

Ashton Lagoon Restoration Project – Phase I of Works

Report to The Nature Conservancy, the Philip Stephenson Foundation
and the Grenadines Partnership Fund from Sustainable Grenadines Inc.
(SusGren)

23rd December 2017



Newly opened channels in the abandoned pier in Ashton Lagoon at the end of phase I, December 2017.
Photo credit: SusGren.

Introduction

First of all, a huge thank you to the Philip Stephenson Foundation, the Grenadines Partnership Fund and The Nature Conservancy for enabling SusGren to begin the restoration and sustainable development of Ashton Lagoon. We and our stakeholders have been planning this project for 13 years so we are thrilled to finally be carrying out physical works to restore water circulation and enable marine life to recover!

Background

In 1994, Valdeterro Construction Company began work to construct a 300-berth marina in Ashton Lagoon, Union Island, Saint Vincent and the Grenadines. One year later, the company declared bankruptcy and the construction project came to a halt. By this point, a causeway had been constructed between Union Island and the offshore islet Frigate Island, and an access road built around the mangrove forest.

These structures caused various negative environmental and socio-economic impacts. The causeway blocked water circulation to the western half of Ashton Lagoon, causing water to become stagnant and marine life – including the once abundant lobster and conch populations – to die (**Figure 1**). The mangrove forest – the largest in Saint Vincent and the Grenadines – no longer functions as a fish nursery because it is cut off from the sea by a road. This has also prevented the wetland from draining properly, resulting in the death of 10 acres of black mangrove. Fishers have felt the impacts on their catches, and had to bear additional fuel costs because of the presence of the causeway, having to travel around the outside of Frigate Island to reach fishing grounds.

Since 2004, SusGren has been working with the Union Island community and others to plan the restoration and sustainable development of Ashton Lagoon. In 2013, TNC, SusGren and the community created conceptual designs for restoration of the area and eco-tourism. In 2015, TNC commissioned coastal engineering firm Smith Warner International to determine the most cost-effective means to restore water circulation and thus enable marine life to recover.

Now, with funding from the Philip Stephenson Foundation and the Grenadines Partnership Fund through TNC, and the German Development Bank KfW through the Caribbean Community Climate Change Center, SusGren is executing the planned works to restore water circulation and improve biodiversity. With further funding from KfW and the Global Environment Facility, SusGren is simultaneously developing ecotourism to provide sustainable livelihood opportunities for the people of Union Island.



Figure 1: Stagnant water inside the abandoned pier prior to restoration works. Accumulation of nutrient had caused visible algal growth.

Results to date

Phase I of the engineering works – co-funded by the Philip Stephenson Foundation (93%) and the Grenadines Partnership Fund (7%) – is now complete. Phase I involved the following elements, which were successfully completed:

- 15 meter wide channels were excavated at five of the finger piers in the derelict pier structure (gaps 1 to 5 in **Figure 2**).
- Soil samples from all seven channels to be excavated were tested for contaminants (heavy metals and hydrocarbons) as a precaution. The results indicated negligible traces of contaminants so the material could be safely disposed of on site.
- Due to the favorable results of the soil tests, the contractor placed and graded the excavated sand along the seaward side of the derelict pier creating a semblance of beach. The aesthetics of the pier is drastically improved.
- A temporary access road was reinforced to enable truck access to remove debris. This remains in place to facilitate Phase II.
- Rocks were placed on the outer causeway adjacent to the site of gap 6. During Phase II, these rocks will be placed to form an armor stone revetment to prevent erosion of the channel sides.
- The contractor removed a derelict yacht near Frigate Island that had been slowly disintegrating.
- The site was cleaned and left in a satisfactory condition.

13 local people were employed in the roles of foreman, excavator operator, truck operator, boat man and laborers. The works were performed by Marengo Ltd. and supervised by Adams Consulting Ltd.



Figure 2: The engineering designs created by Smith Warner International. Gaps 1 to 5 have now been excavated thanks to funding from Philip Stephenson Foundation and the Grenadines Partnership Fund.



