



Simpson Bay Lagoon is in Danger

How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

6.4.14

Introducing WFCRC's Simpson Bay Lagoon Mapping/Monitoring Project Relevant to residents of St. Maarten

Background and current position.

The real added value behind our conservation programs in St. Maarten is to **raise the awareness** of events on the island that at some point will have devastating impacts on local features; and in addition will have a catastrophic effect on the very life style of every island resident. There are features on the island that are in danger of suffering irreversible effects from a variety of manmade and marine threats. The feature we are focusing on with this project is "The Simpson Bay Lagoon" and how we can present this threat so as to peak the awareness of the residence in St. Maarten.

Tadzio Bervoets and the Nature Foundation has done an outstanding job in gathering vital data for identifying information regarding the components of the lagoon and their corresponding digital data description.

The real disconnect comes from local stakeholders not having an interest in the situation that The Nature Foundation has identified in their report "Simpson Bay Lagoon Ecological Important Area Monitoring". The common belief is that nothing will happen to the lagoon or it can't happen here. The real concern shared by most residents is how *any* of these threats will effect "ME". To show columns of data or numbers simply just does not have the desired effect to raise the awareness and to give the threat the attention needed to prevent the Lagoon from becoming a loss of revenue.

Tadzio suggested we talk to the representative of the Simpson Bay Lagoon Authority, the Governing Body of the Lagoon. They would be very open to such a project. I would like Tadzio to start to make the contacts with them so we might collaborate in an effort to raise the importance of protecting this sensitive area. The Nature Foundation has made an assessment of sensitive areas in 2012 and we can use this as a basis to build on. This is the drop box link to that report: <https://www.dropbox.com/s/qm1sotvpbxfoi7j/Lagoon2013.pdf>

1. The concern that is on most peoples' minds is the value of the Lagoon that is outlined in the "Simpson Bay Lagoon Ecological Important Area Monitoring" by The Nature Foundation of St. Maarten.

"Based on the United Nations Environment Program (UNEP) World Conservation Monitoring Center, a 2006 document identifies shoreline protection and other ecosystem services from mangroves, the Value of the 880 square meters of Mangrove Habitat which represents the Mullet Pond ecosystem is equal to USD **\$792,000 per year towards the economy of St. Maarten** in its intact form, not counting or taking into consideration the high biological value that the area represents.

The Marketing of the Mullet Pond area as a high Value Eco-Tourism experience is significantly untapped. With increased trends moving towards the marketing of Caribbean islands as eco-tourism destination Mullet Pond can



Simpson Bay Lagoon is in Danger

How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231 contribute significantly to eco-tours in the form of snorkeling, diving, limited fishing excursions, kayaking and ample bird and reptile watching opportunities, thus further reinforcing the economic contribution of the ecosystem.”

The loss of this valuable resource would have negative impacts on every resident that lives on the island. The loss of this income for the island could result in fewer improvements, fewer social development programs and many other support mechanisms that the local [government provides its constituents](#).

The foremost local concern is the current monetary value of the Simpson Bay Lagoon. The loss of this valued resource would be one of those devastating events that needs to be communicated to everyone on the island.

As each boat enters the lagoon, each boat could pay more to SBAC – (Simpson Bay Lagoon Authority Corp) each time they enter the lagoon. Each boat could pay more to dock at the marina. With the increase of these fees day workers would find fewer jobs. Fuel and water would cost more in the lagoon, sewage fees would increase. Repairs done to hydraulics, refrigeration, rigging, decking, paint, antifouling, cushions and covers all would cost more if the Simpson Bay Lagoon becomes an environmental disaster and the income from the Lagoon is lost.

2. The other concern that must be communicated is the environmental one.

The sea grass beds of St Maarten provide a biological filter system for the waters within the bays and lagoons. *This should give the water its striking azure blue color which is an essential feature to attract Tourists to the area, which in turn supports local businesses.* The Sea grasses also prevent terrestrial sediments from reaching the reef where they would smother and kill coral reef organisms.

The sea grass beds also provide a nursery and habitat for numerous commercially and recreationally valued marine animals such as Conch and juvenile fish. Internationally endangered species such as turtles also depend on the wellbeing of the sea grass for their survival.

The Sea grasses in Simpson Bay Lagoon have all but disappeared as a result of pollution, anchoring and eutrophication caused by excessive nutrients entering coastal waters as is compared to their previous state. It has been estimated that some 80% of the original sea grass and the biodiversity has been depleted or severely eroded. Although there are still healthy areas these areas no longer reflect the biodiversity or the original density of Sea grasses as there once was in the Lagoon. The overfishing of Queen Conch (*Strombus gigas*) has also disrupted the dense root networks of the Sea grasses removing their sediment binding and trapping function which results in murkier waters and mobile sediments.

Dredging of vast areas of sea grass in the lagoons and bays for **land and transportation reclamation** has led to the destruction of much of the sea grass habitat of St. Maarten. **Dredging and landfill** continue to threaten the remaining areas of sea grass around the island.

WFCRC Proposal

So how do we communicate these threats in such a way that the residence of St. Maarten will take notice and begin to realize that a contingency plan needs to be developed now rather than later? They need to know that time is not on their side. A response plan needs to impress upon everyone that the responsibility is in their hands and not wait or someone else to deal with these threats.



Simpson Bay Lagoon is in Danger

How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

A more effective avenue to raise the awareness is to use language that is somewhat stronger than what has been used in the past, words like “**in danger and threats to inhabitants**”. To aid in this VISUALIZATION we will prepare an easy to read and understand a [GIS map](#) that shows the location of the information that has been gathered by the Nature Foundation and by WFCRC. The base for our underlying image will be aerial imagery from UAV's (unmanned aerial vehicle.) that use multi spectral bands (infrared and near infrared) for identification of many features previously not seen before. Maps are the perfect interface between humans and data. [Without maps we are spatially blind](#). This conservation effort aims to increase the historical, cultural, economic, environmental and coastal change management awareness and the promotion of St. Maarten's tourism product and location based services.



Its one thing to look at a page or a column of data and it's quite another to be able to see an overall view of the Lagoon and where some of the problems areas are located. Our dash board will also provide a virtual library based on location. It will give our *registered members* the opportunity to mouse over a location and see what research or articles are available for that location using their smart phones.

Mangroves are another feature that is of special interest. Where mangrove plants have rooted in the shallow water, and sediments around their roots have built up to sea level, extending the coast and reducing wave action by 80% or more.

This UAV imagery and our GIS dashboard will provide a current over view of the lagoon. Areas of sediment flow, sewage release, water condition and other problem areas can be identified and make it easier for people to see where problem areas are and what that they can do. We realize that there is more to coral conservation than observation and identification. We approach this effort from a holistic and business sharing aspect. It will help identify



Simpson Bay Lagoon is in Danger

How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

responsible parties and maybe they will see the light and *become part of the solution rather than part of the problem*. With the identification of problem areas coastal development plans can be revised so as to limit construction in sensitive or problem areas, maybe the issuing of building and development permits can be assisted by our holistic view of the lagoon.

With input from the Nature Foundation, EPIC, Simpson Bay Lagoon Authority, UAV vendors and others we will be able to create a living document that will be the base line to aid in change management of The Simpson Bay Lagoon well into the future.

Thank you

Vic Ferguson

*Vic Ferguson
The World Federation for Coral Reef Conservation
Executive Director
P.O. Box 311117
Houston, Texas 77231
vic.ferguson@wfcrc.org
www.wfcrc.org
281.971.7703 (office)
281.309.1201 (cell)*