CASE STUDY

MT HARTMAN DEVELOPMENT AND THE GRENADA DOVE: *FINDING A WIN-WIN SOLUTION*

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Introduction: The Proposed Development at Mt Hartman

This report describes the controversy that developed in 2006 when a major resort was proposed to be built in the most important habitat of the critically endangered, endemic Grenada Dove (*Leptotila wellsi*) International conservation organizations and scientists became involved in the situation and ultimately became involved in direct communications with the developer. The report chronicles the process and experience by the various parties, identifies how consensus was achieved on certain issues, lessons learned from this process and issues that remain unresolved. Information in this document is based on what was known at the time, and does not include information gathered or made available since. Planning for the proposed resort was apparently halted in 2008 when the global economic crisis occurred. Regardless of any further development in the area it may be useful to look at this situation as a case study that has relevance for future conservation and development controversies. The author is the lead scientist who was intimately involved in all aspects of the situation and in direct contact with all individuals and institutions mentioned in the report.

A Four Seasons Resort (Toronto, Canada), developed by Cinnamon 88 (a subsidiary of Capital 88), was planned for the Mt. Hartman Estate in Grenada. The proposed development, which came to public attention in 2006, was to comprise private villas and residences, a hotel, a championship class golf course, a marina, and other resort amenities on the Mt. Hartman Estate. Hog Island, an 85-acre offshore island was to house a hotel and villas (Appendix 1). The areas in and around the Mt. Hartman Estate support the largest remaining population of Grenada Doves, with the bulk of the population (less than 100 birds) occurring on lands that constitute Mt. Hartman National Park. The development was proposed to occupy lands within and adjacent to dove habitat both within and outside the Mt Hartman National Park. The Mt. Hartman National Park, also referred to as the Dove Sanctuary, is within the 430-acre Mt. Hartman Estate, owned by the government of Grenada. A recent amendment to the National Parks Act, allowed this and other National Parks to be sold, with the approval of the National Park Advisory Council.

This conflict centered around the loss of critical habitat for the Grenada Dove, the National Bird of Grenada, and government's ability to sell national park land. Negotiations involving the government, the developers, conservation organizations and scientists focused on finding a solution that would meet the development goals of Cinnamon 88 and the Government of Grenada while eliminating, to the extent possible, the threat of these plans on the Grenada Dove and its core habitat at the estate, while also improving the national park boundaries to better suit the species. It was understood early in negotiations that areas that remained as national park would not be transferred to private ownership, rather they would be transferred from Government to a Public Trust (yet to be established), whose purpose would be, according to Cinnamon 88 "to ensure the national parks protection in perpetuity". Negotiations centered around scientific advice on the dove and the identification of critical habitat (defined primarily by the study

on current distribution and abundance of doves), and potential habitat (areas adjacent to critical habitat that either are or could be converted to dove habitat).

Though other issues, including land ownership, land use, marine degradation and marine protected areas emerged later during consultations, this consensus-building endeavour focused on the primary environmental threat identified in 2006 - the risk to the critically endangered Grenada Dove. Conflict ensued regarding ownership of Hog Island (see Appendix 12), proposed beach creation and resultant mangrove loss in the Woburn/Clark's Court Bay Marine Protected Area, and the loss of livelihoods on Mt Hartman and Hog Island (i.e. Roger's Bar, horses)[1]. These issues were not part of the initial negotiations between government, the developers and the scientists, and are mentioned here due to their important nature and need for subsequent discussion, but are not addressed in depth in this case study.

Deliberations in 2007 over the future of the Mt. Hartman Estate held both potential risks and opportunities for the critically endangered Grenada Dove. To date, conservation measures for the dove have managed to keep the small population from declining toward extinction, but they have not resulted in a recovery toward a non-endangered status because there is insufficient available habitat to accommodate the birds' population growth. Since Grenada Dove conservation efforts began in 1987, there has been no significant increase in the available habitat for doves, even on the National Park. By most assessments, the current population, though protected, is too small to be viable in the long run, and recovery to a secure status will depend on increasing the population's size by expanding its available habitat. The central importance of the core dove population on and near the Mt. Hartman Estate cannot be over-emphasized. If a recovery is ever to occur it will almost certainly be through the expansion of this population to other areas of existing or restored habitat in southwest Grenada as well as on the west coast. The loss of a significant portion of the Mt. Hartman Estate to development would severely limit the potential for habitat expansion in the very locations most accessible to doves and therefore jeopardize the dove's recovery. But, the changes at Mt. Hartman had the opportunity to a positive turning point in conservation efforts if mitigation for the losses at Mt. Hartman triggers a concerted effort to confront the long-term habitat needs of the dove. The negotiations worked to carefully minimize the impacts of the development on existing habitat at Mt. Hartman and attempted to maximize the potential benefits of mitigation through habitat restoration elsewhere, so the dove could actually benefit in the long term. A continuation of the status quo, maintaining a perilously small population in an isolated area of habitat, has little chance of success. This controversy was a turning point in the dove story, which could have either become a textbook example of how conservation and development worked together to achieve compatible goals or a tragic story about how development overran yet another endangered species' critical habitat and caused its extinction.

[1] http://www.tourismconcern.org.uk/uploads/file/In%20Focus/Tourism%20In%20Focus_Winter%202008-9.pdf

Objectives for conservation were to;

1. Ensure protection of Grenada Dove at Mt Hartman by;
    - Minimizing (and eliminating where possible) impacts to dove habitat by development, and working with the developer to change the proposed master plan to meet this goal,
    - Protecting habitat that held the most dove territories,
    - Recommended mitigation measures be incorporated into the proposed master plan,
    - Protect habitat that includes areas for dove population expansion.
2. Find consensus among government, developers and conservation scientists and work together to achieve compatible goals,
3. Ensure that the Government protects dove habitat elsewhere on the island (west coast),
4. Ensure that Cinnamon 88 maintains their commitment to financially support the Mt Hartman National Park and Grenada Dove Trust for overall dove conservation activities,

These objectives for conservation were not formally developed prior to the initiation of negotiations, though were developed as discussion between Rusk, scientists, and Forestry and National Parks progressed.

Background: Mt Hartman and the Grenada Dove

Grenada Dove (adapted from Rusk 2007)

The Grenada Dove (*Leptotila wellsi*) is endemic to the island of Grenada. It is considered critically endangered on the IUCN Red List of endangered species (BirdLife International 2009). Since its abundance and distribution were first documented in 1987 (Blockstein 1988), the species has been limited to two isolated patches of secondary seasonal dry forest in southwestern Grenada, on and surrounding the Mt Hartman Estate and on the west coast on and around the Perseverance Estate (including portions of the Perseverance, Woodford, Beausejour and Grenville Vale Estates). Over 47% of all Grenada Doves recorded in a 2007 census were on or immediately adjacent to the Mt. Hartman Estate. The central importance of the core dove population on and near the Mt. Hartman Estate can not be overstated.

The greatest threat to this species is the loss of existing habitat and the lack of availability of suitable habitat outside of areas currently occupied by the birds. Biologists who have studied the Grenada Dove agree that its status and distribution are closely tied to availability of suitable habitat (Rusk *et al*. 1998). These habitats are predominantly secondary deciduous thorn-scrub woodland with emergent trees and leguminous vegetation. All of the habitats currently used by doves are secondary woodlands that have re-grown on areas used for agriculture in the past. These habitats seem to develop in response to a particular sequence of past land-use.

Rusk's 2007 census data (Rusk 2008) revealed 48 confirmed territorial male Grenada Doves in the southwest, 29 of which were on the Mt Hartman Estate and 16 in the southwest near Mt. Hartman, and an additional 20 on the west coast, for a total population estimate of 68 confirmed territorial males. Assuming a 1:1 sex ratio, this suggests a total world population of 136 Grenada Doves. Those total population estimates indicate a 50% decline on west coast and a 25% decline in the southwest from the 2003/2004 census, which occurred prior to Hurricane Ivan's strike on Grenada.

Other Flora and Fauna of Significance

Mt. Hartman is also habitat to several other important bird species on Grenada. Five (5) of the 11 "restricted range species" (A2) listed for Grenada on the Lesser Antillean Endemic Bird Area (EBA) (BirdLife International) are found at this site. These include the Grenada Dove *Leptotila wellsi,* Antillean Crested Hummingbird *Orthohyncus cristatus,* Lesser Antillean Tanager *Tangara cucullata,* Lesser Antillean Bullfinch *Loxigilla nocti*, Grenada Flycatcher *Myiarchus nugator.*

The Grenada Hook-billed Kite (*Chondroheirax uncinatus mirus*) is an endangered subspecies endemic to Grenada. Although its distribution is not limited to the dry scrub forest of southwestern Grenada, nests have been located in these forests, which thus plays an important role for the small population sof this subspecies. Three reptiles endemic to Grenada have beenfound at Mt. Hartman: the Grenada Tree Boa (Co*rallus grenadensis)* and 2 species of anolis lizards, *(Anolis aeneus and A. richardii).*

The Mt. Hartman Estate

The Mt. Hartman Estate is an abandoned sugarcane plantation that has grown into deciduous thorn scrub woodlands composed of both native and exotic species. The vegetation is typically characterized by a canopy of 5-10 m in height with emergent trees, primarily *Bursera simaruba,* on the steeper slopes, with a shrub later and large areas of open ground. Common canopy species found include: *Haematoxylon campechianum* (native)*, Exostema caribaea, Forrestieria rhamnifolia. Leucaena leucocphala, Pisonia fragrans* (native)*, Acacia macrantha, Pithcellobium unguis cati* (native)*, Genipa Americana, Citharexylum fruticosum* (native)*,* mid-level vegetation of *Chomelia fasciculate, Bourreria succulenta and Randia acueata,* with shrubs in open areas including *Cordia curassavica* and *Croton flavens* (Rivera-Lugo 2005)*.* The effects of hurricane Ivan (2004) severely affected the structure of the vegetation, with likely additional changes to species composition over time. Shoreline plants include mangrove species in Mt. Hartman Bay and a mix of thin strands of mangroves, manchineel (*Hippomane mancinella*), and seaside mahoe (*Thespesia populnea*) on the eastern shore of the peninsula. Black Willow (*Capparis cynophallophora*) is seen at the shoreline as well as on the slopes of the Mt. Hartman Peninsula. Contiguous mangroves in Mt. Hartman Bay have no protection as part of the National Park.However, mangroves along Woburn Bay are part of the Woburn/Clarks Court Bay Marine Protected Area (Appendix 2), established under the 2001 Fisheries (Marine Protected Areas) Regulation. Two ephemeral ponds exist on the edge of the

mangroves along the Mt. Hartman Bay and are key sites for migratory shorebirds and seabirds. The highest elevation at Mt. Hartman is 125 m. Mt. Hartman lies in the 1000 mm to 1500 mm rainfall belt, with temperature ranging from 25 degrees C to 27.5 degrees C. There are usually 5-6 relatively dry months per year. Two historic ruins, one believed to be an industrial site, the other said to be a plantation great house, exist on the Mt. Hartman Peninsula.

Cattle and horse grazing is still found in the lowlands between the ridges of the National Park as well as within the park boundaries. The quarry that operated across the valley to the west of the site is as of 2009 no longer in operation and the land has been purchased for development by Cinammon88. Mangroves border both Mt. Hartman Bay and Woburn Bay and are used for fishing. A housing development borders the site to the north and a marina to the west (Woburn Bay).

The Mt Hartman Estate was a government-owned estate until the lands for development were sold to Cinnamon 88. Estate lands reportedly had been acquired from private owners by the Government and later rented to small farmers in the 1980s. Farmers were told to vacate the lands to accommodate a prior proposed development in the lowlands (1999) Prior to that farmers grew sugar cane, watermelons, cantaloupe, squash, cucumber, sweet potato, pumpkin, okra and sorrel, on plots averaging 2-3 acres. The exception to individual farm lots was a larger holding by the Wharf Agricultural Production Company (WAPC). No farms currently exist on the Mt. Hartman Estate. A response from then Prime Minister Keith Mitchell's Office to BirdLife International[2] in November 2006, stated "there has been for many years the intention to use the location for a top-end resort, which we see as vital for the further development of our country and its small population". The letter stated that the government had not taken a final decision on the resort and will not do so until they are presented with a convincing concept for the preservation of the doves.

Mt. Hartman National Park

Mt. Hartman National Park, also referred to as the Dove Sanctuary, a portion of the Mt. Hartman Estate, was originally gazetted (1996) as 3 discrete parcels, each containing an east-west ridge ranging from sea level to a maximum height of 125 m, totaling 154.18 acres (Appendix 3). The peninsula is bordered by Woburn Bay to the east and Mt. Hartman Bay to the west. A marina on Woburn Bay borders the northeast portion of the site. The northern border extends along the ridge above the Mt. Hartman housing project, and ends along the ridge of the north-facing slopes that descends to the Grand Anse road and residential area. The west is bordered by a valley, now a woodland after the cessation of cane farming approximately 10 years prior, some areas now inhabited by Grenada Doves. Just beyond the valley is the eastern side of the Lance Aux Epines residential peninsula, which contains small remnant patches of

[2] (http://www.grenadadovecampaign.com/Grenada-Prime-Minister.html)

thorn woodland vegetation.

