Nature Foundation St. Maarten

Project Report: St. Maarten Pelican Project

Nature Foundation

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Introduction

In an effort to protect and manage one of Country St. Maarten's Natural Treasures; the St. Maarten Nature Foundation launched a one year project in order to determine the number and health of the island's resident pelican population. The Brown Pelican (*Pelecanus occidentalis*) is one of St. Maarten's national symbols, the depiction of which can be found on the island's Flag and Coat of Arms. The pelican also lends its name to various businesses and institutions on the island yet there is very little information on its lifecycle. It was therefore decided that in order to properly conserve and manage this culturally important species there was a need to collect vital information on nesting areas, the types of animals the bird feeds on, how many pelicans we still have left, and what type of threats the bird faces. Anecdotal evidence has shown that the pelican population has severely decreased over the last few decades and that the island might be in danger of loosing its resident pelican population. The health of St. Maarten's pelicans can also reflect the general health of the marine ecosystem; with more pelicans present the better the environment.

Background Pelicans

The Brown Pelican occurs along coasts in the Americas from Washington and Virginia south to northern Peru and the mouth of the Amazon River, as well as numerous islands in the Caribbean. Their young are hatched in broods of about 1-3, and eat around 150 lbs. of fish in the 8-10 month period they are cared for. It is known that the islets off of the island's Eastern Shore; Pelican Rock, Hens and Chicks, and Molly Beday are important hatching areas for this and numerous other bird species and hopefully with the results of the study steps can be put in place to conserve them.

Methods used

The Nature Foundation applied bird monitoring methods learned during Dutch Caribbean Nature Alliance bird monitoring courses. Point counts were conducted at various locations throughout the island. Counters where stationed at the GPS locations of the pre-determined count locations and counts were conducted using two individuals for fifteen minutes. Two counters were used in order to avoid double counting of specimens. Monitoring using the Nature Foundation Marine Park patrol vessel *Yellowtail* on the offshore islets on the Eastern Coast of the island was also conducted. This was done using three individuals. One captain of the vessel and two counters counting for fifteen minutes all specimens which come into view.

Special attention was also given to the presence of breeding, post breeding, juvenile and adult plumage in order to determine the number of adults.

Also, in an effort to involve the community in the project a limited amount of citizens were asked to volunteer to assist with the research. This was done in order to make the public aware of the pelican being a national symbol and to include the public in research activities, thus giving St. Maarteners ownership of their Natural Resources and National Symbol.

Bird counts were carried out from St. Maarten's Day the 11th of November 2010 to St. Maarten's Day the 11th of November 2011. Each site was counted once every two months.

