beach to support spawning feeder fish, we can say goodbye to iconic species like wild salmon and rockfish whose diet relies heavily on forage fish.

With your participation and support, HAT's Good Neighbours Program can help local landowners to enhance and protect habitat for coastal wildlife, keeping the shoreline beautifully and naturally thriving.

Stewardship Series

Issue 6: Spring 2017

Shoreline stewardship with HAT

When it comes to shores, **HAT protects a number of key coastal areas through conservation covenant partnerships:** Ayum Creek Estuary in Sooke, Trincomali Nature Sanctuary's important cormorant nesting bluffs on Galiano Island, as well as Matthews Point and Medicine Beach on Pender Island.

In 2010, through the Cordova Shore Good Neighbours program we helped 40 residents in the Island View area care for their shoreline through free family events and landcare visits.

More recently in 2016, HAT partnered with BC Parks to host a French Beach Cleanup that included taking out invasive plants, transplanting native species, and removing garbage from the beach. **Hosting your own beach cleanup can be a wonderful way to engage your neighbourhood in shoreline stewardship.**

From 2017-18 HAT focuses the **Good Neighbours Program on Shoreline Stewardship in Metchosin.**

If you or someone you know would like to request a landcare visit tailored to being a habitat steward for wildlife on your property contact us at hatmail@hat.bc.ca or 250-995-2428.

6 native plants for beach soft-scaping

Local plants that buffer beach sand and sediments from being swept away by wind and waves.



Sea Thrift
(*Armeria Maritima*)

Grows well in sunny coastal habitat with dry to moist conditions.



Beaked Hazelnut
(*Corylus cornuta*)

Plant along upper banks to stabilize erosion, this tree provides edible nuts.



Large-headed Sedge
(*Carex macrocephala*)

Maritime sedges stabilize sand beaches and dunes, grows in semi-shade or no shade



Nodding Onion (*Allium cernuum*)

Prefers rocky slopes and shoreline, flowering June to August, attracts pollinators



Graceful Cinquefoil
(*Potentilla gracillis*)

Resistant to salty conditions, can easily be planted by direct seeding



Dune Grass (*Elymus mollis*)

Colonizing plant, reduces sand shifting to allow other plants to grow near beach

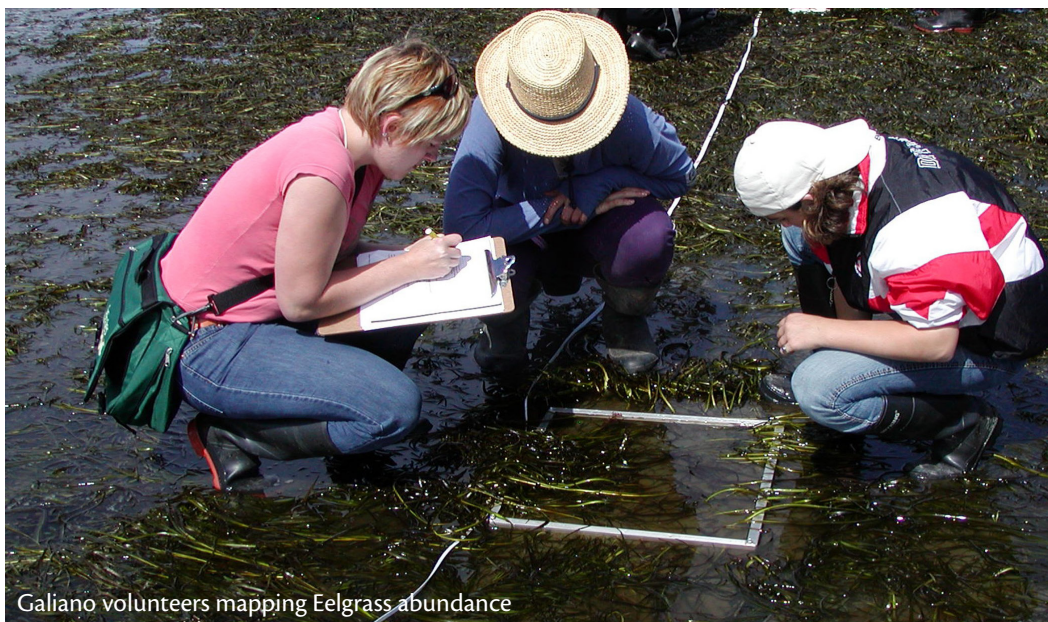
For more informatin on how to naturescape and stabilize your beach with these plants, contact a local native plant nursery. Contact us at hat.bc.ca for a list of local nurseries.