This site is designated as an Important Bird Area (IBA) by BirdLife International due to its importance as critical habitat for the Grenada Dove, listed internationally as an A1 Critically Endangered Globally.

Responsibility for the national park was vested in the Forestry and National Parks Department by Government Gazette, June 21, 1996. The 1996 gazette referred to the "wooded hillsides of the Mt Hartman Estate" and thus at the time of survey, only the then-remaining wooded hillsides were included in the park, resulting in 3 discrete parcels. Though this park configuration did not meet many principles of park design nor present the best scenario for the conservation of the Grenada Dove (Rusk, pers obs), the park was established per the government's decree.

The 2006 proposed development and controversy

In November 2006, a Four Seasons Resort (Toronto, Canada), developed by Cinnamon 88 (Grenada), was planned for the Mt. Hartman Estate and became known through an environmental assessment report (JECO 2006[3]). The development was (2006) to comprise an 18-hole championship golf course, a hotel, 107 hotel units, 255 villas/private residences, a marina, and other facilities on Hog Island. This included development within national park protected lands, allowed by a recent (2006) amendment permitting government to sell national parks. A letter from the American Bird Conservancy (5 January 2007), stated that " Mt Hartman is recognized by the Alliance for Zero Extinction, an alliance of the world's conservation NGO's including American Bird Conservancy, BirdLife International, The Nature Conservancy and World Wildlife Fund as one of the most important sites in the world for the prevention of imminent species extinctions. The site is further recognized as an important Bird Area by BirdLife International, and the Grenada Dove is Grenada's national bird. The footprint… will encroach upon and destroy, degrade and further fragment the core remaining Grenada Dove habitat, particularly within the existing National Park." The threat to the Grenada dove by the development plans became the source of the public criticism, both nationally and internationally. The environmental assessment report was widely criticized due to its failure to adequately address the impacts on biodiversity, development threats, the conservation importance of Mt Hartman, alternative options, conservation implementation, and other measures to minimize overall environmental impacts (BirdLife letter 2006). In January 2007, photos became available showing a large portion of Hog Island having been clear-cut by Cinnamon 88 also causing concern for the adjacent reefs.

The JECO environmental assessment was the first documentation of the development to become public and reveal the proposed development plan. Local and international press focused on the likely extinction of the Grenada Dove and National Park's Amendment which allowed National Park's to be sold by decree

[3] http://www.grenadadovecampaign.com/Images/MYSTERIOUS-ENVIRONMENTAL-ASSESSMENT.pdf

of Governor General. The ensuing national and international outcry focused on the proposed development's activities and the government of Grenada's amendment permitting the sale of national park land. As a result of the public outcry, the development was put on hold and a solution was sought.

The Negotiations

It should be noted here that there was no formal negotiation process that took place. Rather, it was a process by which parties with differing interests and varying goals came together to find a solution. The process by which these "negotiations" took place was worked out by the parties involved.

Summary of the overall steps taken in negotiation:

1. The Prime Minister's office, Government of Government, assigned Jennifer Ellard, a Special Advisor the Prime Minister, to help find a solution. She brought parties together: Cinammon88, Bonnie Rusk, Forestry and National Parks, and with this government support, discussions on finding a solution began to take place.

2. During a World Bank Mission, meetings were coordinated by the Prime Minister's Office that included individuals from World Bank, GEF (Global Environment Facility), Cinnamon 88, the National Geographic Center for Sustainable Destinations (Director Mr. Jonathan Tourtellot who worked with BirdLife International and other interested agencies), and Grenada's Forestry Department. During this mission, with the recommendation of the Forestry and National Parks Department, it was agreed to commission Bonnie Rusk, the leading Grenada Dove expert, to provide the developers and government with the scientific data with which to help find a solution to the problem of the development and the Grenada dove. Rusk has been studying the Grenada Dove since 1990 in collaboration with Forestry and National Parks, BirdLife International, Stanley Temple -University of Wisconsin-Madison, Dr. David Blockstein – Ornithological Council, and others.

   Cinnamon 88, as agreed during the above-mentioned mission and at the urging of the scientific community (BirdLife, American Bird Conservancy, RARE Center for Tropical Conservation, international scientific institutions and other NGOs), hired Rusk as a consultant to provide scientific input regarding the Grenada Dove to advise them on how to best address the conservation concerns expressed in the various communications. She was contracted by Cinnamon 88 to assess the doves' status at this location (3 years post-Hurricane Ivan) and to provide scientific information and recommendations to inform decisions for the planning and development of proposed resort and golf course.

3. Rusk carried out the research between August and October 2007 and met at minimum weekly with the Cinnamon 88 Development Director (Darren Arekion) to provide interim data for their re-design of the development master plan and to discuss how re-design could best accommodate conservation concerns and interests. Rusk was the sole scientist with regular contact with the developers. Rusk served as a mediator between the conservation scientists and the developers throughout the negotiations. Several conference calls were carried out with a key group of international scientists, the Chief Forestry Officer, Forestry and National Parks, the Prime Minister's Special Advisor. The international scientist groups were included in conference calls at the request of Rusk. In addition, Rusk independently consulted regularly with this group of core scientists[4], many with whom she had been collaborating with since 1991, to ensure both transparency with her work and consensus with the scientific and management recommendation for the dove. Broader stakeholder consultations were not undertaken by government or the developers due to the sensitive and not yet public information regarding the development and the government/Cinnamon 88 contractual agreements. Selective information necessary to negotiations was made available to Rusk and the group with the proviso that it would not be shared elsewhere, but contractual agreements between Cinnamon 88 and Government of Grenada were not shared with Rusk, the scientific group or Forestry and National Parks Department. Obligations, such as Cinnamon 88's agreement to financially support the national park, were stated but no dollar amount was specified despite repeated requests from the NGOs, Forestry and Rusk. Rusk completed her research at Mt Hartman and submitted her report to Cinnamon 88 in October 2007. Scientists were told 1) the golf course, which the scientists believed to be a major problem due to the amount of habitat it would destroy, was a contractual agreement between Cinammon88 and Four Seasons and was non-negotiable, and 2) the national park would not increase in size.

4. These conversations continued through December 2007. In late 2007, Cinnamon 88's constraints regarding the golf course layout resulted in an impasse in discussion with Cinnamon 88 due to the unacceptable amount of disturbance and intrusion into dove habitat, according to Rusk and agreed to by members of the scientific group and the Forestry Department. The National Park Advisory Council (NPAC) members agreed with the assessment of Rusk that the Cinnamon 88 proposal required revision. For the first time since media outcry and the negotiations began, and with an impending repeat protest at a literary awards dinner at a Four Seasons hotel in Toronto, Four Seasons consulted with Rusk regarding this impasse, and Cinnamon 88 was asked to find an alternative, which was Cinnamon 88 accomplished later that day.

[4] See pg 17. * Core scientific group consulted with by Rusk, also partaking in conference calls with Cinnamon 88 and government, in List of key interest groups involved.

5. The National Parks Advisory Council was assembled during the negotiation period because conveyance of the land, including national park land per the amendment to the national parks legislation, required the Council to approve a new master plan submitted to the Attorney General for any of the national park land to be sold to Cinnamon 88. This Council was comprised of a wide group of Grenadian stakeholders from both government and the private sector.

Means by which consensus was obtained: what worked and didn't work

1. Media (international and local);
2. Advocacy for Grenada Dove conservation, including importance of unified message to developers and government to achieving goals;
3. Scientific information on Grenada Dove biology;
4. Non-confrontational approach by scientists, developers during negotiations to find mutually beneficial role/ willingness by both parties to compromise and work to find a solution;
5. Mutual trust (within limited capacity) between developers and scientists;
6. Transparency and consensus within working group (in this case, leading dove/bird/endangered species biologists).

The media and public relations, both internationally and nationally, carried the same message regarding the loss of critical habitat of a critically endangered species that would likely lead to its extinction and about the consequences of the ability of Grenada's government to sell their national parks. This message came from local newspapers, NGO's, conservation organizations, informal protests, regional and international news articles, and a website (grenadadovecampaign.com). The cohesive message of this public outcry, uncoordinated yet cohesive due to the clear nature of the controversy, was instrumental in its effectiveness.

In addition to the above mentioned publicity, the international scientific community presented their concern and opposition to the government, Four Seasons and Cinnamon 88 (Capital88) with the same message but with a scientific basis and with recommendations and information needed to adequately address the threat to the Grenada Dove. Letters came from various international conservation organizations, such as American Bird Conservancy, some with stronger tones of advocacy than others, but all with the same message. The information presented by these groups was coordinated and discussed between them, and Rusk was consulted to ensure that the information regarding the dove was accurate. Later letters were sent to government and Cinnamon 88, signed by all key conservation organizations and leaders in the scientific community (see Appendix 4 for links to a series of letters from/to scientific community), presenting key messages. Rusk did not sign onto these letters from the scientific community, as although she is recognized as the leading Grenada Dove biologist with 20 years experience, remaining the neutral scientist would be of greater value when a solution to the controversy would be sought.

Detrimental to the effort was a letter sent to the Prime Minister's office by a European zoological group with no prior involvement in Grenada Dove conservation recommending captive breeding rather than habitat protection. This organization was included in discussions regarding the development and the dove, without the knowledge of the international scientific community. The recommendation to "rescue" the birds "implied that there is some habitat to place rescued birds. There isn't. That is the crux of the issue. As we currently understand the habitat needs of the species, there is not unoccupied, protected habitat for reintroduction. That is why many of us are trying to hold onto what habitat exists" (response by Dr. David Blockstein, Grenada Dove Biologist). This alternative recommendation was ultimately not acted upon.

The recommendation and subsequent appointment of Bonnie Rusk (author of this document, Grenada Dove Biologist and Director, Grenada Dove Conservation Programme) to obtain and provide Cinnamon 88 with current and other known data on the dove provided a solid scientific basis on which to make clear recommendations for development. These recommendations were presented to Forestry and National Parks, the Prime Minister's Office and the international scientific group, as well as part of regular phone conversations, emails and conference calls with Cinnamon 88. This regular sharing of information between Rusk and the scientific community ensured collaboration within this group regarding decisions being made. Though data on the Grenada Dove was not confidential, all recommendations and information, as mentioned earlier, obtained regarding the development, revised master plans, and other planning was shared with this group with the understating and trust that it was not to be made public.

Results and Impact

Most of the conservation objectives outlined earlier was met through the planning phase. The Cinnamon 88 development has not yet taken place, except for road improvement, building of a secondary road and bridge, and the partial clearing of Hog Island before discussions ensued. Cinnamon 88 has kept their commitments with the scientific community regarding the Grenada Dove, except for the establishment of the trust, though its development was initiated prior to the cessation of activities at Mt Hartman. Cinnamon 88 planning and what activities have occurred on the ground have incorporated recommendations and supervision by the consulting Grenada dove biologist. Cinnamon 88 went beyond their commitments and voiced support for dove conservation efforts outside of Mt Hartman, financed the Grenada Dove census outside the estate and the development of a revised draft Conservation and Recovery Plan for the Grenada Dove. In addition, Cinnamon 88 has chosen to respect other environmental priorities in the construction of their development, beyond agreements for the Grenada Dove (see 3 below). Government, however, had not yet protected Beausejour/Grenville Vale along the west coast for the Grenada Dove prior to elections in January of 2008, when a new government came into office.

1. The protection of the Grenada Dove at Mt. Hartman is better enabled by both the re-designated park boundaries (Appendix 5 & 6) and the development mitigation measures submitted to, and agreed by, Cinnamon 88 (Appendix 8). The 2007 census data located 29 territorial males in the northeast sector of the Mt. Hartman Estate. This area has been recommended (Rusk, Oct 2007) and approved by the National Parks Advisory Council (2007) to be protected as critical habitat by re-designating the National Park boundaries, and has been incorporated into the Cinammon88 development planning for the remainder of the estate. The re-designated Mt. Hartman National Park boundaries (154 acres within the Estate) is to remain protected through direct transfer from government to a public Trust (per Cinammon88/Government of Grenada contract), with the boundaries shifted to maximize dove distribution within protected lands and to accommodate development needs. In addition, a series of mitigation measures were recommended and agreed to by Cinnamon 88 to minimize or eliminate impact on doves and their habitat (Rusk 2007).

2. The objective that protected habitat would include areas for dove population expansion was only minimally met. There are now areas protected previously not within park boundaries that have doves or can regenerated for dove use. Four territories that are outside the designated boundaries would be destroyed. Although the doves in these territories may move into the park, these territories still represent a significant portion the small population of doves. However, there was no additional protection of habitat at Mt Hartman that could lead to significantly increase the population size and removing its perilously low numbers from risk of extinction was not achieved. Informal discussions have taken place between Rusk and the Cinnamon 88 Development Director about the possibility of leaving areas wooded along edges of the park boundaries where the golf course or buildings will not make use of it. These proposals were favourably responded to. In addition, government has not protected Beausejour/Grenville Vale along the west coast, though discussions are still under way.