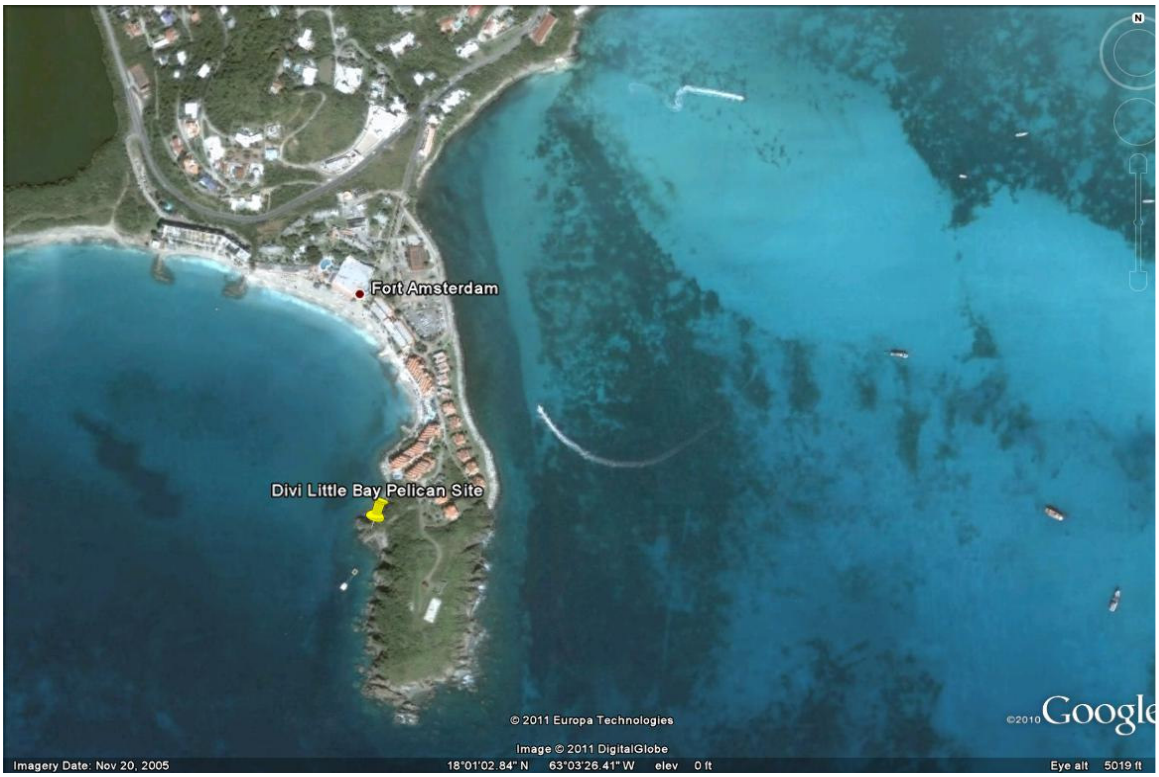
Results

Follows are the results for the Nature Foundation Pelican Counts conducted over the period of one year from November 2010 to November 2011.

Location 1 Divi/ Little Bay

A total of 64 individuals were recorded in Divi Little Bay with 56 individuals, or 28 breeding pairs being found on land and eight individuals found at sea. Given the Caribbean mean pelican density of 110 individuals per hectare this is considered medium density.

Image 1: Monitoring Site 1 Divi/ Little Bay



Land Based	Sea Based
56	8

Total #	Remarks:
64	MD

Location 2 Great Bay

A total of 82 individuals were recorded in Great Bay with 35 individuals, or 17.5 breeding pairs being found on land and eight individuals found at sea. Given the Caribbean mean pelican density of 110 individuals per hectare this is considered high density.

Image 2: Monitoring Site 2 Great Bay

Land Based	Sea Based
35	47

Total #	Remarks:
82	HD

Location 3 Molley Beday (IBA)

A total of 94 individuals were recorded on the offshore islet Molley Beday with 94 individuals, or 21 breeding pairs being found on land and 73 individuals found at sea. Given the Caribbean mean pelican density of 110 individuals per hectare this is considered high density. This is the highest recorded density on island.

It must be noted that Molley Beday is considered a breeding area for the species. Two nests were found on island containing two chicks each. Based on Molley Beday being considered an important hatchery for pelicans on St. Maarten this islets is considered and Important Birding Area (IBA) of international significance.