Being a Part of Shore Changes

By Nikki Wright, Executive Director, SeaChange Marine Conservation Society

Coastal changes are happening at an alarming rate all around the world. In Metchosin, as in other shores on the southern coast of Vancouver Island, we are witnessing increased erosion from highly energetic waves, severe and frequent storms and rising sea levels. It is as if strangers have come into our living spaces, overturned the furniture and created chaos. We can either try to block the strangers from coming in and try to lock the door, or find ways to accommodate the chaos that comes with unwelcomed change.

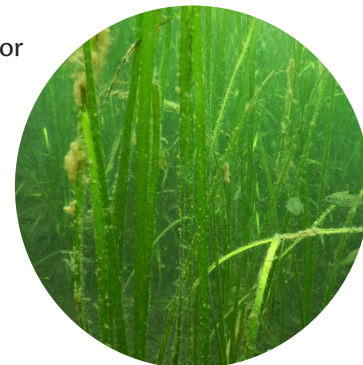
Taking photos is a good way to begin. If you live near the shore, **take a camera with you while strolling the beach. Look at the changes** to the sand or gravel. Is it being replaced by rockier sediment or boulders? Are there more drift logs on the beach? At low tide, do you notice the eelgrass coming closer to the shore or disappearing? Do the tree roots of the backshore forest seem more exposed? Is this what everyone is calling climate change? If so, what do we do with all this chaos? **Contact a Coastal Geomorphologist to seek advice, armed with these photos, they may help find ways to be a part of the changes and not to resist them.**



Galiano volunteers mapping Eelgrass abundance

Suggestions for adapting to changing shores

- **Research alternatives** to controlling chaos: Green Shores for Homes (www.stewardshipcentrebc.ca) and bioengineering methods can help accommodate changes
- **Ask for help** from local environmental organizations like HAT or SeaChange to discuss with your community what others have done
- **Reduce use of fertilizers, pesticides and herbicides in your watershed** to protect eelgrass meadows and clam communities
- **Get involved** with local shore monitoring of eelgrass, forage fish, climate effects on local shores and with beach clean-ups
- **Read about other countries** in the world who are finding creative solutions with facing chaos on shores. We are not alone with these challenges
- **Where beaches are already natural, don't try to alter them.** Natural processes are the best for wave and wind energy absorption on a changing seascape
- **Enjoy the beach by foot.** High impact beach traffic including horseback riding and powered vehicles expose Pacific Smelt and Sand Lance eggs to compaction and drying out. These activities disturb nesting and resting shorebirds, while also reducing their available prey.



Eelgrass underwater. Photo by Coastal Photography Studio

Showing a soft-spot for natural shorelines

As a landowner, How can I help? If you're living "down by the bay" so to speak, you can **be soft on shores**: maintaining or returning the shore to its natural processes to protect against erosion instead of using seawalls and other concrete-based techniques.

Why? Seawalls can occupy space where shore plants would grow taking away both habitat and natural buffers against erosion, sometimes preventing upland sediment from replenishing beaches. As waves rebound against hard structures, the force sweeps away sediment, plant life, and driftwood, losing important habitat and a valuable defense against erosion, leaving you with a wall, and not much of a beach. Maintaining hardscape structures can also be costly. By using softscaping techniques, you can save money, while protecting our shorelines.



Above: example of a hardscaped shoreline.

Softscaping Techniques.

If you have a seawall or concrete structure, consider removing it or not replacing it as it ages. **Talk to a local landscape engineer about simple ways to remove hardened seawall structures and naturalize your shore.**

Grow native bluff or bank plants to help the shoreline. Instead of cutting down trees for the view, keep trees standing and trim as needed. Plants reduce soil loss with their roots, buffer noise, add privacy and bump up a property's worth. A healthy shoreline supports important habitat for a network of species, including many fish, birds, and marine mammals like orcas, bears and wolves. Plants and animals rely heavily on this productive interfaces between the terrestrial and marine environment for food and a critical resting place.

Place untreated logs and root masses above the high-tide line as defense against erosion. Resist the urge to tidy up, as beach debris like seaweed accumulates, more sea-life can claim it as home. These actions increase wildlife viewing opportunities.

By protecting and restoring natural seaside processes you are building a future of beach days for the next generation, strengthening a healthy marine food chain, and bolstering fragile habitats.