3. Finding consensus between government, developers and conservation scientists and to work together to achieve compatible goals was a success. This consensus was reached in part due to the successful media impact on the development (C88 and Four Seasons) and government, in part by the willingness shown by all parties at the table to find a solution, a willingness to compromise, and in part by the unified agreement regarding protecting dove habitat with which the scientific community came to the table. Without this willingness and the non-confrontational approach with which the parties came together, this endeavour may well not have succeeded.

4. Dove habitat at Beausejour has not yet been protected by government. This recommendation was made to government by the international scientific community as well as to the National Parks Advisory Council, and its protection as mitigation was supported by many Council members during the final Council meeting. The intention for its protection was announced by the previous government,

but this did occur before the 2008 elections (Appendix 8). Discussions continue to take place with the current government urging these lands be protected on the west coast for the dove.

5. According to Cinnamon 88, the frame contract with the Government of Grenada includes a commitment from Cinnamon 88 to financially support the Mt Hartman National Park (the Trust when land is transferred). Though requested by the scientific group, the frame contract was not made available to Rusk, the scientists nor Forestry and National Parks during these negotiations, and no dollar amount was revealed. According to Darren Arekion of Cinnamon 88, annual funds were included to support the Mt Hartman National Park in perpetuity, the Trust, and for the support for overall dove conservation activities. These funds are for annual upkeep of the national park, to upgrade the visitor centre inside and out, including with improved interpretation. Cinnamon 88 also suggested the possibility of this site, or one located elsewhere on their property, to become a terrestrial research station and an added resort attraction.

6. Cinnamon 88 has chosen to respect other environmental priorities beyond agreements for the Grenada Dove - such as an eco-certified golf course and the protection of mangroves, the wetlands, grey water and water processing. Although not part of the original conservation objectives for the Grenada Dove, Cinammon88 agreed to protection (informal) of other ecologically important sites within the land conveyed to them. This included 2 important wetland areas with the surrounding mangrove in the main Mt Hartman valley. Discussions between Rusk and Mr Arekion regarding these sites began early in the negotiations. Their ecological importance for migratory, other wetland birds and mangrove health, in addition to their possible benefit to the resort as an education site (boardwalks, interpretation) was conveyed to Mr Arekion. A planned secondary road was moved by Cinnamon 88 to avoid these wetland areas (Appendix 9). In addition, Cinnamon 88 was receptive to enhancing golf course ponds for birds, as a much needed source of fresh water during the dry season for resident and migratory birds (Appendix 10).

Role of Four Seasons

The contractual arrangements between Four Seasons, Cinnamon 88 and government was not known by this author. Cinnamon 88 had stated that the land and development will remain owned by the developers and that Four Seasons will manage the property once it is complete. It was also said that Four Seasons had certain requirements for the development, including a 18-hole golf course, but the details of this arrangement were not presented to the scientific group advocating for the Grenada Dove. Four Seasons responded with distance to concerns and inquiries to BirdLife International (2006) and similarly to Margaret Atwood and her husband Graeme Gibson, the Presidents of the BirdLife International Rare Bird Club (2006), including the following; “We are involved in a project at Mount Hartman Estate in Grenada, however we are neither the owner nor the developer of the project. Hence, when we received the letter from Dr. Michael Rands expressing his concern about the doves, we forwarded it to the group who are

developing the project"[5]. Meetings were held with Four Seasons in Toronto by BirdLife and the RARE Center. Significant and likely pivotal to the negotiations was a protest by Presidents of the Rare Bird Club at a prestigious literary awards gala at a Toronto's Four Seasons Hotel, by Margaret Atwood, one of Canada's most noted authors and Graeme Gibson. In November 2007, prior to the upcoming annual literary awards gala at the Toronto Four Seasons, and a scheduled meeting between Graeme Gibson and Four Seasons, an impasse (December 2007) with Cinnamon 88 over a golf cart path and a fairway through critical habitat was quickly resolved by Four Seasons intervention. This impasse required further modification of the proposed golf course, and this revision was supported by the National Parks Advisory Council. Four Seasons requested consultation with Rusk (with Cinnamon 88 present) for the first time since negotiations began, supported the scientist concern, after which Cinnamon 88 resolved the golf design issue. Though the extent to which Four Season's influenced the development is not clear, potential further negative international publicity did warrant and enable their successful intervention.

Lessons learned

1. It is this author's opinion that finding a "win-win" solution to this controversy, which included parties with very differing goals and agendas, was successful in part because parties came to the table with a willingness to find a solution, a non-confrontational approach and, and within acceptable limits (depending on the situation) a willingness to compromise.

2. The importance of having, conveying, using and trusting the science and the scientists cannot be overstated. Without research that showed the rarity of the Grenada Dove and the importance of Mt. Hartman, the scientists and conservationists would have had little credibility in their efforts to protect the site

3. Issues between conservation and development, with varying levels of impact to biodiversity and the environment, arise regularly. In this case, a tangible benefit for Cinnamon 88 was not only the cessation of negative public relations messages, but the positive media that began to ensue. This consensus resulted in not only the development itself moving forward, but as this being applauded as a case study where development and conservation worked together, both in the national media (i.e. radio talk shows in Grenada) and the international media. This 'win-win", as it was referred to, was acknowledged by National Geographic, and the possible marketing of this site as a Geotourism Destination (National Geographic and Denyse Ogilvy/People in Action) and Grenada signing the Geotourism Charter.[6]

4. Coordinate, as possible, media campaign and grassroots advocacy to ensure maximum benefit by relaying a cohesive and simple message. In this situation, preventing habitat loss for the Grenada

[5] Peter Hodgson, Vice President Corporate Planning, Four Seasons, 21 Nov 2006. See appendix 4.
[6] http://grenadamacometer.org/index.php?option=com_content&task=view&id=46&Itemid=85

dove and that habitat loss would likely hasten extinction for this critically endangered species was a clear message presented by all in different ways. As mentioned, much of the media noise was not coordinated, but this situation presented a clear understanding of the implications of what could happen to the dove if the development proceeded as originally outlined. Once this message was relayed, Cinnamon 88 did not hesitate to state that they would re-examine the plans.

5. This case study also shows the importance and the impact of a unified and clear message that "opponents" to the situation relayed. Local and international NGO's, both scientific and not, relayed the critical importance of Grenada Dove habitat. Though in this case the inappropriate message to take the doves into captivity was overcome, but in other scenarios this could have been detrimental to long term efforts under way and goals to be achieved.

6. A comprehensive environmental impact assessment (EIA) of the site had not been carried out. Addressing the issues prior to planning will help to minimize surprise for the developers as well as government. In this case, issues regarding existing limitations to development (i.e. the Clark's Court Bay Marine Protected Area) arose late in Cinnamon 88's planning regarding the marine protected area and its laws. This was a recommendation made to Cinnamon 88 by the international scientific community and Rusk prior to their cessation of work in late 2008.

7. Little was known of the impending development prior to the release of the November 2006 environmental assessment report. Subsequently, some development plans were released to the groups mentioned in order to negotiate the development and dove lands. This information was not made available to the greater public, during or prior to these negotiations. Broader stakeholder participation in the planning for the Mt Hartman Estate would have revealed not only the varying land uses and resource users, but would have enabled residents to partake in planning of their natural resources and made any endeavour on the site more sustainable.

Unresolved issues

1. The lands conveyed to Cinnamon 88 are those agreed to for development. However, the Mt Hartman National Park was de-gazetted to convey a portion of the lands but has not been re-gazetted with new boundaries (as of 2010). Government is aware of this and is in the process of completing this task. The amendment to the National Parks and Protected Areas Act allowing sale of national parks has been repealed.
2. Cinnamon 88 has committed financial support for the Mt Hartman National Park *and* the Dove Trust, though no dollar amount was revealed. According to the Cinnamon 88 Development Director, financing would also include support for overall dove conservation activities, and this support would be specifically for the activities specified. It is, however, not clear how Cinnamon 88 will finance the

trust to ensure the park's protection in perpetuity. During negotiations, the scientists, Rusk and Forestry and National Parks were told that there would be sufficient financing to ensure its protection in perpetuity, as well as for dove conservations. This should be confirmed and solidified.

3. Dove habitat at Beausejour/Grenville Vale has not been protected. In a December 2007 letter from the international scientific community to then-Prime Minister the Honourable Dr. Keith Mitchell (Appendix 8), they stated that " there is still work to do to ensure that the project is a win-win for conservation and development interests" and that given the loss of 20% of Mt Hartman's dove territories, formal protection of Beausejour/Grenville Vale will serve "to mitigate losses at Mt. Hartman, provide a significant and extremely important secondary population center for the dove, and provide opportunities for further increases in the overall dove population." In early 2008, the then-government said on the radio that Beausejour would be protected.
4. A Trust Development Committee[7] was established by Cabinet at the initiation of the then-Prime Minister's Advisor, Jennifer Ellard. The legal and jurisdictional authority of the new "Dove Trust" needs to be established. It was agreed that the Mt Hartman would be protected within a "Dove Trust." Per Darren Arekion, this is included in the frame contract with the Government of Grenada. The Trust's establishment is to ensure the Park's protection in perpetuity, and will also serve as a vehicle to management of funds for the park. Draft Trust documents were developed and preliminary recommendations by the attorney are that the Trust be incorporated as a non-profit organization and not by an Act of Parliament. Draft Trust documents are available for review. This process halted as well with the cessation of work and expenditures by Cinnamon 88 in early 2009.
5. A small portion of land agreed to in the negotiations was not included in the final survey drawings and subsequent conveyance drawings, but was acknowledged by the Development Director as an error and he noted that these lands would be protected with the sanctuary. These lands are at the easternmost part of the estate, just south of Clark's Court Bay Marina.
6. Additional issues arose regarding current land uses and livelihoods at Mt Hartman and Hog Island (ie. Roger's Bar, horses)[8], proposed beach development within the Woburn/Clark's Court Bay Marine Protected Area and ownership of Hog island (see Appendix 12). These are unresolved issues that require subsequent discussion.

Conclusion

The greatest threats to this species are the loss of existing habitat and the limited availability of suitable habitat outside the protected areas. The current population is likely too small to be viable in the long run. The loss of existing suitable habitat at Mt Hartman and elsewhere on the island with an increase in development will continue to prevent the species population from expanding and increase the likelihood

[7] The committee included J. Ellard, B. Rusk, Chief Forestry Officer (Forestry and National Parks), David Wege (BirdLIfe International).

[8] http://www.tourismconcern.org.uk/uploads/file/In%20Focus/Tourism%20In%20Focus_Winter%202008-9.pdf

of the species extinction. Ideally, as the core of the species population, habitat at Mt. Hartman left available for the dove will increase its chances of survival over time. The developers at Mt Hartman are encouraged to leave as much dove habitat as possible if development planning continues. Without government contribution to habitat protection elsewhere, the current tenuous situation will not change for Grenada's national bird.

Issues and conflict between conservation and development can be seen throughout the Caribbean as tourism becomes the dominant sector in Caribbean economies. Coastal degradation that results from developments that do not adequately address the ecosystems and their functions ultimately threaten the very features that tourists come to enjoy. Efforts by many organizations focus on development and integration of best practices for various types of activities and developments. Appendices 12 through 14 address broader issues related to Caribbean tourism, its contribution to the region's economy as well as its impact, and how biodiversity can be integrated into the tourism sector. Sources and sample best practice guidelines for sustainable hotel development are also included.

List of key interest groups involved

Cinnamon 88 Ltd, Grenada

- Darren Arekion, (Former) Development Director, Cinnamon 88 Ltd, Grenada†
- Peter Straker, Surveyor, Cinnamon 88 Ltd, Grenada†
- Richard Hesford, Project Manager, Cinnamon 88 Ltd, Grenada†

Government of Grenada (Present and Former)

- Jennifer Ellard, (Former) Special Advisor to the Prime Minister †
- Alan Joseph, (Former) Chief Forestry Officer, Forestry and National Parks, Grenada
- Venance Msacky, Chief Surveyor, Ministry of Agriculture, †
- Fabian Purcell, Chief Physical Planning Officer, Ministry of Agriculture,

National and International NGOs and Individuals

- Valma Jessemy, Author, Environmental Impact Assessment for Mt Hartman Development †
- People in Action, Denyse Ogilvy †
- Agency for Rural Transformation (ART), Sandra Ferguson †
- Bonnie L Rusk, Grenada Dove Biologist, Director, Grenada Dove Conservation Programme* †
- David Wege, Caribbean Senior Programme Manager, BirdLife International* †
- David E. Blockstein, Senior Scientist, Ornithological Council and Dove Biologist* †
- Stanley A Temple, University of Wisconsin-Madison*
- Lisa Sorenson, President, Society for the Study and Conservation of Caribbean Birds†
- Graeme Gibson and Margaret Atwood,, Honorary Presidents, BirdLife Rare Bird Club
- George E. Wallace, Vice President, International Division, American Bird Conservancy*
- Dale Galvin, RARE Center*
- Paul Butler, RARE Center
- George Ledec, (Former) Lead Ecologist, Latin America and Caribbean Region*
- Jonathan Tortellot, National Geographic Center for Sustaianable Destinations
- Andrew Dobson, Past President, Society for the Study and Conservation of Caribbean Birds

- Grenada Hotel Association
- Greg Moore, Mangrove Biologist, University of New Hampshire
- Kirsten Hite, Environmental Defense, Washington, D.C.
- The Nature Conservancy, Ruth Blyther, Country Program Representative†

* Core scientific group consulted with by Rusk, also partaking in conference calls with Cinnamon 88 and government.

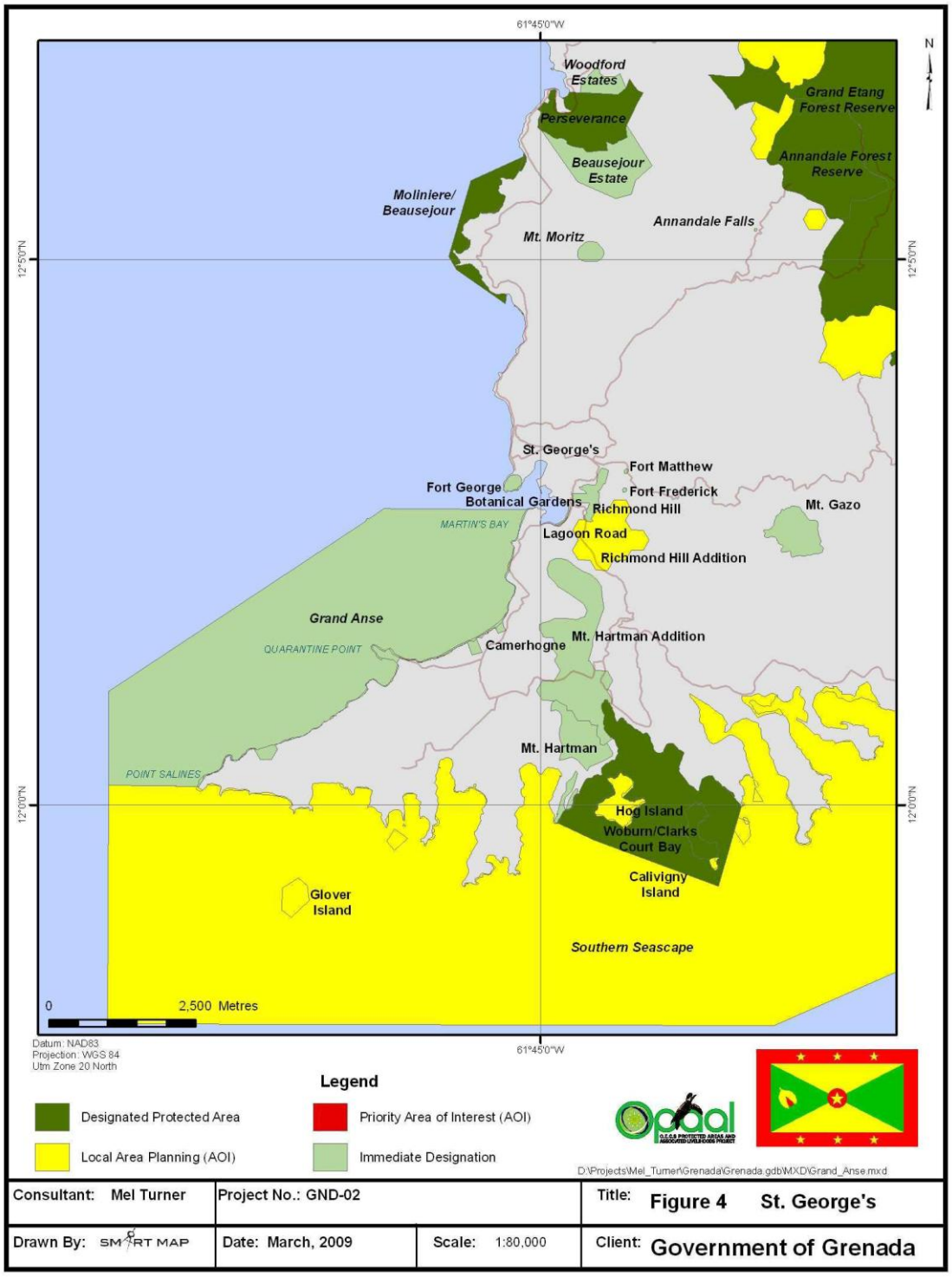
† Information by these individuals, either verbal or written, collected in preparation of this document

Appendix 1. Environmental impact assessment for Mt Hartman development, JECO

Valma Jessemy, Author, Environmental Impact Assessment for Mt Hartman Development
JECO Caribbean Inc. November 2006.
Final Report. Conservation and Development Strategy. Grenada Dove and Four Seasons Resort Project. Mt. Hartman Estate, Grenada.

The original development design consisting of a Championship 18-hole golf course, a hotel, 107 hotel units, 255 villas and a marina.

Appendix 2. Woburn-Clarks Court Bay Marine Protected Area



Appendix 3. Re-designated Mt Hartman National Park boundaries

Re-designated Mt Hartman National Park Boundaries
Critical Grenada Dove Habitat

- Area of greatest concentration of dove
- Most critical habitat on Estate
- Contiguous habitat
- Protects new habitat between patches

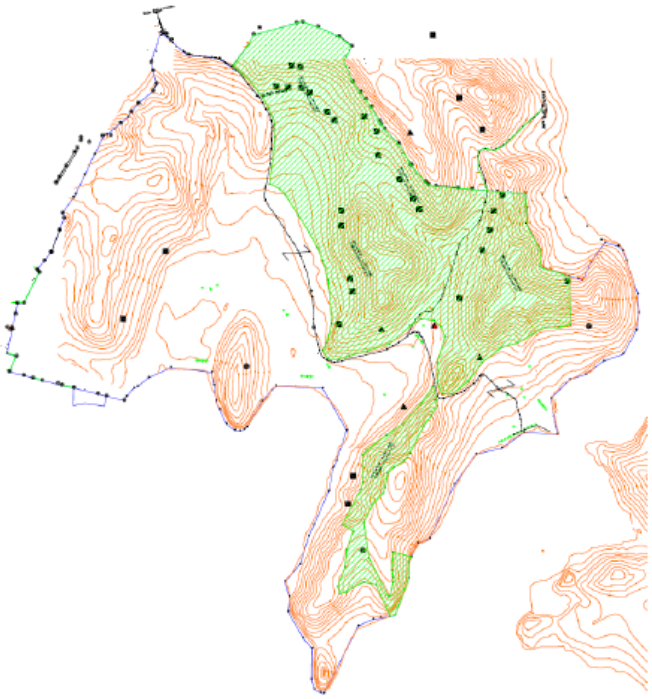
Total Territories in Estate = 29

Territories in adjusted boundaries = 25

Territories lost to development = 4

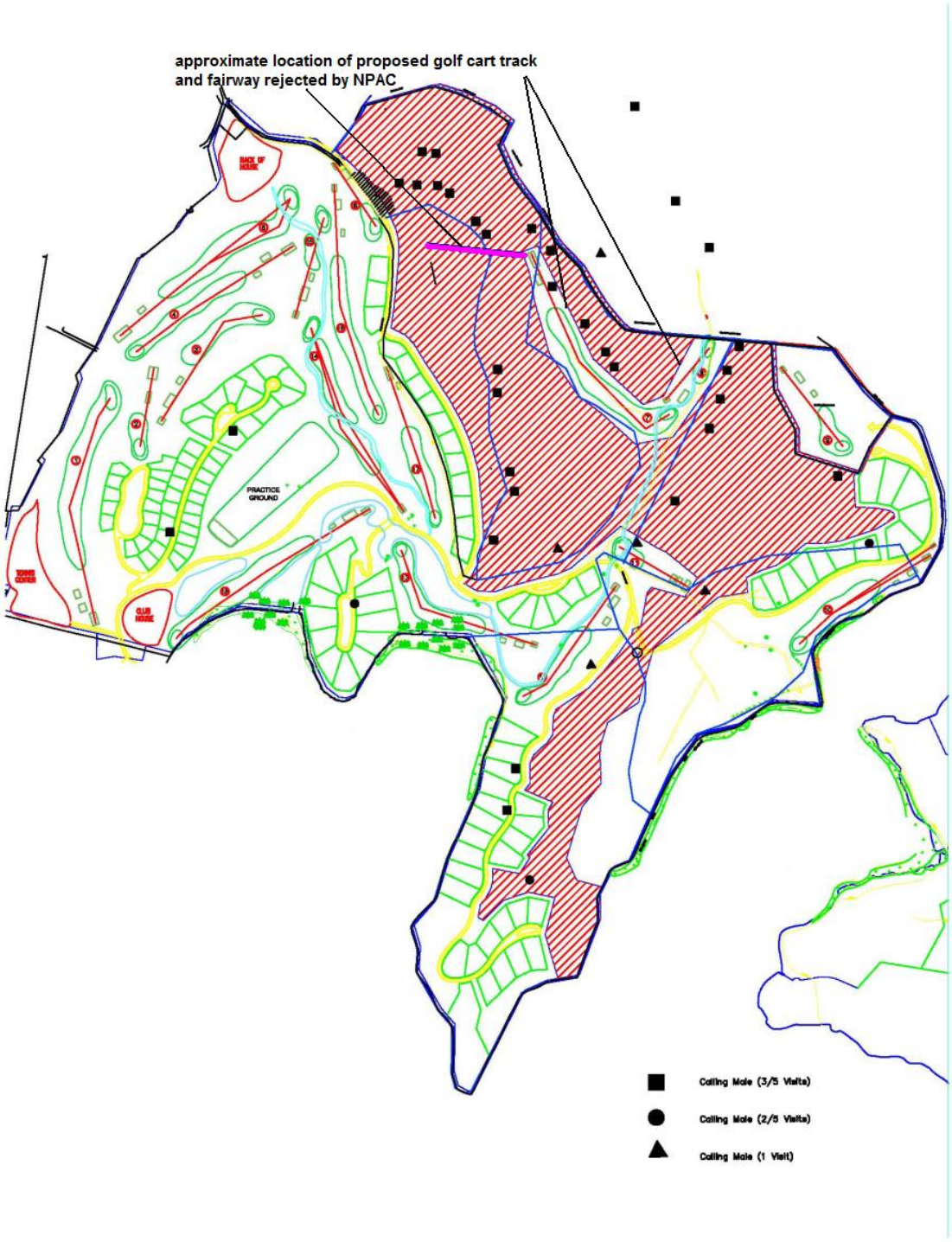
(birds will be encouraged to disperse to N.P.)

1996 park configuration
(3 parcels)



Mt Hartman peninsula – allows for dove territories lost to disperse
- Ridge top important for Grenada Hook-billed kite

Appendix 4. Cinnamon 88 proposed golf course layout not approved.



Appendix 5. Letters from/to scientific community to Government of Grenada, Four Seasons and Cinnamon 88

Much of the initial protest and negotiations between the international community, the took place in the form of letters, most of which are listed below (http://www.grenadadovecampaign.com/negotiation.html)

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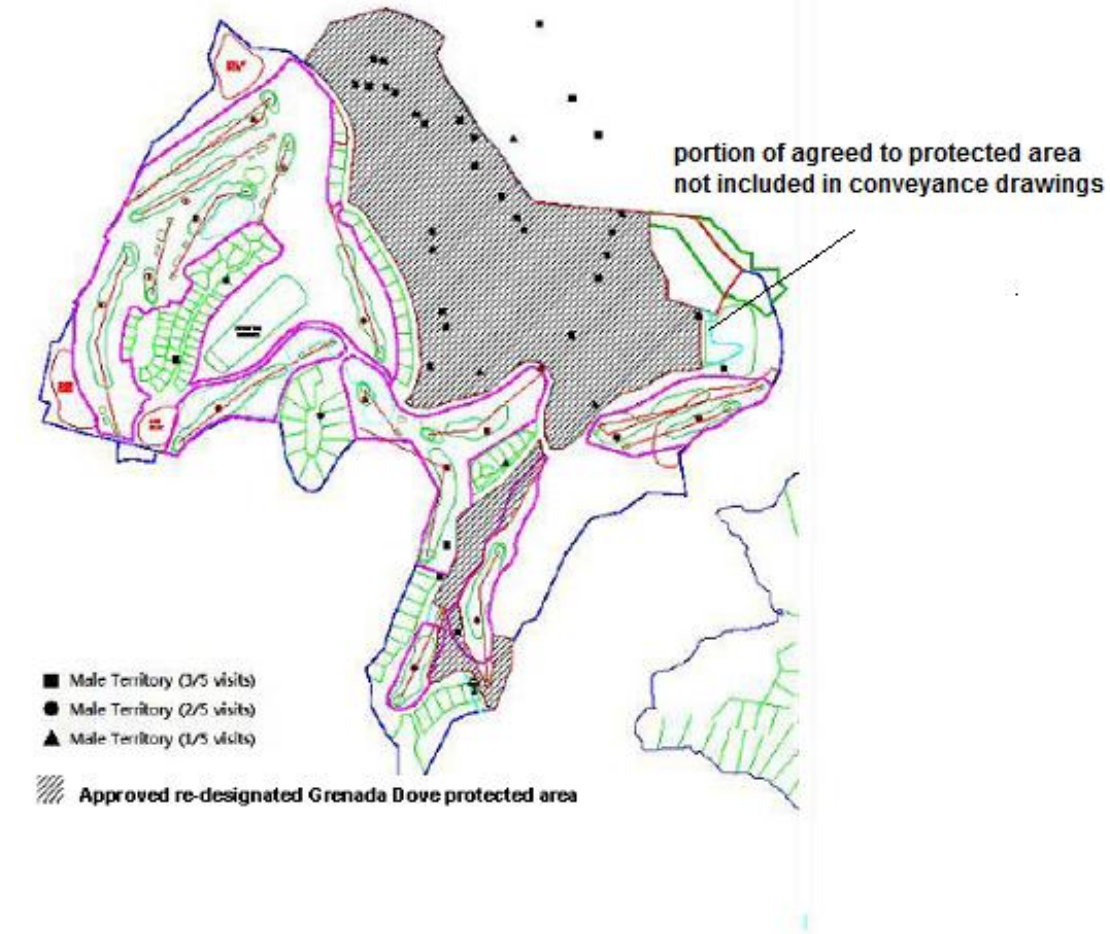
- Initial letter from Michael Rands, Director and Chief Executive of BirdLife International to Mister Isadore Sharp, Chairman and Chief Executive Officer of Four Seasons Hotels and Resorts [9]
- Response to Michaels Rands' letter. 14 December 2006 [10]
- Email from David Wege, Caribbean Program Manager at BirdLife International, to officers of Four Seasons Hotels and Resorts. December 23, 2006 [11]
- Email reply from Peter Hodgson, vice president corporate affairs at Four Seasons Hotels and Resorts [12] December 28, 2006
- Letter to Peter Hodgson from the Society for the conservation and study of Caribbean Birds [13] December 9, 2007
- Letter from the American Bird Conservancy 5 January 2007 [14]
- Atwood/Gibson correspondence with Four Seasons Hotels and Resorts and with the Prime Minister of Grenada, and the Leader of the Opposition. November 12, 2006 [15]
- Answer to Atwood/Gibson correspondence from Four Seasons Hotels and Resorts.21 November 2006. [16]
- Follow-up Atwood/Gibson letters November 27, 2006 [17]
- Copy of letter to Mr. Peter Hodgson. 11 January 2007 [18]
- Letter from Atwood/Gibson to Mr. Peter Hodgson [19]
- Letter from Mr. Peter Hodgson to Atwood/Gibson. 12 Jan 2007 [20]
- Letter from Atwood/Gibson to Mr. Peter Hodgson. 18 January 2007 [21]
- Letter to the Honourable Prime Minister Mitchell from Margaret Atwood & Graeme Gibson. December 18, 2006 [22]
- Letter to the Honourable Tillman Thomas, Leader of the Opposition in Grenada. [23]

[9] http://www.grenadadovecampaign.com/rands2sharp-1.html
[10] http://www.grenadadovecampaign.com/sharp2rands-1.html
[11] http://www.grenadadovecampaign.com/wege2sharp-1.html
[12] http://www.grenadadovecampaign.com/hodgson2wege-1.html
[13] http://www.grenadadovecampaign.com/society2hodgson-1.html
[14] http://www.grenadadovecampaign.com/Images/ABC-GrenadaLetter.pdf
[15] http://www.grenadadovecampaign.com/atwoodgibson2sharp-1.html
[16] http://www.grenadadovecampaign.com/atwoodgibson2sharp-1.html
[17] http://www.grenadadovecampaign.com/atwoodgibson2hodgson-1.html
[18] http://www.grenadadovecampaign.com/atwoodgibson2hodgson-2.html
[19] http://www.grenadadovecampaign.com/gibson2hodgson-1.html
[20] http://www.grenadadovecampaign.com/hodgson2gibson-1.html
[21] http://www.grenadadovecampaign.com/gibson2hodgson-2.html
[22] http://www.grenadadovecampaign.com/atwoodgibson2mitchell-1.html
[23] http://www.grenadadovecampaign.com/atwoodgibson2tillman-1.html

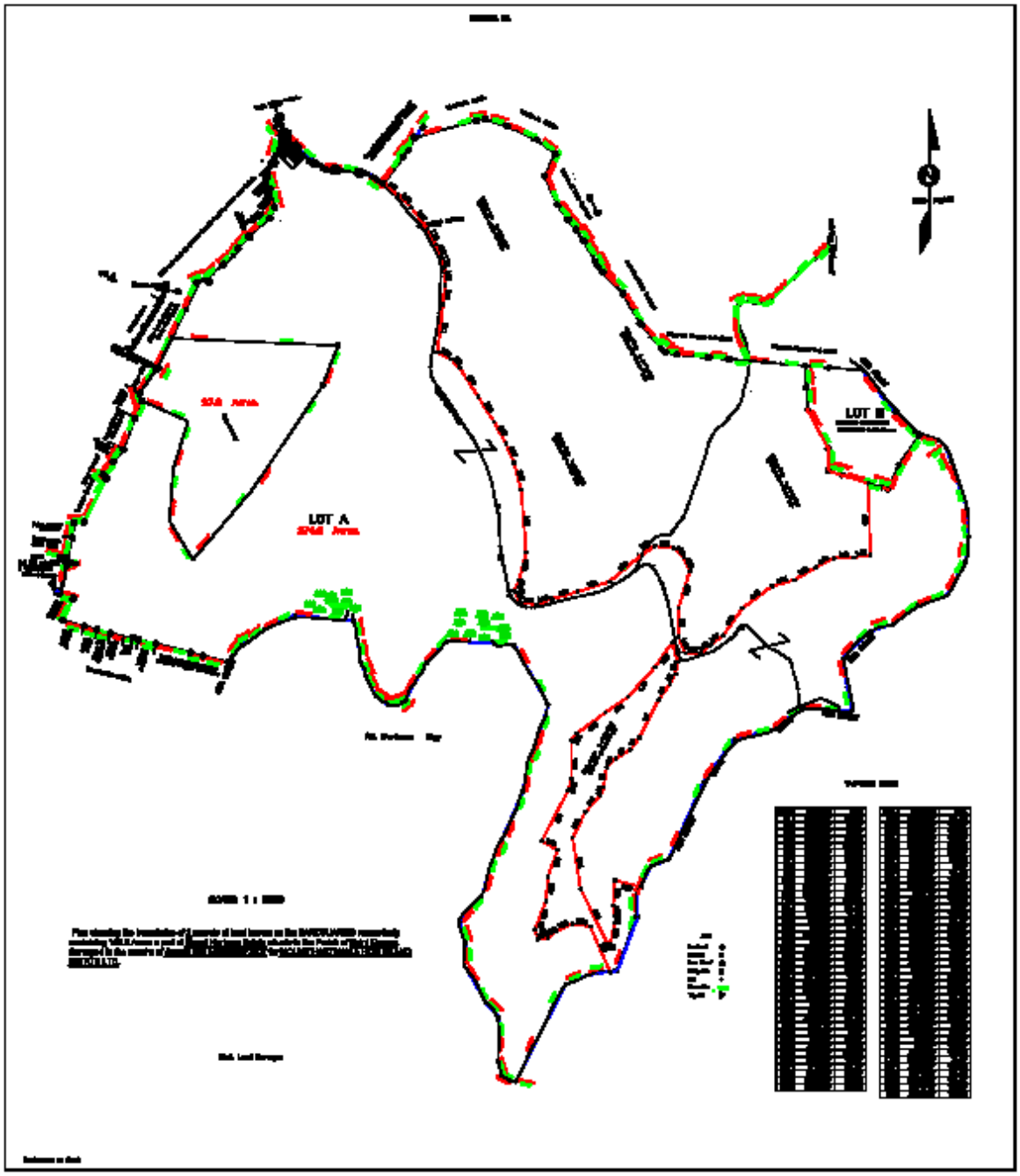
Appendix 6. Map of Cinnamon88 Master Plan with re-designated national park boundaries

Grenada Dove (*Leptotila wellsi*) Census 2007.
Submitted by:
Bonnie L. Rusk
Director, Grenada Dove Conservation Program
January 2008

Appendix V. Map of Cinnamon88 Master Plan with approved re-designated Grenada Dove protected area boundaries (2007, this study)



Appendix 7. Survey Map of lands conveyed to Cinnamon 88 with re-designated national park boundaries



Appendix 8. Best Practices: Report to Cinnamon 88 for actions to protect the Grenada Dove

The following is the list of scientific and technical recommendations submitted to Cinnamon88 for the protection of the Grenada Dove, submitted by Bonnie L Rusk with review and agreement by the following individuals;

Alan Joseph, (Former) Chief Forestry Officer, Forestry and National Parks, Grenada
David Wege, Caribbean Senior Programme Manager, BirdLife International
Dale Galvin, RARE Center
Paul Butler, RARE Center
Lisa Sorenson, President, Society for the Study and Conservation of Caribbean Birds
Andrew Dobson, Former President, Society for the Study and Conservation of Caribbean Birds
Stanley A Temple, University of Wisconsin-Madison,
David Blockstein, Senior Scientist, Ornithological Council and Dove Biologist
Graham Gibson, Honorary President, BirdLife Rare Bird Club
George E. Wallace, Vice President, International Division, American Bird Conservancy
George Ledec, (Former) Lead Ecologist, Latin America and Caribbean Region

GRENADA DOVE CRITICAL HABITAT AND ASSOCIATED RECOMMENDATIONS

1. Identification of critical habitat.

Critical habitat within the Mt Hartman Estate is identified based on the distribution of doves determined through this study. The land in the northeastern section of the estate contains 25 of the 29 confirmed territories and 4 of the 7 suspected territories identified on the Estate through this study. While it is understood that other areas, both within the estate and outside the estate currently with dove habitat and potential dove habitat, will be essential to the long term growth and persistence of the species, this study was charged with identifying the most critical areas of habitat within the Estate. This identification of critical areas will be used to help redefine the boundaries of the National Park. The area identified as critical habitat in Appendix III contains both occupied dove habitat and adjacent potential habitat.

Within the Mt. Hartman Estate boundaries, 29 Grenada Dove territories were confirmed, plus 7 suspected territories where males were heard. This study found 22 confirmed territories (plus 5 suspected territories) within the existing National Park boundaries, and 7 confirmed territories (plus 2 suspected territories) outside the National Park but within the Mt. Hartman Estate Boundaries.

A protected area, with re-designated boundaries to protect critical habitat and potential habitat in the northeast sector of the Estate (as outlined in Appendix III), could accommodate 25 of the 29 confirmed dove territories within the protected area (plus 4 suspected territories). In this scenario, 4 confirmed territories plus 3 potential territories would be lost to development.

Preserve design is based on a number of key principles which have been incorporated into this recommendation, including;

a) The importance of contiguous habitat and the elimination of habitat fragmentation. This is of particular importance for a more sedentary, habitat-specific species with little season movement as with the Grenada Dove.
b) Reduced edge and *edge effect* between habitat and the altered landscape. Edges increase negative effects, such as predators, invasive species, and other "external threats" such as illegal shooting.
c) Given the constraint of developing a plan for a single reserve surrounded by an altered landscape with multiple use functions, this reserve does not put the needs of the dove within a larger landscape context that incorporates a dynamic mosaic of secondary vegetation that changes with time. Thus, it will be essential to 1) manage the reserve's vegetation over time and 2) take a larger landscape view of the distribution of the dove and its suitable and potential habitat, and 3) take a long-term view of the requirements for management and recovery of the species.
d) Habitat Fragmentation is well documented to negatively affect population survival (as well as overall biological diversity) and should be a prime consideration in a conservation strategy (Janzen 1974, Picton 1979, Soule and Wilcox 1980, Lovejoy and Oren 1981, Whitcomb *et al.* 1981). A species is, therefore, more likely to survive in a larger, contiguous tract of natural habitat than in smaller, isolated parcels (Burkey 1989).
e) Protected habitat should be capable of supporting an intrinsically viable population. A preserve system that can not support a viable population of its "flagship species" over time is ultimately doomed to failure.
f) A patch of preserved habitat that is buffered from surrounding non-habitat is better than a preserve that is abruptly juxtaposed to non-habitat.
g) Patches of habitat that are close together or linked by corridors are better than patches that are widely separated.

2. Recommendations for protecting critical Grenada Dove habitat;

A contiguous patch of existing or potential dove habitat in the northeastern sector of the estate is identified in Appendix III. This area would include 25 of the 29 confirmed territories (and 3 suspected territories) identified in this study on the Mt. Hartman Estate. Potential habitat, currently being grazed and not suitable for doves, within the current National Park boundaries should be left to develop into dove habitat, and two currently isolated parcels within the National Park should become contiguous by restoring habitat between them (Appendix III).

***3. Concern for protection of non-contiguous habitat*;**

As noted above, potential habitat within existing National Park boundaries should be left to regenerate. The recommended re-designated protected area boundaries would connect currently isolated patches of existing dove habitat. Fragmentation and the loss of potential habitat between critical areas that may result from development would maintain and expand fragmentation, increase edge effects on critical existing habitat and increase risk to confirmed territories. Loss and fragmentation of existing and potential habitat is strongly discouraged. There are configurations of development and dove habitat that would minimize these problems, and they should be pursued.

Habitat reestablished throughout the Mt. Hartman Estate would be best for the Grenada Dove. The next best goal is to minimize the negative impacts of development on existing critical habitat for doves on the estate and maximize the benefits of mitigation elsewhere. At a minimum the area designated as critical habitat in Appendix III should be fully protected without intrusions that would threaten doves with harmful edge effects. Proposals for any such intrusions should be carefully considered for their short term and long term impacts on the Mt. Hartman dove population. The nearby area of dove habitat in Beausejour appears to be the best nearby site for mitigation of lost areas of potential habitat within the Mt. Hartman Estate.

4. Proposed general boundary adjustment.

It is recommended that the National Park boundaries be adjusted to optimize the area of protected habitat, as outlined in Appendix III. Inclusion of the ridge top on the southern peninsula would be of great conservation value to another threatened species, the Grenada Hook-billed Kite, which was observed using the ridge top during this study.

5. Recommendations to minimize impact to protected Grenada Dove habitat.

i. Buffer zones;

A 10-m buffer zone should be established between areas of development and protected area/critical habitat. It is recommended that this buffer be half outside the fenced area, and that vegetation in the buffer zone should be natural vegetation that grades gradually to developed land.

ii. Fencing;

Fencing is necessary to surround the perimeter of the redefined sanctuary boundaries to 1) keep dogs and other domestic animals out, 2) deter people from entering and starting informal trails throughout the protected area, 3) ensure construction activities stay within designated areas and no intrusion in the protected area occurs. ~~Horizontal wires should be wide enough apart (12") to permit doves and other birds to pass through, and should be made visible by hanging reflective metal "anti bird strike tabs" from it. Vertical wires should be eliminated, as a flying bird would be more likely to damage a wing by striking vertical strands of wire.~~ Placing the fence outside of the dove habitat rather than within it (and hanging reflective metal "anti bird strike tabs" from it) should enhance the visibility of the wire, allowing birds to better avoid it. Vertical posts should be used only as need. Entrance into the Dove protected area should be from the visitor center on designated trails only. ~~Suggested fencing specifications: The fence should be 5' tall, and the wire should be a minimum of 10" from ground level to enable dove to walk through.~~ *Per consensus of the scientific group and agreement by Darren Arekion, the national park boundary was agreed to be fenced with a 6' chain link fence around the entire park perimeter.*

Fencing should be erected prior to initiation of construction. Temporary fencing can substitute during the initial construction phases while permanent fencing is procured and installed. Temporary fencing should be in place prior to any road improvement to provide access to Hog Island. Specifications for temporary fencing should also include a highly visible fence to avoid bird strikes. A highly visible plastic "barrier fence", such as those used on construction sites, should be considered.

iii. Pets;

Prohibition on resort grounds of cats, dogs or other mammalian or avian pets in strongly recommended. Non-compliance to this rule could severely threaten Grenada Doves.

iv. Pesticides and poisons;

Application of pesticides to vegetation should be prohibited within the estate, on the golf course or in villa or hotel gardens. Their use could contaminate vegetation and water sources, threatening the Grenada Dove and other bird and terrestrial species.

v. Land uses adjacent to the protected area;

The following 3 land uses are envisaged next to the protected area; roads, villas, and golf course fairways. A buffer zone (see 3 above) is recommended between all three use zones and the protected area. This buffer zone should be 10m consisting of natural vegetation to soften the edge effect (see 3 above). Where villas are located near sanctuary boundary, a minimum set-back between the building and the buffer zone should be established to minimize effects on the buffer edge.

vi. Windows facing Dove habitat;

No large picture windows facing the protected area should be permitted. Birds will be attracted to reflection of trees and fly into windows. As a further precaution, those (preferably small) windows that do face the dry forest would ideally have ultraviolet stickers (which are highly visible to birds, but less so to humans).

vii. Fresh water sources;

Access to fresh water may be an important limiting factor for Grenada Doves, particularly during the dry season. Though it is currently unknown, the location of fresh water sources used by Grenada Doves may be small sources outside the current protected area boundary and within the site to be developed. Though water sources can attract predators, such as the mongoose, during the dry season, it is recommended that sheltered sources of water within and adjacent Grenada Dove habitat should be provided, with specific location and design to be examined further and based on the structure of known existing sources. Existing water sources (small freshwater ponds) within the estate should be left until use of water sources by Grenada Doves is known, or it is determined that the Grenada Doves have water sources within the sanctuary.

viii. Use of Native vegetation;

Use of native vegetation, especially leguminous plants that would provide sources of food and shelter for doves, for landscaping adjacent to the protected area and within the developed area (for example, areas between fairways) should be required wherever it is feasible. Regeneration of habitat through dove-friendly landscaping could mitigate loss of habitat throughout the developed site and support rather than threaten dry forest biodiversity. In particular, planting and/or leaving standing native shade tree species between the villa houses and the Sanctuary boundary would help to reduce the biological "edge effect" of the cleared areas upon the dry forest, possibly benefiting those Grenada Doves living closest to the Sanctuary boundary. A list of native dry forest tree, shrub, and cactus species that could be planted and allowed to grow naturally along golf course fairways and around buildings can be obtained from the Forestry and National Parks Department.

ix. Predator management;

Ongoing predator (mongoose) control programmes should be carried out within the development site, during construction and during implementation. It is possible that biological monitoring will indicate that some non-native invasive animal or plant species are threatening the survival of the Grenada Dove or other species of conservation interest. Under such a scenario, appropriate management measures (such as mongoose trapping) might need to be implemented.

x. Recommendations for development phases;

Construction:

a. Prohibition of hunting, wildlife capture or harassment, plant collection, or setting of fires by construction workers or contractors, both within the protected area and within the resort premises.
b. Independent, on-the-ground environmental supervision of all construction work, in particular when any cutting, clear or use of heavy machinery is in use in areas adjacent to the protected dove habitat.
c. All construction workers or contractors should not enter the designated protected area boundary.
d. A Grenada Dove expert should be consulted prior to, and be present whenever, scheduled habitat alterations occur on or adjacent to existing Grenada Dove territories. Consultation should take place to determine if impacted birds should be relocated or if habitat alteration should occur to allow dispersal to adjacent vegetation. If the dispersal option is recommended by dove technical experts, it is strongly recommended that habitat alteration to an established territory should not occur during the breeding season, between June and January, so as to not cause a failed nesting attempt

while allowing a dispersing bird to establish territory in other suitable habitat. Clearing of vegetation should proceed slowly toward the sanctuary to allow displaced doves the ability to disperse toward the protected areas.

Resort Operation:

e. Prohibition on pet mammals or birds of any kind within the resort premises.
f. Food wastes should be handled in a pre-defined manner that minimizes the risk of attracting mongooses or other potential Grenada Dove predators.
g. No outdoor use of any pesticides or other chemicals that could harm birds or dove habitat.
h. Scientific research and monitoring should be encouraged on the resort grounds, where helpful to the conservation of the Grenada Dove or other native species.

ix. Activity within protected Dove area;

Dove research should continue. Access into dove habitat should not be permitted except when necessary for management of the National Park/Protected Areas and for research, and should only be for personnel with an understanding of Grenada Dove requirements for lack of disturbance, to the extent possible. Controlled access can be permitted on designated trails only. Other activities within these areas should be at the discretion of the Forestry and National Parks Dept. Educational trails should follow existing paths. Activities that would harm known Grenada Dove habitat (e.g., trail construction) should not be permitted. Activity would be based on the advice of the Forestry and National Parks Department and the Board of the Grenada Dove Public Trust, which will be designated to manage these protected lands.

6. Recommendations for Grenada Dove Conservation (off-site) (See appendix XI for additional detail)

i. Protection of Grenada Dove habitat at Beausejour/Grenville Vale.

The Beausejour Estate, an approximately 130-acre estate and the adjacent Grenville Vale (area unknown) had 15 calling male Grenada Doves prior to hurricane Ivan, 40% of all west coast individuals recorded. It is strongly recommended that this site be protected and managed for the Grenada Dove. Protection of this site is important to mitigate the loss of occupied and potential habitat on and around the Mt. Hartman Estate.

ii. Grenada Dove Research and Management Beyond Mt. Hartman (See Appendix XI for additional detail)

The long-term recovery goal for the Grenada dove must include an increase of dove habitat elsewhere on Grenada. Compatible management of areas outside the Mt. Hartman Estate, particularly adjacent lands, will be extremely important for dove dispersal and possible population growth, and should be encouraged where possible. Most potentially restorable habitat on the Mt. Hartman Estate but outside the recommended critical habitat will no longer be available for establishment of new territories and expansion of the population due to development activities; therefore, any potential sites for habitat restoration outside of the Mt. Hartman Estate should be explored. As well, restoration of potentially restorable habitat within the developed areas (i.e., in areas between fairways or villas) is encouraged as it could provide feeding areas and cover for the Grenada Dove.

A comprehensive Grenada Dove Research Programme should be developed based on research outline in the Draft Grenada Dove Recovery Plan (1998). Initially, research should be focus on 1) determining factors that allow for the development of suitable Grenada Dove habitat and developing techniques to restore and manage this habitat, and 2) studying dispersal and movement patterns of Grenada Doves using radio telemetry and other appropriate techniques. Other research is outlined in Appendix XI.

7. FUTURE CONSIDERATIONS

Though beyond the scope of this study, the next steps for moving forward are key to the success of conservation efforts for the dove. In the near term, these steps include at least the following:

- The legal and jurisdictional authority of the new Grenada Dove Public Trust needs to be established very soon if it is to play a key role in important negotiations.
- The portions of Mt. Hartman to be protected as critical habitat need to be agreed upon by concerned parties, and the legal status of the land needs to be secured.
- All concerned parties need to commit to specific details of a dove recovery plan, including the designation of mitigation areas that will offset areas lost to development at Mt. Hartman.
- Pledges of financial support for the recovery plan must be made.

Appendix 9. NGO Letter to Government of Grenada for protection of Beausejour & response from the Office of the Prime Minister

AMERICAN BIRD CONSERVANCY – BIRDLIFE INTERNATIONAL
CONSERVATION INTERNATIONAL – RARE – SOCIETY FOR THE CONSERVATION AND STUDY OF CARIBBEAN BIRDS - DAVID BLOCKSTEIN (Grenada Dove researcher) - STANLEY TEMPLE (UNIVERSITY OF WISCONSIN)

The Hon. Keith Mitchell, Ph.D.
Prime Minister
Government of Grenada
Ministerial Complex, Sixth Floor,
St. Georges
Grenada, West Indies

20 December 2007

RE: Conservation of the Grenada Dove at Beauséjour/Grenville Vale

Dear Prime Minister,

On behalf of scientists, conservationists and other citizens around the world concerned for the Grenada Dove, we write to express our pleasure and support for the significant progress that is being made by the Government of Grenada and the development partners at Mt. Hartman Estate and National Park. We understand that among the many important actions being undertaken to ensure protection of the Grenada Dove, the Government of Grenada is considering the creation of a new national park in the Beauséjour/Grenville Vale area. We would like to express our strong support for this critical step. Our support stems from the Grenada Dove's global importance as one of the world's rarest birds and the fact that dove habitat will be lost at the Four Seasons Resort and Private Residences proposed for Mt. Hartman, home of Mt. Hartman National Park and the most important single population of Grenada's national bird.

For over a year, the planning process for the resort has generated a great deal of concern among scientists, conservationists, and others over the fate of the Grenada Dove should the resort project go ahead in its original configuration. In recent months, thanks to constructive interaction among all stakeholders, a development plan that is less likely to cause lasting harm to the dove is emerging. However, there is still work to do to ensure that the project is a win-win for conservation and development interests.

The revised development plan and reconfiguration of the Mt Hartman National Park presented by Cinnamon 88 and approved by the National Parks Advisory Council maintains the area protected for the dove at approximately 155 acres. In addition, the new proposed park will protect more of the core area important for the dove and do so in a nearly contiguous block. However, the development proposal will still result in the loss of 20% of all of Mt Hartman's active dove territories, a highly significant loss for a species with such a small global population. Furthermore, while the establishment of the newly reconfigured protected area at Mt. Hartman may help preserve the dove population there in the midst of the development project, there is no assurance of this. Therefore, it is particularly important to protect additional locations where Grenada Doves are found to ensure that the degree of protection afforded to the dove is not diminished.

1

Mt. Hartman is the core habitat of the Grenada Dove and harbors the most significant and important population. As such it is irreplaceable. However, long-term conservation of the dove and meeting the recovery objectives for the species also depend on protecting additional sites. The Beauséjour/Grenville Vale area is therefore a high priority for official government protection. Formal protection of Beauséjour/Grenville Vale will serve to mitigate losses at Mt. Hartman, provide a significant and extremely important secondary population center for the dove, and provide opportunities for further increases in the overall dove population.

In conclusion, we would like to again express our strong support for the designation of a national park at Beauséjour/Grenville Vale to conserve the area's significant dove population, and we applaud the steps that the Government of Grenada is already taking to make this a reality. If there are ways that we can assist your efforts or otherwise lend further support to them, we hope that you will not hesitate to contact us.

Respectfully Yours,

Dr. George H. Fenwick
President
American Bird Conservancy

Dr. Michael Rands
Director and Chief Executive
BirdLife International

Dr. Claude Gascon
Executive Vice President, Programs and Science
Conservation International

Dale M. Galvin
Chief Operating Officer
RARE

Andrew Dobson
President
Society for the Conservation and Study of Caribbean Birds

Dr. David E. Blockstein
Grenada Dove researcher
Chair, The Ornithological Council
Senior Scientist, National Council for Science and the Environment
(organizations listed for identification purposes only)

Dr. Stanley A. Temple
Beers-Bascom Professor Emeritus in Conservation
University of Wisconsin-Madison

CC. **Ms. Jennifer Ellard**, Advisor to the Prime Minister and Minister of Finance, ethical.ideas@gmail.com
Mr. Alan Joseph, Chief Forestry Officer, Forestry and National Parks Department, a.joseph@grenadaforestry.com
Mr. Dwight Horsford, Chairman, National Parks Advisory Council, dwighthorsford@hotmail.com

PRIME MINISTER
GRENADA

January 3, 2008

American Bird Conservancy

Birdlife International

Conservation International

Society for the Conservation and Study of Caribbean Birds

David Blockstien

Stanley Temple

Rare

Dear Esteemed Scientists,

I was very pleased to receive the letter dated December 20th, 2007 which was collectively signed by so many experts in the field of birds and endangered species. It goes without question that the protection of our environment, is no longer an issue which can be perceived to be a philanthropic gesture for the sake of a dove, or any other endangered species. As climate change and other environmental pressures mount at an alarming pace. These issues are clearly showing us that the preserving the integrity of our environment is also preserving the integrity of our life support systems.

The Government of Grenada has been very actively involved in environmental protection; particularly as global consciousness has been rising regarding this very important issue. As the Chairman of the Alliance of Small Island States, I have championed the interests of our vulnerable nations with respect to Climate Change. Our Minister of the Environment, Honourable Minister David-Antoine, has championed the issue of protected areas, and most certainly let Grenada step up as leaders by exceeding the international community with our commitments to protect 20% of our Marine and Terrestrial Areas by 2020; which I am sure you are aware greatly exceeded the minimum targets set by the U.N. Convention on Biological Diversity.

MINISTERIAL COMPLEX, BOTANICAL GARDENS, TANTEEN, ST.GEORGE'S, GRENADA, W.I.
TEL: (473) 440 2383; FAX: (473) 440 4116
e-mail: pmoffice@gov.gd

In addition to this, our Minister of Tourism, Honourable Minister Modeste-Curwen, has championed the development of environmentally sustainable tourism and community based tourism also, and we have many ambitious plans to come in this regard. Our environmental leadership continues with our efforts to determine the win-win path for environment and development, as we have maintained since the early days of the proposed development in the Mt. Hartman Estate.

We are greatly pleased to see that our collaborative efforts have led us towards what we believe will soon be internationally recognized as 'best-practice' in development; and we are equally pleased to see how strongly you support our initiative to extend our conservation plans for the Grenada Dove to the Beausejour area.

While we have taken our own initiative to plan for the protection of more habitats for the Grenada Dove in the Beausejour area, we also recognize that doing so will not come without compromise and significant costs. Since being made aware of the biological significance of the area, we have had to revisit our previous land use plans, which included among other things, the development of low income housing through our Human Settlement Programme.

Based on preliminary field work done in the area, it appears that the Habitat best suited for the Grenada Dove is also the same land that is best suited for housing development. There is land available elsewhere on the estate, but the expense of the site works (roads, drainage, construction costs) will be significantly higher. Thus resolving this cost-based challenge is our principle concern at this time.

I would therefore like to extend a challenge to you, to employ your lobbying capacity to help us raise awareness about the importance of the Grenada Dove, the efforts the Government of Grenada has undertaken to protect the Dove (particularly in a post-disaster environment) and perhaps through our collective efforts, we can raise the funds needed to off-set the cost of re-locating the low income housing to another part of the estate so that both humans and birds have access to the habitat they require.

Sincerely,

KEITH C. MITCHELL

PRIME MINISTER

Appendix 10. Secondary road and satellite image of wetlands for protection

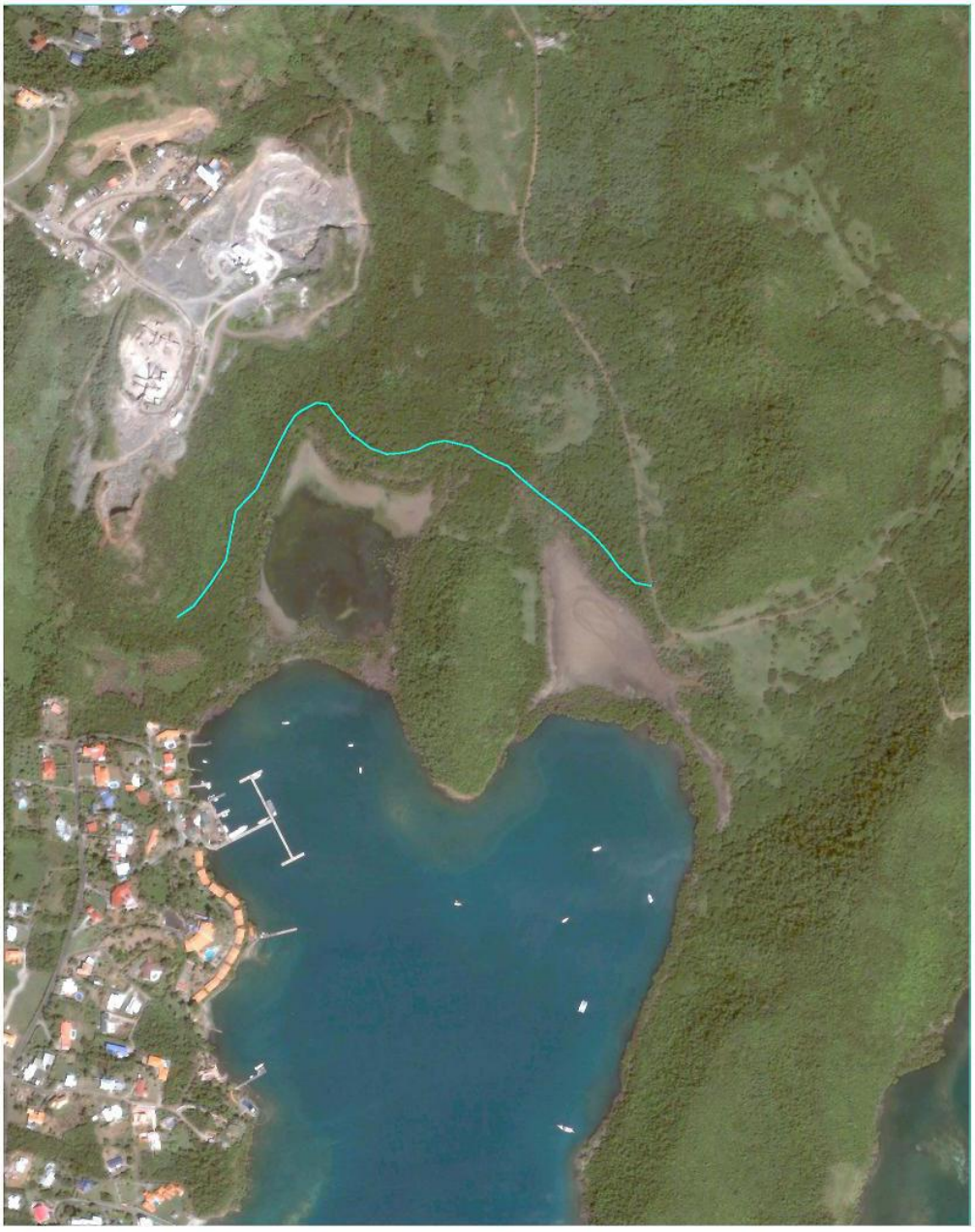


Figure 1. Revised and approved route for secondary road for swamp and mangrove conservation (June 2008).

Appendix 11. Wetland and bird related best practice recommendations

-----Original Message-----
From: Lisa Sorenson [mailto:lsoren@bu.edu]
Sent: Wednesday, June 18, 2008 11:04 AM
To: Darren Arekion
Cc: Bonnie Rusk; Martin Barriteau; Anthony Jeremiah; Michele Kading; David Wege; Michelle Minor; a.joseph@grenadaforestry.com
Subject: Thanks and follow-up notes

Greetings Darren,

It was a pleasure to meet you in Grenada last week. We were delighted that you, Richard, and Peter were able to attend the first day of our wetlands workshop and that we had the opportunity to meet with you on Saturday, as well as visit the mangrove and wetland sites around the development. We appreciated very much your desire to conserve the important mangroves and wetland areas of Mt. Hartman and are really thrilled that you have moved the road and part of the golf course to do this. Thanks also for considering our suggestions for minimizing environmental impacts and enhancing the golf course ponds for birds. I am confident that with careful design and proper management, the ponds can supply food and serve as a much-needed source of fresh water for many resident and migratory birds. Retaining the mangroves and wetland/mudflat areas will attract other kinds of birds (e.g., shorebirds, seabirds) that depend on this kind of habitat and the mangroves and wetlands will provide numerous benefits such as coastal protection from storms and hurricanes, trapping of sediments, flood water storage, water purification, nursery for fisheries, and so forth. Overall, the diversity of habitats on and around the estate—dry forest, and fresh, brackish and salt water ponds—will attract a diversity of birds and other wildlife. I am confident that you can develop the property into a nature sanctuary that highlights the natural beauty of Grenada, while also conserving important and valuable habitats.

I've thought of a few additional points that might be helpful:

1) Plant native emergent aquatic plants around the pond edges (e.g., reeds, grasses and sedges, water lettuce, duck-weed, water lilies, possibly a small area of cattail, but need to be careful with this). These plants will provide cover and food for birds (seeds) and a habitat for above and below water insects and aquatic invertebrates (e.g., dragonflies, damselflies, midges) upon which birds feed. Some shrubs around the pond edges will provide additional habitat (for shade, roosting, nesting, food). Pond edge and overwater vegetation will be used for nesting by some species (e.g., ducks, Pied-billed Grebe, Least Grebe, Common Moorhen). Do not plant introduced invasive species such as purple loosestrife and water hyacinth - these will "take over" the pond and are nearly impossible to control.

2) Try to include one or more islands on the golf course ponds as these provide a relatively safe place for birds to roost and nest; landscape with a variety of shrubs and several trees (see attached photo of nesting Yellow-crowned Night Heron on an island at the Grenadian Rex Resort Ponds).

3) As much as possible, landscape with native plants, especially those that are known food sources for resident and migratory birds (e.g., flowering plants for nectar feeding birds (bananaquits and hummingbirds), fruiting trees, etc.). Consult with Forestry (e.g., Anthony Jeremiah) for a list of tree species that are good for wildlife.

4) I mentioned the importance of designing the ponds with shallow water edges to provide habitat for wading and other birds that feed in shallow water. The ponds will be much more productive if they have a maximum depth of 4 to 5 feet (the maximum depth that sunlight penetrates).

5) I hope that you will continue to press for saving as much of the fringe mangroves along the hotel front where you mentioned a long beach will be created. As we mentioned, these mangroves are vitally important in protecting the seagrass beds and nearby coral reefs from sedimentation, as well as protecting the coastline and providing habitat for commercial fisheries (think continuation of your wonderful nature trail with kayak tours along the coast to see the oysters growing on the mangrove roots, birds, snorkeling in the seagrass beds and reefs, etc.). If, however, it's necessary that the fringe mangroves are destroyed in this area to bring in sand, I recommend doing as late as possible (i.e., after construction and landscaping has been completed). The mangrove fringe will provide protection to the seagrass beds and coral reefs from sediment run-off during the long construction period when there will undoubtedly be a lot of bare soil and sediment runoff.

