Site Maintenance and Environmental Monitoring at

Sandy Cay
British Virgin Islands

July 2009 — June 2012

Prepared By:

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Cover Photo:

Early morning on Sandy Cay,
June 9, 2012

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I. INTRODUCTION

This is the second report by Island Resources Foundation since the transfer of Sandy Cay from the Estate of Laurance S. Rockefeller to the BVI National Parks Trust in May, 2008. It contains a summary of primary activities and observations during the time period from July 2009 to June 2012, and encompasses all site visits related to caretaking, site maintenance, and monitoring, including training and general project oversight of the island.

During the three year period, the island was visited by members of four different organizations: *Jost Van Dykes Preservation Society* (David Blyden, Susan Zaluski); *Resortscapes Inc.* (Chris Thomas); *National Parks Trust* (Ronald Massicott, Nancy Woodfield-Pascoe, Keith Grant and Marcus Maturine); and *Island Resources Foundation* (Jean-Pierre Bacle).

II. TRAIL MAINTENANCE ACTIVITIES AND OBSERVATIONS

From July 2009 to June 2012, Sandy Cay was visited on at least 50 occasions for maintenance and monitoring. Additional visits to the island took place for the installation of moorings, raising the sign board of rules and regulations related to visitation, and construction of the monument denoting the Rockefeller donation in 2008.

A. Trail Re-alignment

On January 19, 2010, a field team comprised of R. Massicott, K. Grant, and M. Maturine (NPT), C. Thomas (Resortscapes, Inc.), D. Blyden (JVD Preservation Society), and J.P. Bacle (IRF) took part in a trail re-alignment project along the south coastline of Sandy Cay. Other activities included the application of fertiliser on coconut trees, a full count of coconut trees on the island, and general trail pruning and cleaning.

The trail re-alignment was a necessary task that was recommended during previous visits to the island (see Bacle, 2009). It is important to note that a good portion of the original trail along the south of the island was established very near the edge of the tree line for the purpose of maximum viewing. Unfortunately, ongoing shoreline dynamics over the years, coupled with foot traffic to and from the beach, have contributed to the loss of beach vegetation. As a result, erosion is slowly encroaching on a portion of the trail. A similar situation had occurred earlier, just to the east. Remedial measures taken at that time (in 2005) required

that a 30-metre trail section be re-routed inland. The more recent intervention was similar in approach and was successfully executed on January 19, 2010 (***Figure 1***).

The field team flagged and cleared a new trail section and closed off the old trail section that exhibited natural beach erosion and foot traffic erosion (***Photo 1***). The new trail is about 5 to 10 metres inland from the shoreline and follows the landside of the beach berm along the edge of the mangrove wetland (***Figure 1***). The few trees that had to be removed were from the most common species on the island, the locally named Marble tree (*Cassine xylocarpa*). The clearing exercise also involved significant pruning along the new trail corridor. Cuttings were subsequently used to block both ends of the old trail section. Removed ground vegetation mostly consisted of spider lilies and a few small cacti. A total of 46 spider lilies were uprooted and transplanted on the abandoned trail section to accelerate the restoration process.

Photo 1.
Documentation of severe trail erosion along the southern shoreline. Photo taken on January 19, 2010.

