

Coastal Sand Ecosystem Management Guidelines

*North Thormanby Island
Sunshine Coast, BC*

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South Coast Conservation Program

www.sccp.ca

Facilitating projects and activities to protect and restore species and ecological communities at risk on B.C.'s South Coast

This document provides guidance on stewardship for coastal sand ecosystems and does not replace or ensure compliance with any and all regulatory or legislative requirements. Land-use management decisions should be made in accordance with all applicable local, provincial and federal regulations in concert with the expert advice of a qualified, properly skilled professional.

Habitat restoration projects can be complex. This guide is not a substitute for the expertise of experienced professionals and practitioners. For assistance, consult professional organizations like the College of Applied Biology. <https://www.cab-bc.org/>.

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Introduction

Scattered along the South Coast of BC are unique sand ecosystems made up of a combination of sand and plants – with the plants in patches on beaches, spits and dunes. Tides, storm surges and ocean spray help to build and maintain these ecosystems. These areas support several provincially red-listed (endangered) ecological communities. As well, the plant communities that result support a range of rare and interesting animal life. The cabins of the community of Vaucroft on North Thormanby Island are located on or adjacent to such an ecosystem.

Coastal sand ecosystems are important as they contribute to BC's biodiversity, provide recreational benefits for outdoor enthusiasts and buffer inland areas from flooding or storm damage. On BC's South Coast, coastal sand ecosystems are found in a few areas. Savary and the Thormanby Islands have the best examples on the Sunshine Coast. In the Lower Mainland, the main locations are Iona Beach (Richmond) and Boundary Bay (Delta).

It is estimated that since the 1930s, about 57% of coastal sand ecosystems have been lost on the South Coast. This has been due in part to development and vegetation changes. Main threats to coastal sand ecosystems are invasive plants and changes to sediment transport. Scotch broom (*Cystisus scoparius*) is a main cause of vegetation change. English ivy (*Hedera helix*) is another non-native invasive plant that can quickly cover large areas.

Thormanby Island Coastal Sand Ecosystem Locations

The Thormanby Islands are located on the Sunshine Coast, just west of Halfmoon Bay. They consist of two separate islands that are now recently connected due to sand depositions from the nearby bluffs. These bluffs, some active and some stabilized with forest, are found mostly along the perimeter of north sections of the island with some in the south section.

There are two coastal sand ecosystem sites on the Thormanby Islands. On the south island, there is Gill Beach in Buccaneer Bay that has a large sand plain and a salt marsh. Buccaneer Bay also stretches from Gill Beach north to Buccaneer Bay Provincial Park, managed by BC Parks. Coastal sand ecosystems are found all along this stretch of Buccaneer Bay.

On the northeastern side of North Thormanby Island is Vaucroft Beach. This area is on a crescent-shaped sand deposit with a main access dock in the middle. To the south of the dock is the current access point for unloading barges with vehicles. The coastal sand ecosystem area of interest is primarily to the south of the dock (See Figure 1).



Source: SCCP Files

Figure 1: Map of Vaucroft community showing main location of the coastal sand ecosystems

Significant Coastal Sand Ecosystem Ecological Features of Vaucroft

There are two red-listed (endangered) ecological communities found in the community of Vaucroft. Ecological communities are ranked by the Province's Conservation Data Centre. The two rare ecological communities are:

- Large-headed sedge
- Dune wildrye – Beach pea

The large-headed sedge plant community (Figure 2) is one of the sparser coastal sand ecosystems. In Canada it only occurs within BC's shorelines. Large-headed sedge (*Carex macrocephala*) is the dominant plant in this plant community, but other associate species are the dune wildrye (*Leymus mollis ssp. mollis*), beach pea (*Lathyrus japonicas*) and red fescue (*Festuca rubra ssp. rubra*). Identified threats to the large-headed sedge ecological community are barriers to sand movement, trails, foot and wheeled vehicle traffic and invasive species.