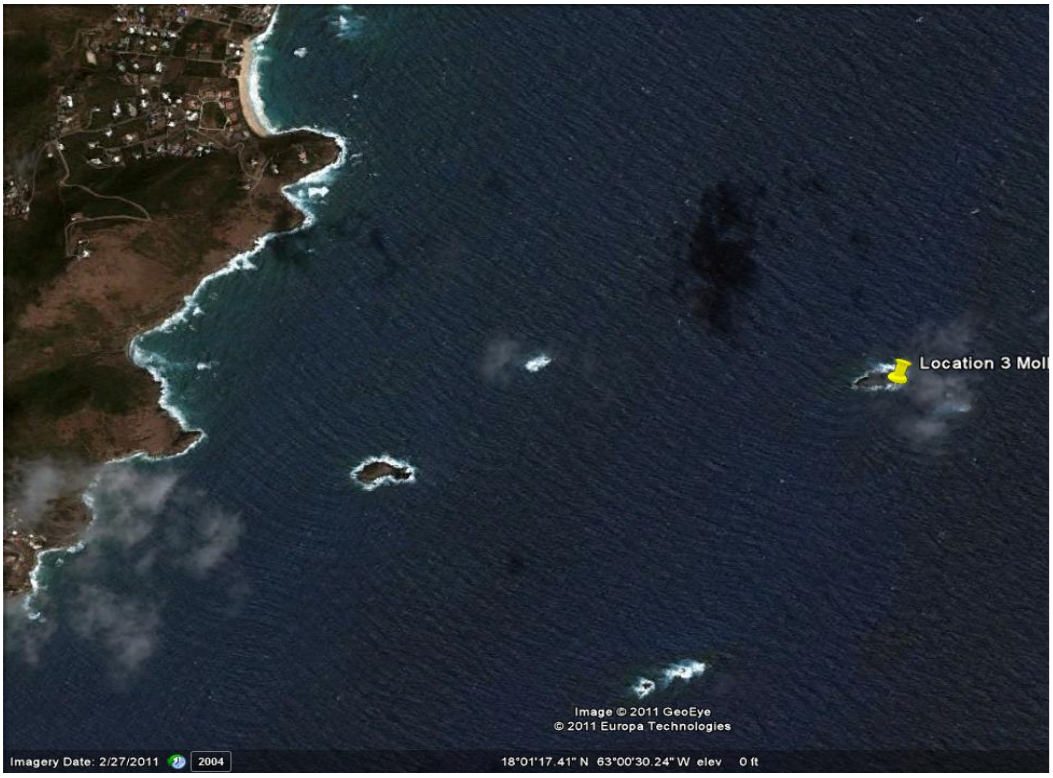


Image 3: Monitoring Site 3 Molley Beday

Land Based	Sea Based
21	73

Total #	Remarks:
94	HD/ Nesting

Location 4 Pelican/ Simpson Bay

A total of 79 individuals were recorded at Pelican/ Simpson Bay with 14 individuals, or 7 breeding pairs being found on land and 65 individuals found at sea. Given the Caribbean mean pelican density of 110 individuals per hectare this is considered high density.