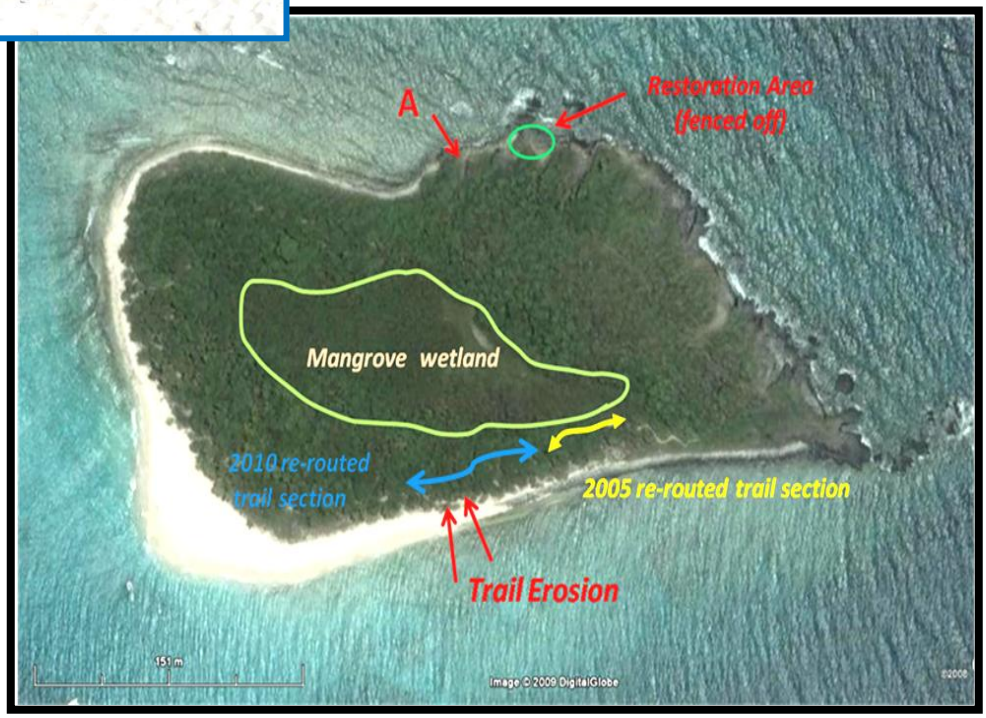

Figure 1.
Aerial imagery showing re-routed trail location in 2005 in yellow and in 2010 in blue. Both sections are connected and located inland of the vegetated beach berm. Imagery is from Google Earth (2009).

B. Coconut Fertilising and Tree Count

During the trail re-alignment, team members fertilised all mature coconut palms with manganese spikes. Four 3-inch spikes were inserted 6 to 8 inches in the ground about 2 to 3 feet from the bowl of each tree. The group also undertook a coconut tree survey which resulted in a count of 88 mature coconuts and 45 seedlings. The last count in February 2006 yielded 89 mature trees and a handful of seedlings. Obviously, there has been a noticeable increase in coconuts seedlings since mid-decade. Most have propagated directly from seeds of nearby mature palms, but a great number of seedlings near the shoreline also indicate that they have drifted ashore via currents and heavy seas (***Photo 2***). The increase in the coconut palm population is encouraging as it will enhance the aesthetic aspect of the island as well as create more shade.

Photo 2.
Many coconut seedlings and young coconut trees are found behind the cobble beach that faces the wind- and wave-exposed north shoreline. They are the likely result of coconut fruits that drifted ashore from other islands.

III. POST-RAT-ERADICATION MONITORING

Monitoring trips from July 2009 to the present found no sign of rat activity. During these 20-plus trips, no evidence of rat droppings was observed in and around the bait stations; additionally, no rat trails were present, as well as no signs of gnawing on branches, twigs, or fruits. Furthermore, the apparent increase of wildlife activity, particularly as it relates to seabird and tree bird nesting, is a further positive sign that the island is predator-free (see also Wildlife Section below).

The number of rat monitoring stations is currently 16. Some of these were relocated due to trail re-alignment. During the last site visit in June 2012, IRF reported that a number of stations were old and dilapidated and will need to be replaced in the near future. A detailed assessment of each station will be carried out during the caretaker's next visit to the island. It is estimated that these stations generally need to be replaced every 4-5 years depending on their location. Sun, wind and salt exposure over time are the main cause of deterioration.

Hermit crabs continue to be an issue especially at the older monitoring stations where design configuration allows easier access to the bait (***Photo 3***). These stations will be the first to be replaced. The team is still pursuing ways to minimise access of these invertebrates.

Photo 3.
Hermit crabs invading an "older model" station the day after bait blocks were placed. These stations will be replaced.

IV. WILDLIFE

A. Avifauna

Bird observations were made on five occasions during the 3-year period and covered different seasons. The most active period was on June 9, 2012 with at least 6 different species nesting. Nesting activity along the cliffs included the Tropicbird and Laughing Gull. Along the lowland trail corridor and inland, nesting species included the Scaly-naped Pigeon, Zenaida Dove, Yellow Warbler, and Bananaquit (see ***Table 1***). Tree nesting bird activity was so plentiful that some species (in particular the Zenaida Dove) were recorded nesting at ground level, a further indication that the island is rat-free (see ***Photo 4***).

Being uninhabited and rat-free, Sandy Cay provides enhanced nesting opportunity for migratory as well as resident species. For example, in the last few years, IRF has noticed an increase in the population of Zenaida Doves and Scaly-naped Pigeons, which were specifically using the island for nesting purposes despite the fact that Sandy Cay may lack foraging resources during certain times of the year. During the nesting period, IRF observed that Zenaida and Scaly-naped birds frequently commuted back and forth to the nearby islands of JVD and Tortola where foraging opportunities are better.

Photo 4.
At least half a dozen ground-nesting Zenaida Doves were observed under thick grass or shrub cover.

Table 1. Bird observations at Sandy Cay.