Aerial view of Ashton Lagoon during excavation of gap #2, November 2017. Photo credit: Arthur Daniel.



Excavation at gap 2. Turbidity barriers were deployed to prevent sediment from harming marine life. Photo credit: Arthur Daniel.



Top left: Philip Stephenson Foundation Executive Director, Eugen Babau and Marenco Ltd. Managing Director, Anthony Cooper, at the Ashton Lagoon site.



Top right: Excavator removing sand at gap 2.



Right: Excavation at gap 3.



Bottom right: Clearing debris from the pier.



Above and below: The main causeway at the end of Phase I. The excavated sand has been placed and graded on the seaward side.



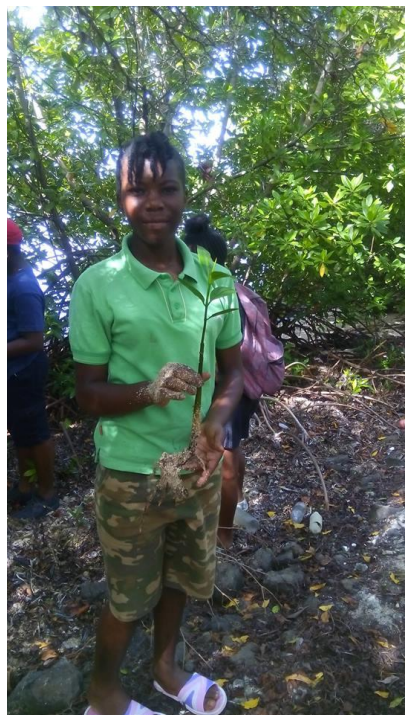
In addition to the engineering works, SusGren has accomplished the following complimentary results:

- Collected pre-restoration data on water quality and marine organisms. This will provide a benchmark against which to measure ecosystem improvements.
- Trained five local youths as field researchers whom SusGren will employ to monitor the environmental changes that take place.
- Created architectural designs for ecotourism infrastructure – nature trails, wildlife viewing towers and an interpretive center – and swales reconnecting the mangrove forest with the sea.

Furthermore, TNC replanted 10 acres of the mangrove forest with 3,000 red mangrove saplings. This is anticipated to aid recovery of biodiversity and ecosystem services.



Upper left: SusGren interns collecting water quality samples. **Upper right:** Tobago Cays Marine Park staff assist with nutrient analysis of water samples following training facilitated by SusGren. **Below:** SusGren Junior Rangers getting involved in TNC mangrove reforestation activity in Ashton Lagoon.



Future activities

A one-month defects liability period shall end on 18th January 2018. During this period, SusGren's engineer shall inspect the works and determine if any remedial work is required. Phase II, which will fully complete the engineering works and result in the flushing of the lagoon, is due to be completed in the first quarter of 2018.

SusGren will involve the newly trained field researchers in monitoring the environmental changes that take place and communicating the results to the wider community. This is anticipated to increase employment opportunities for the trainees and build community support for environmental management.

SusGren will begin construction of the nature trails, wildlife towers, interpretive center and swales in early 2018, and partner with Birds Caribbean to train 15 local people as interpretive guides for birding tours and market Ashton Lagoon as part of the Caribbean Birding Trail. TNC, SusGren and partners will also develop apiculture in Ashton Lagoon, taking advantage of the fact that black mangroves produce premium honey that retails for >50% more than regular honey. Enabling local people to make a living from eco-tour guiding and production of black mangrove honey is intended to improve their well-being, give them a greater economic stake in the health of local ecosystems and thus a greater reason to protect them.



Left: SusGren Junior Rangers bird watching in Ashton Lagoon. **Right:** The purple gallinule used to frequent Ashton Lagoon on its migratory route but, since the failed development, no longer does. Instead it uses a site in Mayreau. SusGren hopes that the gallinule returns to Ashton Lagoon and that the Junior Rangers get to appreciate it.