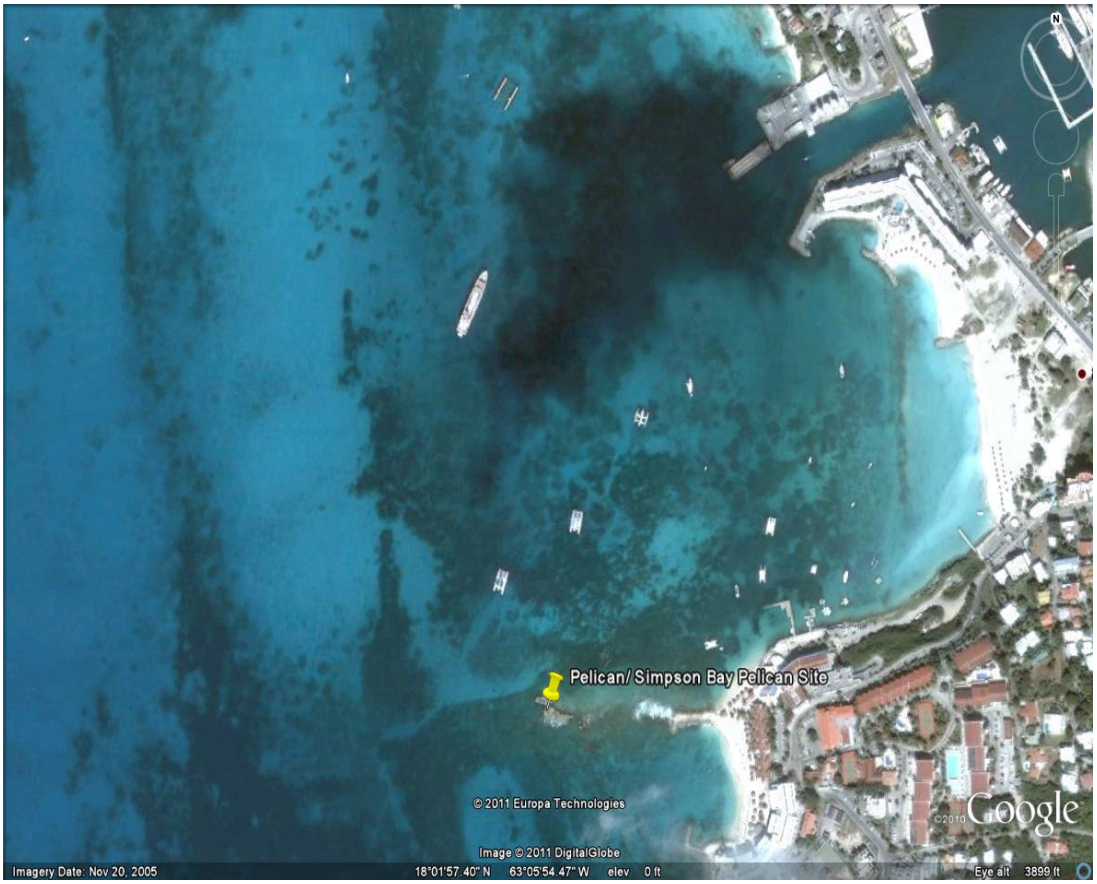


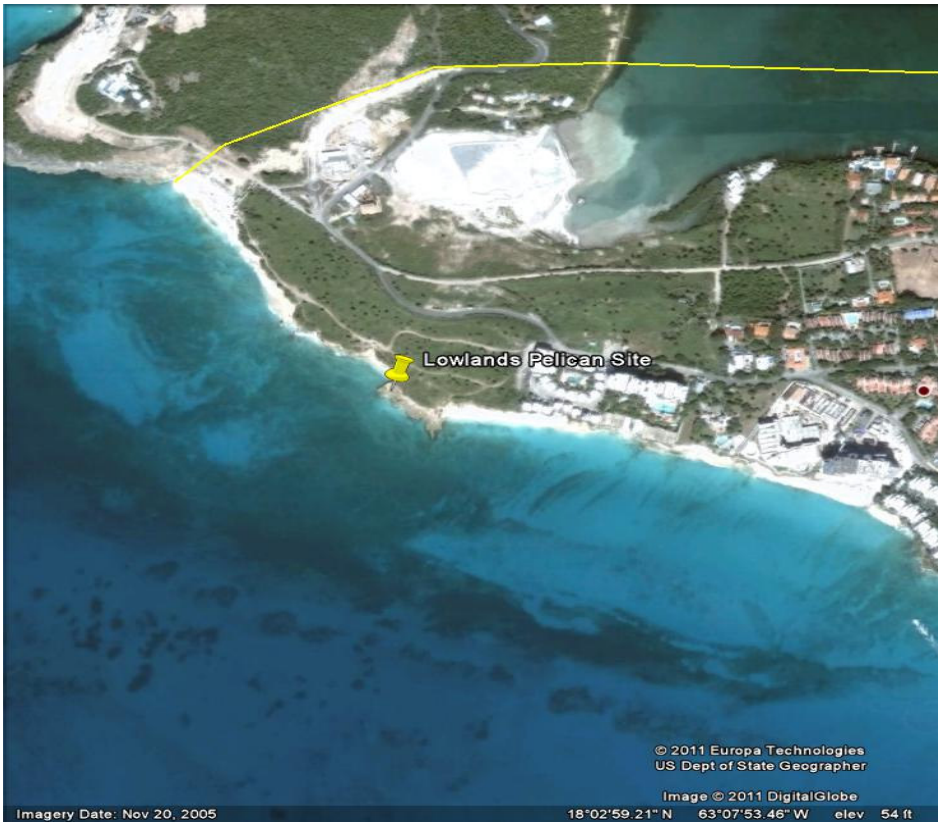
Image 4: Monitoring Site 4 Pelican/ Simpson Bay

Land Based	Sea Based
14	65

Total #	Remarks:
79	HD

Location 5 Lowlands

A total of 20 individuals were recorded at the Lowlands with 8 individuals, or 4 breeding pairs being found on land and 12 individuals found at sea. Given the Caribbean mean pelican density of 110 individuals per hectare this is considered low density. This site had the lowest density of pelicans recorded, probably due to the lack of suitable habitat found in these areas.