Species	19 January 2010	20 January 2010	12 October 2010	16 April 2011	9 June 2012
Tropicbird	1	1		2	3*
Magnificent Frigatebird				1	1
Brown Pelican	1	5	2	2	4
Brown Booby	1	2	1	1	1
Laughing Gull				3	30*
Least Tern					2
White-cheeked Pintail	1*		2	1**	
Scaly-naped Pigeon	3	1	1	9	44*
Common Ground Dove	4		4		
Zenaida Dove	14*	17*	1	18	25*
Mangrove cuckoo			1		
Green-throated Carib	1	1	1	6	5
Antillean Crested	2	3			
Gray Kingbird	1	3		7	4
Yellow Warbler	11*	15*		15	19*
Bananaquit	16*	13*	6	23	11*
* ***nesting activity***					
** plus ***16 chicks***					

B. Sea Turtles

Although sea turtles were not physically seen by team members during the reporting period, many nest pits were noted, particularly along upper reaches of the south and west beaches. On January 22, 2011, the JVD Preservation Society received a report that a charter vessel from St. John (USVI) sighted leatherback turtle hatchlings on Sandy Cay (they estimated 30 hatchlings).

C. Termites

Termite control measures along the trail corridor were applied on a few of occasions during this monitoring period. Overall, the number of termite nests throughout the island looked normal and generally reflected the availability of dead wood. Undoubtedly, the population will tend to proliferate after tropical storms and hurricanes, which generate an abundance of dead wood.

V. VISITATION

A. Visitors to the Island

Sandy Cay remains a popular destination for recreational users as indicated by the data presented on ***Table 2***. Although the tourist season commences in November, peak visitation activity was usually rec-

orded during February and March. The presence of seasonal winter seas, strongest in late December and January, is the main factor limiting access to the island.

It is important to note that visitation figures are a snapshot taken at peak hours by the caretaker and/or the IRF environmental monitor while working on the island. These figures therefore do not reflect total daily visitation numbers. It records the maximum number of boats anchored or using moorings, and people utilising the beach, at a given time, *i.e.*, during the 11 am to 2 pm peak hours. For enumeration of hikers along the trail, numbers are recorded for persons encountered by the caretaker and/or IRF environmental monitor while engaged in work along the trail.

There continues to be frequent Interaction between visitors and caretaker David Blyden, especially while he works along the trail corridor. Most common visitor remarks as recorded by the caretaker focus on:

(i) Complimentary remarks regarding the scenic quality of the trail and how well it is maintained.

(ii) Lack of awareness by visitors that a trail existed.

(iii) Lack of pre-visit information that prompts visitors to come ashore with appropriate footwear to hike the rocky upland portion of the trail.

It would be useful for the NPT to work with the charter boat industry to ensure that their boating clients are fully informed of the trail information reported in the last two comments above, thereby helping to maximise the visitor's experience.

B. Mooring Buoys

To date, a total of 8 mooring buoys have been installed along the southwest of the island, within the primary mooring area as proposed in the *Sandy Cay Management Habitat Area Management Plan* (2007). The installation of mooring buoys began during the first quarter of 2011 and continued during that year. Additional moorings may have to be considered if visitation continues to increase.

The *Sandy Cay Caretaker Report Form* will be updated to include mooring data in the next quarterly report to NPT (for quarter ending September 30, 2012).

Table 2. Visitation at Sandy Cay (July 2009 – June 2012).

Date	Anchored Boats	Moored Boats	Dinghies on Beach	People on Beach	People on Trail
July 7, 2009	10		2	28	17
July 28, 2009	4		3	24	11
August 24, 2009	4		3	6	4
September 15, 2009	2		1	7	2
September 25, 2009	13		5	35	23
October 5, 2009	8		2	16	9
October 21, 2009	6		1	9	2
November 14, 2009	7		1	20	5
December 5, 2009	5		1	17	8
January 19, 2010	11		4	13	11

Date	Anchored Boats	Moored Boats	Dinghies on Beach	People on Beach	People on Trail
January 23, 2010	10		1	21	1
February 25, 2010	18		13	61	6
March 15, 2010	28		6	64	2
March 25, 2010	14		9	44	6
May 1, 2010	13		2	33	0
June 5, 2010	6		2	32	25
June 8, 2010	14		6	59	9
June 29, 2010	3		2	12	4
July 24, 2010	7		3	24	6
August 21, 2010	14		6	40	3
September 14, 2010	4		2	2	4
September 29, 2010	3		0	16	4
October 12, 2010	4		3	14	4
December 4, 2010	8		3	28	14
December 11, 2010	9		3	38	7
December 20, 2010	6		2	24	21
March 3, 2011	13		9	40	20
March 9, 2011	13		3	26	10
March 19, 2011	15		4	57	17
March 31, 2011	6		1	12	21
April 16, 2011	9	3	4	22	17
May 28, 2011	14	*	4	34	4
June 11, 2011	12	*	4	41	8
June 29, 2011	6	*	2	29	2
August 9, 2011	25	*	3	19	6
August 10, 2011	3	*	0	37	15
September 3, 2011	5	*	0	45	0
September 23, 2011	1	*	0	0	0
September 24, 2011	1	*	0	3	0
October 18, 2011	8	*	2	20	4
November 19, 2011	4	*	1	13	7
December 19, 2011	4	*	1	22	16
January 14, 2012	7	*	2	50	7
February 4, 2012	8	*	6	47	17
February 10, 2012	2	6	3	8	13
April 2, 2012	1	11	8	78	13
April 28, 2012	11	5	4	28	17
May 26, 2012	6	8	3	43	30
June 9, 2012	1	6	2	42	15
June 30, 2012	10	10	6	63	9

* Mooring data included with anchored boat data.

VI. OTHER OBSERVATIONS

A. Signage

Installation of the rules and regulation sign was completed during the last quarter of 2011. The location of the sign is appropriately located along the southwest side of the island, slightly within the tree line and near the trail head (***Photo 5***). This is the section of the beach where most visitors land by dinghies or swim ashore from their anchored/moored boats.

B. Dedication Monument

Construction of the monument was completed during the last quarter of 2011 by a local resident of Jost Van Dyke who goes by the name of Alan "Uncle Boy" Callwood. The location of the monument is approximately 10 metres inland from where the trail loop begins. During the June 9, 2012 visit, the monitoring team noted that although the monument is mostly finished, it requires some finishing-up touches, in particular, the stone work along the sides (***Photo 6***).

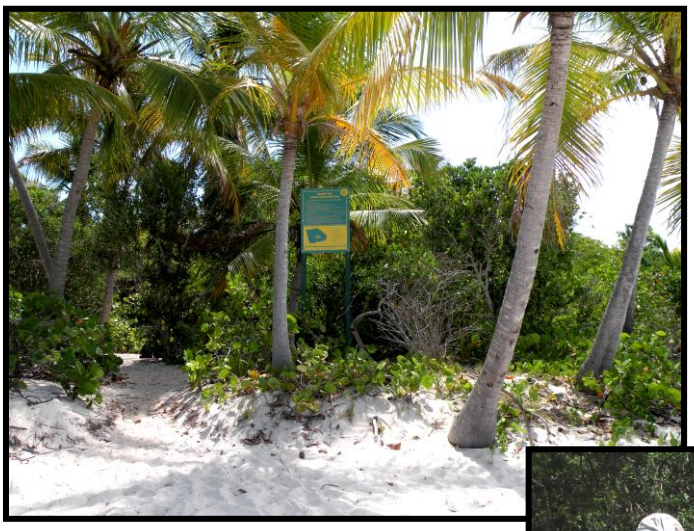

Photo 5.
Signage providing visitation rules and illustrating Sandy Cay's management areas.
Trail head is to the left.

Photo 6.
Dave Blyden (Sandy Cay's caretaker) stands at the nearly completed monument constructed with local stone from Jost Van Dyke.
Many visitors habitually collect items from the island and place these on the monument's surface, as can be observed in the photo.

C. Vegetation Restoration Area

Fencing that prevents access to the restoration area along the northeast rocky cliff continues to be maintained on a periodic basis. However, another clearing further to the west along the same ridge (see letter A in red on ***Figure 1***) was noted. This narrow clearing can likely be attributed to the funneling of intense winds during a recent storm which subsequently caused a die-off of coastal shrubs. The team will monitor conditions during future visits.

D. Beach Camp Fires

On a few occasions in 2009 - 2011, the caretaker has reported evidence of beach fires. Photos were taken, some showing the use of charcoals and even cutting of coconut stumps for fire wood (***Photo 7***). Hopefully the rules from the signage will deter this activity.

E. Invasive Species Workshop

In 2011, as part of an Invasive Species Workshop sponsored by the UK's Food and Environmental Research Agency, a visit to Sandy Cay showcased the island's rat eradication and control programme (funded by Laurance Rockefeller in 2002). Conservation specialists from nine Caribbean Islands participated in the workshop (***Photo 8***).

Photo 7.
Charred stump of coconut tree, evidence of beach "camp" fire.

Photo 8.
Workshop participants and Dave Blyden (yellow cap) discuss the rat monitoring programme on Sandy Cay.

REFERENCES

Bacle, J.P. 2009. *Sandy Cay Field Trips: Annual Report June 2008 – June 2009*. Island Resources Foundation.

Bacle, J.P. and J. Towle, 2008. *Four Decades of Site Maintenance and Environmental Monitoring at Sandy Cay, British Virgin Islands, 1968-2008*. Prepared by Island Resources Foundation for the Estate of Laurance S. Rockefeller. Tortola, BVI and Washington DC.

BVI National Parks Trust. March 2007. *Sandy Cay Habitat Management Area: Management Plan*.

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