Partially buried logs used in softscaping against erosion.

This naturally "soft" shoreline has a gradient from sandy beach to wetland, plus an erosion buffer of woody debris supporting healthy vegetation in-between.

Hidden in the sand is an abundance of diverse insects and fish eggs critical to the diets of shorebirds and waterfowl. The nutrients they provide reach up through the food chain to nourish marine and land mammals like river otters, bears, and even wolves.



Lakeside living



Photo by Peter Norman
Example of a small dock and natural shoreline.

Whether you're on the lake or by the sea...

When it comes to **Over-water Structures**, such as docks:

Share with your neighbours or use public docks over building anew. Minimize impact on vegetation both underwater and nearshore by going small, avoiding designs that require fill or dredging, and using grating or gridding to allow natural light through. Choose non-toxic material. Narrow your **beach access** down to one spot to preserve as much shoreline habitat as possible.

Be a pal not a polluter: Toxic chemicals and fertilizers flow as runoff from your land to the water. Choose organic gardening supplies and use fertilizer sparingly. **Even if you don't live near water your choices all flow to the sea.**

Sewage contamination introduces excessive nutrients, fecal coliforms, and toxins to the ecosystem, causing such things as algal blooms depriving water and dependent organisms of oxygen. Contamination also contributes to economically damaging fishery or beach closures.

Install septic fields 30+ meters from the shore directing drainage away. Properly maintain your **septic system**. Most households require pumping every 3 - 5 years.

If you live in lakeside habitat or would like a visit about your shoreline stewardship, contact HAT.

Bonus Tip: Go easy on the lawn-mower, leave a 15-30 m or more buffer of native tall grasses, shrubs and trees before shore.

Shorelines



Feeder fish like these Sand Lance spawn are found in sediment near the log-line during high tides.

Saving shorelines

Can I be a beachcomber and a beach caregiver? Yes! As you head down to the beach, keep yourself and your (furry) friends on existing trails whenever possible. Give birds plenty of space. Repeated disturbance may cause them to avoid an area making their arduous migrations needlessly more difficult. Marsh and dune plants are sensitive to trampling. As you scamper on rocks, avoid stepping on intertidal life such as mussels or clams.

Got a crab in the bucket? Never transport animals from one coastal area to another, you could aid the spread of invasives species or disease. **Only take pictures, not shells!**

Fires are not permitted on beaches in Greater Victoria. Where fire is permitted, use existing fire pits or share with others instead of creating more. Keep firepits away from intertidal, the heat kills marine life hidden in surrounding sediment.

Seen a seal pup? Give it space (100+ yards), keep your own pups leashed. Seals leave young on the beach while hunting, they are not abandoned.

What about Best Practices for Boaters? To avoid harbouring alien species wash your vessel, remove vegetation from your gear, and drain your boat of water before transportation to another region.

Avoid anchoring on **eelgrass beds**, use mooring cans and public docks instead. Slow down or stop when traveling over eelgrass to prevent damage by propellers or uprooting. Drop your crab-pots outside of eelgrass beds. This plant is important habitat for numerous creatures, including Pacific Herring that spawn in it, and similar to kelp it also reduces erosion.

Your support and careful land management means that instead of losing key wildlife habitats, coastal areas continue to shelter and nourish the natural vitality of our region.

Special species down by the sea shore



1. Yellow Sand Verbena (*Abronia latifolia*) provincially red-listed dune plant.
2. Sand Verbena Moth (*Copablepharon fuscum*) require Sand Verbena as hosts.
3. Contorted Pod Evening Primrose (*Camissonia Contorta*) red-listed flower.

Stewardship Series #6

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Information Credits: A Landowner's Guide to Protecting Shoreline Ecosystems and Sharing our Shorelines (Islandstrust), Coastal Shore Stewardship (Stewardship Centre for BC), Guide for Shoreline Living (WSU Shore Stewards), and MetchosinMarine.ca

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From by the sea to you and me

Habitat Acquisition Trust is South Vancouver Island and the Gulf Islands' land trust, caring for wildlife habitat in our coastal communities.

Your support will help provide important habitat to conserve the lives of creatures and ecosystems in peril.

Photo: Least Sandpiper and Sea Asparagus



Yes! I care about the coast - I will take action to save shoreline habitat for wildlife. Here is my donation to HAT!

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Postal Code: _____

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- Land Protection
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- Keep my donation anonymous
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