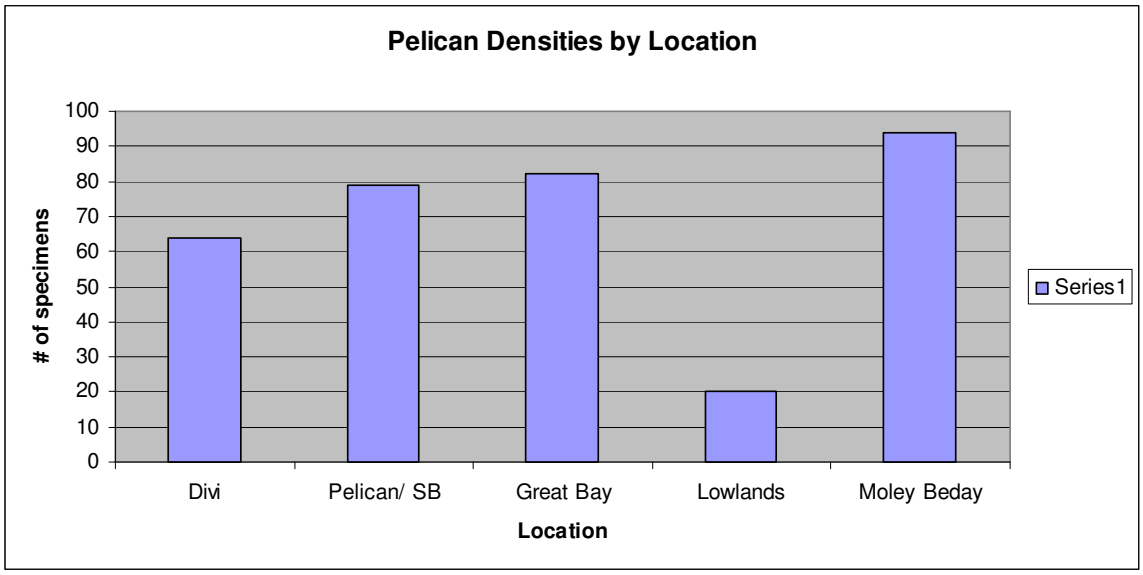
Land Based	Sea Based
8	12

Total #	Remarks:
20	LD

Based on the conducted research an overall total of 339 individuals were recorded overall on St. Maarten. With 8 chicks and 35 sub adults recorded.

Location	Total #
Divi/ Little Bay	64
Great Bay	82
Molley Beday	94
Pelican/ Simpson Bay	79
Lowlands	20
Overall Total # Recorded St. Maarten	339

The following graphic shows Pelican Densities by location at the pre-determined sites.



Breeding Populations and Juveniles

Special attention was given to individuals who showed breeding plumage. There is very little information regarding breeding season of Pelicanus occidentialis in the North Eastern Caribbean. During the breeding season adult pelicans show a peculiar plumage. Based on the research conducted by the Nature Foundation it was determined that breeding season for adult pelicans runs from approximately the beginning of June through August with the peak occurring at the end of July through the beginning of August. Chicks are fledged from the end of October through December. The offshore islets, in particular Molley Beday, are the most important breeding area for Pelicans on St. Maarten.

Picture: Adults showing breeding plumage at the Pelican/ Simpson Bay Monitoring Site.

Picture: Pelican chick at Molley Beday

A total of 35 sub-adult individuals were recorded. Sub-adult individuals can be recognized by their brown colouring and their smaller size.

Picture: Sub adult showing brown colouring

Threats

There are numerous threats faced by the resident pelican population on St. Maarten. The primary threat is related to habitat destruction. Anecdotally the resident pelican population has decreased drastically in the last four decades. This coincides with the building boom experienced on St. Maarten during the nineteen sixties and seventies. Numerous breeding locations had to make way for sea-front development.

The reduction of fish in our local waters has also resulted in a reduction in the population of pelicans. Pelicans eat sometimes their own bodyweight in fish and are known to tear their stomachs open in order to feed their chicks on their viscera. With the drop in fish stock fewer chicks are born and even fewer make it past the fledgling phase. However with fishing restrictions placed on the Man of War Shoal Marine Park it is the hope that fish stocks will regenerate thus invigorating the pelican population.

The final threat to the species is related to the entanglement in Marine Monofilament and marine debris such as plastic bags and other garbage. The Nature Foundation often responds to incidents where pelicans are caught in fishing line or hooks, fishing nets, plastic bags, or soda can holders. Steps are being taken by the Nature Foundation to introduce a line recycling program in order to collect fishing material.

Conclusion

The Brown Pelican (*Pelecanus occidentalis*) is one of St. Maarten's national symbols, the depiction of which can be found on the island's Flag and Coat of Arms. The pelican also lends its name to various businesses and institutions on the island yet there was very little information on its lifecycle. It was therefore decided that in order to properly conserve and manage this culturally important species there was a need to collect vital information on nesting areas, the types of animals the bird feeds on, how many pelicans we still have left, and what type of threats the bird faces. Anecdotal evidence has shown that the pelican population has severely decreased over the last few decades and that the island might be in danger of loosing its resident pelican population. The health of St. Maarten's pelicans can also reflect the general health of the marine ecosystem; with more pelicans present the better the environment.

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Appendix 1: Pelican Datasheet

Method: Remain still for fifteen minutes while counting all pelicans that come into view.

Location 1 Divi/ Little Bay

Land Based	Sea Based

Total #	Remarks:

Location 4 Pelican/ Simpson Bay

Land Based	Sea Based

Total #	Remarks:

Location 2 Philipsburg

Land Based	Sea Based

Total #	Remarks:

Location 5 Lowlands

Land Based	Sea Based

Total #	Remarks:

Location 3 Islets Eastern Shore

Land Based	Sea Based

Total #	Remarks:

Location 6: Other

Land Based	Sea Based

Total #	Remarks: