



Conservation Management Plan

Somerset Long Bay West Nature Reserve
Daniel's Head Road, Somerset

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Contact Information:

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Site Location – Somerset Long Bay West Nature Reserve is located on Daniel's Head Road in Sandy's Parish. *Location plan attached.*

Site Area – The site measures 2.71 acres

Site Owner – The Bermuda Audubon Society

Bermuda Plan Zoning – The site is zoned Nature Reserve in the 2008 Bermuda Plan and in the Draft Bermuda Plan 2018.

Goals

- To restore the nature reserve by removing an overgrowth of invasive plants, particularly Cow Cane, and Morning Glory and Pothos vine smothering Black Mangroves, Red Mulberry and Southern Hackberry trees.
- To create an area of clear understory beneath the mature trees on the south side of the reserve between the roadside fence and the pond, so that invasive vines can be controlled by regular cutting/mowing. (This will also ensure that the overgrowth does not extend beyond the fence into the road, where it presently needs regular cutting back to avoid causing a traffic hazard.)



- To re-isolate the mangrove islets from their connection to the shoreline by pruning and dredging, to ensure predator-safe nesting for waterfowl.
- To replant as necessary to replace dead trees and removed invasive species.

Site Description

Topographical Features and Visual Amenities

The reserve is on low-lying ground immediately behind Somerset Long Bay beach, west of the Government Park. A little over one-third of the reserve acreage consists of a (restored) fresh water mangrove pond which is visible over the perimeter fence from the south and west sides.

Flora and Fauna

Mature Red Mangroves (*Rhizophora mangle*) and Black Mangroves (*Avicennia germinans*) are the dominant native trees in the reserve, mainly on the islands in the pond, around the pond perimeter and along the west and north edges of the reserve. To the west and south of the pond there are several mature Red Mulberry trees (*Morus rubra*) and Southern Hackberry (*Celtis laevigata*). There are also a few specimens of Bermuda Palmetto (*Sabal bermudana*) within the reserve. Wigeon grass (*Ruppia maritima*) occasionally grows in the pond.

Invasive species of flora include Cow Cane/Giant Cane (*Arundo donax*), Morning Glory (*Ipomoea indica*), Pothos vine (*Epipremnum pinnatum*), a few Chinese fan palms (*Livistona chinensis*), some Brazil Pepper (*Schinus terebinthifolius*), some Pride of India (*Melia azedarach*) and Para Grass/Buffalo Grass (*Urochloa mutica*).

The pond itself supports a healthy population of the introduced top-minnow *Gambusia holbrooki*. The pond provides a rich feeding ground for many species of migratory waterfowl including ducks, herons, egrets and kingfishers. Because of its location on the north-west tip of Bermuda, newly arrived migrants, including rarities, are often first spotted here.

Yellow-crowned night herons and green herons nest here regularly and moorhens, coots and pied-billed grebes have all nested here at times in the past. Purple gallinule can often be seen. There are also a few introduced Muscovy ducks and mallards living within the reserve.

Bermuda Audubon Society's Nature Reserve Management Policy

As a general policy Bermuda Audubon Society supports the conservation of endemic and native flora over naturalized flora on our nature reserves. To the extent that they are compatible with native flora we retain naturalized species in the interest of biodiversity, but where they aggressively invade and become monopolistic our policy is to cull them out altogether. Where major culling of monopolistic species would result in total denudation, it is our policy to do portions of a reserve at a time and phase the work over several years to allow native plantings to grow in before new sections are cleared.



Bermuda's Biodiversity Strategy and Action Plan (BSAP)

This project contributes to the implementation of Bermuda's Biodiversity Strategy and Action Plan. BSAP recognises Bermuda's need for a coordinated, community-based plan for conserving the Island's increasingly threatened biodiversity. This project will advance objectives C, D, E, I, J, and L of the Plan by applying effective management of a protected area whilst increased active participation of the community and the private sector will improve and strengthen biodiversity education, enhancing public awareness of the intrinsic values of biodiversity.

Site Management History

This reserve was acquired in 1971/1972 as an abandoned garbage tip and successfully restored as a fresh water mangrove pond habitat. Originally a marsh behind Somerset Long Bay beach, the site had been filled in with garbage in the early 20th century. In 1973 the pond was re-excavated, leaving islands where healthy stands of mangroves had survived. The excavated material, a mixture of bottles, rusted metal, rubble, soil and peat, was used to form a level dyke north and east of the new one-acre pond. The pond turned out to be fresh rather than brackish water, despite its proximity to the beach. After it was deepened in 1979 to prevent it being choked by Sheathed Paspalum grass, it developed a rich freshwater marsh community with abundant Wigeon Grass, fish and invertebrate life to support waterfowl. A perimeter chain-link fence was erected in 1985 and replaced in 2007.

Objectives and Phases of Work

PHASE 1: September 2019

Removal of invasive plants

- Using a combination of a small backhoe and manual labour, remove an overgrowth of invasive Morning Glory and Pothos vine smothering Black Mangroves, Red Mulberry and Hackberry trees between the pond and the roadside on the south of reserve and at the south-west corner. Use backhoe to remove (or chip if appropriate) a large amount of historic horticultural waste piled up against the inside of the perimeter fence along Daniel's Head Road.
- Manually remove vines which are covering the trees. Some trees are so heavily covered in vine it is impossible to say if they are still alive. If they are dead, we will remove them to allow room for new planting of Bermuda Cedar, Palmetto, Red Mulberry and Hackberry. Vines to be removed to horticultural dump.
- Clear the understory of vines beneath the mature trees on the south side of the reserve between the roadside fence and the pond, so that they can be controlled by regular cutting/mowing.
- Use small backhoe to dig out sections of Cow Cane to reinstate a maintenance trail from the gate in the eastern fence to the south side of the pond and north towards the beach side of the pond. It is not planned to attempt to remove all the Cow Cane - some will remain on the eastern side of the reserve, just inside the fence. Cow Cane that is dug out will trucked from site to Government horticultural waste dump.