The dune wildrye-beach pea ecological community (Figure 3) is often found at the high tide line and right above it. Active sand movement is common, but when further inland, dune wildrye can provide a barrier to sand movement. Dune wildrye is the dominant plant. Other plant species include beach pea, large-hedge sedge, silver burweed (*Ambrosia chamissonis*) and American searocket (*Cakile edentula*). Identified threats for this ecological community are barriers to sand and water movement, foot and wheeled vehicle traffic and storage of recreational items (such as boats).

Mosses and lichens are also found in coastal sand ecosystems. The Vaucroft area has several moss species, including the provincially blue-listed (threatened) moss, *Homalothecium arenarium*.

Federally or provincially-listed species at risk have not yet been recorded. However, since the coastal sand habitat is similar to other locations along the South Coast and Vancouver Island where various Species at Risk have been recorded, it is possible that rare species do exist. These may include plants such as the federally-listed endangered contorted-pod evening-primrose (*Camissonia contorta*), or rare invertebrates like the Island Tiger Moth (*Grammia complicata*) or Edwards' Beach Moth (*Anarta edwardsii*).

Some species of birds use coastal sand areas for feeding and nesting. One species that may be found on the beaches of the Thormanby Islands is the federally-listed threatened Common Nighthawk (*Chordeiles minor*) whose population numbers have been declining.



Photo credit: Kym Welstead

Figure 2: Large-headed sedge



Photo credit: Tamsin Baker

Figure 3: Dune wildrye - beach pea ecological community



Guidelines for Managing the Coastal Sand Ecosystems of Vaucroft

Coastal sand ecosystems thrive on natural disturbances, but too much impact from humans is damaging. The purpose of these guidelines is to outline some practices that will reduce human impact and allow these natural areas to prosper, while still respecting the area as a popular vacation site.

Minimize human impacts

- Stay on existing trails and avoid creating new ones. It is preferable to have a few main paths than many small paths. One low-impact way to delineate trails and discourage new ones is to place driftwood on each side of the path. Boardwalks can impede the natural movement of the sand. If a boardwalk is placed, a raised boardwalk with the minimal width possible is preferable.
- Pick up after pets. Waste from dogs introduces unwanted nutrients to the sand thereby changing soil composition.
- Keep wheeled vehicles off the beach as much as possible, as these vehicles compact the beach, can introduce invasive species on their tires, and can damage rare plants.
- Avoid playing on, digging into or sliding down steep sand cliffs. This is a hazardous activity as this can cause large chunks of sand to break loose and possibly cause bodily harm, as well as cause accelerated erosion of the cliffs.
- Remove furniture, boats and structures from the beach during the offseason months to allow for natural beach processes to occur during the winter storms and high tides.
- Control invasive plants. The most damaging species is Scotch broom (See Figure 4). This plant can spread rapidly and densely, crowding out native plants and changing soil composition. **Scotch broom forms dense thickets and is highly flammable – a definite fire hazard.** Its pollen can cause allergic reactions in some people.
- Respect the rare plants in the coastal sand communities. Although large-headed sedge is prickly, please do not pull them as they are an important, rare plant in the environment.



Photo credit: Tamsin Baker

Figure 4: Scotch broom



How to control Scotch broom

- Cut “Broom in Bloom” at ground level as low as one can go. If the plant is too big to cut at the base, cut off all the green branches and/or the yellow flowers before they go to seed.
- Avoid disturbing the soil. This may cause the seeds in the soil to germinate.
- Do not cut when the seedpods form. Moving broom with seedpods can spread the seeds to uninfested areas.
- Stop its advancement. Start by going after new infestations.
- Seeds can last in the soil up to 50 years. Persistence is key. Once an area has been cleared, return each year to pull up the new seedlings before they create new seedpods.

For more information about coastal sand ecosystems on the South Coast of BC or invasive plant removal, contact the South Coast Conservation Program. www.sccp.ca

References

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