- Remove Chinese Fan Palm and Brazil Pepper wherever they are found in the reserve. Where possible, this vegetation will be chipped and remain on site.

PHASE 2: September 2019

Reopening of waterways

- Prune or remove any non-native or invasive vegetation between mangrove islets and the rest of the reserve.
- As necessary, use small backhoe to reopen water channels to separate islets from shoreline. Dredged matter to remain on reserve where vines have been removed.
- If necessary, limited pruning of mangroves may be required to ensure islets are fully separated from shoreline.

PHASE 3: October 2019 and ongoing

Planting and Ongoing maintenance

- When weather is appropriate (i.e. not too hot and dry) plant new Red Mulberry, Hackberry, and Cedar and Olivewoods to replace dead trees and occupy the space previously taken over by cow cane. Plant Snowberry in the understory.
- Use mowing equipment to prevent regrowth of Cow Cane on the maintenance trails and regrowth of vines underneath the trees on the southern and western sides of the reserves.

Plant Schedule

Species	Number (one-gallon pots)
Red Mulberry (<i>Morus rubra</i>)	2
Southern Hackberry (<i>Celtis laevigata</i>)	2
Bermuda Cedar (<i>Juniperus bermudiana</i>)	2
Bermuda Olivewood (<i>Cassine laneana</i>)	2
Snowberry (<i>Chiococca alba</i>)	12

Attachments:

Location and Zoning Map

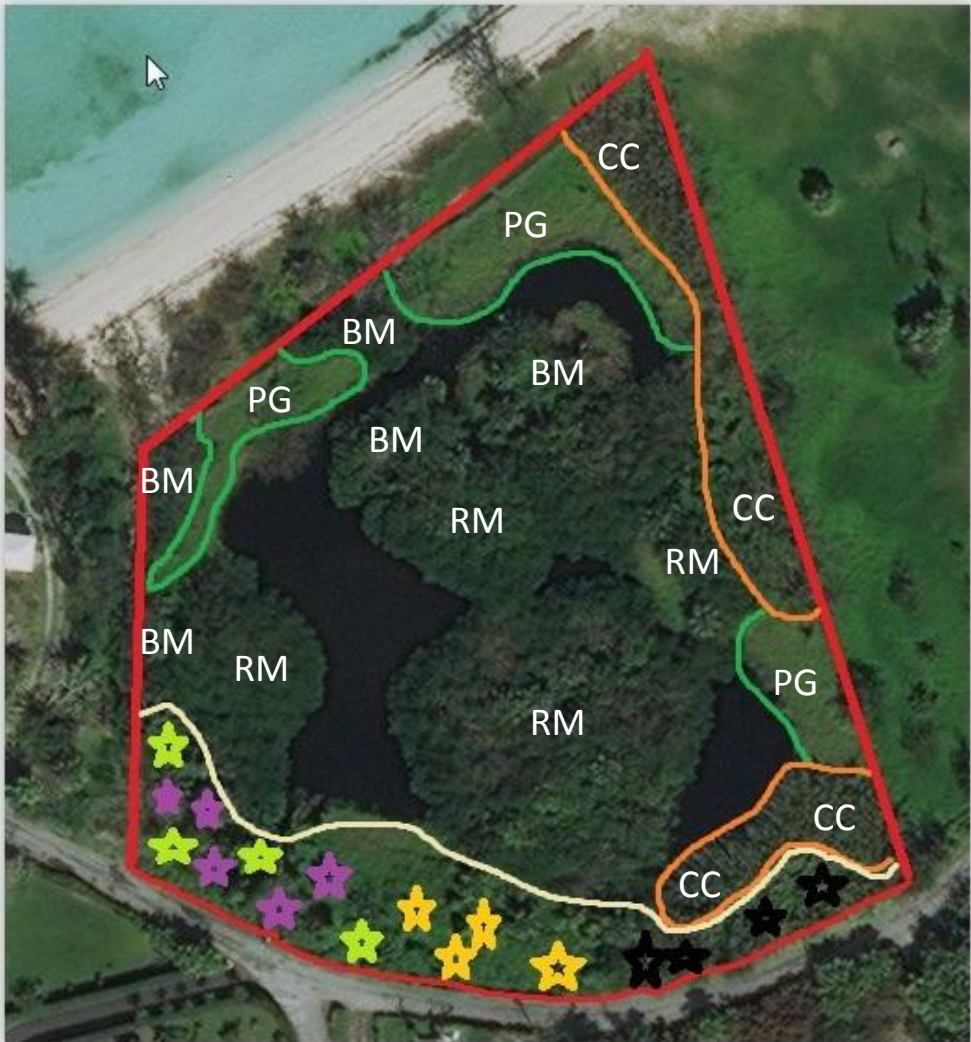
Site Plan showing existing vegetation

Site Plan showing proposed areas for invasive removal/replanting

Photographs



Somerset Long Bay NR: existing vegetation



Key

- █ Perimeter fence
- BM = Black Mangrove
- RM = Red Mangrove
- CC = Cow Cane
- PG = Para Grass






- ★ Vine-covered Red Mulberry
- ★ Vine-covered Hackberry
- ★ Vine-covered Black Mangrove
- ★ Vine-covered trees, unknown species, possibly dead
- Vine covered area



Somerset Long Bay NR: proposed renovation



Key

-  Area to clear of Morning Glory and Pothos vine
-  Area to clear of Cow Cane
-  Area for vegetation removal/pruning and dredging
-  Chinese Fan Palms to be removed
-  Brazil Pepper to be removed