6) We are really pleased that you are willing to mitigate by replanting and/or restoring an area twice or more times as large as the areas destroyed. I suggest you consult with Martin Barriteau, Forestry, and Fisheries and also Dr. Gregg Moore, mangrove ecologist (Univ. of New Hampshire), about the best places to replant mangroves and/or restore wetlands. There are many mangrove/wetland areas around the islands that were damaged by the hurricanes and also badly degraded from pollution and dumping, that could really benefit from restoration efforts. Gregg Moore's contact info: gregg.moore@unh.edu. He has conducted wetland assessments and mangrove replanting projects in Grenada and the Grenadines.

7) You were concerned about the visual appeal of the mudflat to the residents and visitors of the resort. I think that education is the answer: if the ecology and value of the mudflat can be described in an interpretive sign along your nature trail, that it will be appreciated. Interpretive signs, boardwalks and viewing platforms will really enhance the area for wildlife viewing (i.e., creating "Watchable Wildlife Ponds") and increase the appreciation of the birds and different habitats by residents and visitors alike e.g., as the in the examples on Little Cayman and Cayman Brac in the brochures I left you.

8) Do pre- and post-surveys of the extent, abundance and health of the seagrass beds, fish, invertebrate life, and coral reefs in the area by the proposed long beach and possibly other areas.

9) Use of golf course ponds as waste water treatment ponds: As I mentioned during our meeting, a few years ago I worked with Sun International Development Limited to provide information and recommendations on redesigning the golf course on Paradise Island (Paradise Island Eastern End Re-Development) to provide quality habitat for birds (ponds and upland vegetation). The new ponds (and the old) are used for waste water treatment for Paradise Island, providing nutrient rich water, which in turn encourages an abundance of aquatic macroinvertebrates upon which many waterbirds feed. My contact at the time was Mr. Richard Watkins, VP – Engineering and Technical Services, Sun International Development Limited, P.O. Box N-4777, Nassau, Bahamas.

Michele can also provide contact information on the person that designed Oak Hammock Marsh's waste water treatment ponds.

10) Be sure to consult with a hydrologist to plan for the design and management of the golf course ponds and nearby wetlands so that appropriate control structures are in place to manage water levels and to be sure you understand as much as possible the flow of water in the area and what might happen under different conditions (drought vs. wet periods, storms, hurricanes, etc.) in the system.

11) Please find attached a "Global Warming and the Caribbean" Fact Sheet. I suggest that you plan for sea level rise and increased frequency and intensity of severe weather (storms and hurricanes, drought) in the coming years!

Useful Wetland References and Resources:

Barbier, E. B., Acreman, M. and D. Knowles. 1997. Economic Valuation of Wetlands: A Guide for Policy Makers and Planners. Ramsar Convention Bureau, Gland, Switzerland.

Firehock, K., Graff, L., Middleton, J. V., Starinchak, K.D., and C. Williams. 1998. Handbook for Wetlands Conservation and Sustainability. Izaak Walton League of America, Gaithersburg, Maryland.

Hammer, D. A., ed., 1989. Constructed Wetlands for Wastewater Treatment. Lewis Publishers, Inc., Chelsea, MI, 831 pp.

Hammer, D.A. and R. H. Kadlec. 1983. Design Principles for Wetland Treatment Systems, U.S. Environmental Protection Agency, Ada, Oklahoma, EPA-600/2-83-26, 244 pp.

Hickman, S.C. and V.J. Mosca. 1991. Improving Habitat Quality for Migratory Waterfowl and Nesting Birds: Assessing the Effectiveness of the Des Plaines River Wetlands Demonstration Project. Technical Paper no. 1, Wetlands Research, Inc., Chicago, IL, 13 pp.

Knight, R.L. 1990. Wetland Systems, in "Natural Systems for Wastewater Treatment, Manual of Practice FD-16", Water Pollution Control federation, Alexandria, VA, pp. 211-260.

Sutton, A.H., Sorenson, L.G., and M.A. Keeley. 2004. Wondrous West Indian Wetlands: Teachers' Resource Book. West Indian Whistling-Duck Working Group of the Society for the Conservation and Study of Caribbean Birds, Boston, MA.

Wilhelm, M., Lawry, S.R., and D.D. Hardy. 1989. Creation and management of wetlands using municipal wastewater in northern Arizona: a status report. In "Constructed Wetlands for Wastewater Treatment", Edited by D. A. Hammer, Lewis Publishers, Inc. Chelsea, MI, pp. 179-185.

Okay - that's all I have for now. Michele may have additional suggestions. Thanks again for your interest in doing all you can to conserve the natural habitats of the Mt. Hartman Estate for the Grenada Dove and other birds and wildlife and for the people of Grenada. I'd be happy to provide additional feedback and help as your plans develop.

With very best wishes,

- Lisa

****

Lisa G. Sorenson, Ph.D.
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www.scscb.org

Appendix 12. Mt. Hartman ownership controversy

The Saga of Hog Island and Mt. Hartman

By Sandra C.A. Ferguson

Citizens in Defence of Grenada's Lands and Heritage

April 12th, 2009

Citizens in Defence of Grenada's Lands and Heritage has been keeping an eye on developments regarding the proposed Cinnamon 88 Four Seasons development involving the Hog Island and Mt. Hartman properties. The group is particularly concerned that Hog Island, the property of the Theodore family has been occupied and to date the family is yet to be compensated for their island, property that has been in the family for four generations. It all began with James Theodore, original owner and title deed holder of the Hog Island property.

The following is the information that the CDGLH has been able to put together in respect of the ownership of Hog Island and the various transactions/actions of the Government of Grenada re the Mt-Hartman/Hog Island properties.

1. Hog Island:

1.1. Title Deed:

This island was named for the wild pigs that abounded on the island. Title deed resided in James Theodore who farmed extensively on the island. This continued with his children and grandchildren through four generations.

1.2. Declaration of Acquisition of Land:

In 1979, acting on the advice of Cabinet (of Sir Eric Gairy), the Governor-General made a declaration of acquisition of Hog Island **for the purpose of national security, customs and tourist development.** Notice of the acquisition was given in two consecutive publications of the Government Gazette as is required by law. The first publication was in the Government Gazette of March 2nd, 1979, No.11. The second publication was in the Government Gazette of March 9th, 1979, No.13. Both publications acknowledged that **Hog Island was owned by or under the control of Neville Theodore, Wilfred Theodore and others.** The persons named were the children of the original owner, James Theodore.

The government never assumed occupation of the island nor was the family compensated. Since the 1979 acquisition, they have continued to have unencumbered use and occupation of the land.

1.3. Hog Island Designated a National Landmark, National Parks and Protected Areas System:

In 1988, the *OAS Plan and Policy for a System of National Parks and Protected Areas* identified Hog Island, as part of the National Parks and Protected Areas systems - a **national landmark** whose features were to be preserved and held in trust for the enjoyment and use of future generations. Land use was identified as grazing and recreation and the ***Theodore family*** was named as the owner(s) of the Hog Island property.

1.4. Injunction brought by Lewis Theodore:

During the period 1999-2001, the government of the day announced a Ritz-Carlton project involving the Mt.-Hartman-Hog Island properties. Lewis Theodore (now deceased) successfully brought an injunction against the government. (The CDGLH is trying to get the details of this injunction.)

1.5. Letter of June 23rd, 2004 from Permanent Secretary, Ministry of Finance re Lewis Theodore et al – Hog Island: In a letter addressed to Ms. Celia Edwards, attorney-at-law re the matter Lewis Theodore et al – Hog Island, Permanent Secretary, Timothy Antoine confirmed that "**Government is prepared to settle this matter for the sum of $5 million and costs of $75,000".** The letter also advised that "arrangements are being made for the requisite funding**".**

This letter suggests an acknowledgement by the Government of Grenada of the Theodore family's claim to the island**.**

1.6. Land Acquisition Ordinance:

According to the Grenada's Land Acquisition Ordinance, government can only acquire private land for a PUBLIC PURPOSE and must pay adequate compensation, within a reasonable period, to the owner. This compensation must be based on the market value of the property.

If government does not use the land for the purpose for which it was acquired, the property must revert back to the owners. If the land is not used within a specified period, it must revert back to the owners.

Government cannot sell land it has been acquired for a public purpose to private interest.

1.7. Hog Island and the Cinnamon 88 Four Seasons Development:
It is instructive to note the compensation offered to the Theodore family by letter of June 23rd, 2004 – EC$5million and $75,000 for cost. In 2008, Government conveyed Hog Island to the Mt. Hartman & Hog Island Estate Ltd. for USD6 million who has since conveyed the property to Cinnamon 88.

The website www.mounthartmangrenada.com provides information on the proposed development. Private residences are being offered for sale on Hog Island – villas with gardens of ¾ acres to 1.2 acres. **Lots are being offered at USD2 million and villas offered at USD4.5 million.** Where is the justice for the Theodore family?!?!

The website also provides information on the tqxes and concessions offered to purchases of property.

The website, www.cinnamon88.com advises that 12 lots have already been sold, including 3 lots to Goldman Sachs executives – that is USD24 million to Cinnamon 88 (Grenada) Developments Limited.

1.7.1 **Tax Revenue Foregone by Government:**

The following table summarizes the tax revenue to be foregone by the Government of Grenada based on the tax concession given to this "development"

Type of Tax	*Tax Exemption Period*	*Tax Income Foregone per lot/per 12 lots*
Stamp Duty(1%)	Exempt	USD25,000/USD$300,000
Alien Holding Licence (10%)	To 2020	USD0.25m/USD3.0m
Property Transfer Tax(15%)/first EC20,000 exempt	Prior to 01/01/2020 Resale of 100 units exempt	Estimated USD 0.375m/USD4.5m
Property Tax	Exempt to 2013	
	01/01/2013 -10/01/2018 – EC $12,000 per unit	
	01/01/2018-31/12/2022 – EC$16,000 per unit	
	01/01/2023 -31/12/2027 - EC$25,000 per unit	
	01/01/28-31/12/32 – EC$35,000	
	01/01/33 – Full tax applicable	

Where are the tax revenues for the country, particularly when a **significant area of the country will be alienated and sustainable livelihoods and live**s **disrupted?**

2. Hog Island – Mt. Hartman Estate:
It is instructive to recall that prior to the current Cinnamon 88 Four Seasons Development under consideration, the same properties also featured in the aborted Ritz-Carlton initiative**.** The following chronicles the transactions/actions in respect of these two properties by the Government of Grenada and others.

2.1. Deed of Conveyance, 4994/1999 of December 21st, 1999 – Government of Grenada to Intercontinenetal Grenada Ltd.:

- Deed of Conveyance, 4994/1999 was made on December 21st, 1999 between the Government of Grenada and Intercontinenetal Grenada Ltd.
- This conveyance:
  (i) conveyed Hog Island (81 ac.11 pls) and Mt. Hartman, 240 acres to Intercontinental Grenada for the consideration of **USD 7 million**.
  (ii) gave rights of way and other rights through the areas known as the **"Dove Sanctuary"** to Intercontinental Grenada
  (iii) Agreed that Intercontinental Grenada would have first right to buy the property known as the Dove Sanctuary, should the Government of Grenada decide to alienate its interest in this property.
- The property was conveyed for the purpose of the development and operation of the Project:
  (i) a luxury hotel containing at least two hundred guest rooms
  (ii) a golf course containing at least 18 holes
  (iii) a marina containing at least 10 slips
  (iv) so many residential units and amenities as decided by Intercontinental.
- Parties to the agreement were:
  (i) Governor-General. Sir Daniel Williams on behalf of the Government of Grenada
  (ii) Ekram K. Miller on behalf of Intercontinental Grnada Limited.

  It was witnessed by Wynette Baker on behalf of Intercontinental Grenada.
- The conveyance was prepared by Danny Williams Co. and perused by Keith Friday on behalf of the Government of Grenada.
- It was registered in the Deeds & lands Registry on December 30th, 1999 – Liber 29-99 pg.975

2.2. Deed of Mortgage, 4995/1999 of December 21st, 1999 – Intercontinental Grenada Ltd to Government of Grenada :

- Deed of Mortgage, 4995/1999 was made on December 21st, 1999 between Intercontinenetal Grenada Ltd. and the Government of Grenada.
- According to this deed, the mortgagee, the Government of Grenada agreed to sell property to ICG for the price of USD 7 million and also agreed that payment of USD 3 million should be deferred.
- Intercontinental Grenada conveyed Hog Island and Mt. Hartman (240 acres) to the Government of Grenada as security for the interest-free repayment of the USD 3 million.
- Parties to the agreement were:
  (i) Governor-General, Sir Daniel Williams for the Government of Grenada
  (ii) Ekram J. Miller on behalf of Intercontinental Grenada Limited.
- It was witnessed by Wynette Baker on behalf of Intercontinental.
- The Deed of Mortgage was prepared by Danny Williams & Co. and perused by Keith Friday on behalf of the Government of Grenada.
- It was registered in Deeds & Lands Registry on December 30th, 1999, Liber-29-99, pg. 984.

2.3. Judgment of October 22nd, 2004, Queen's Bench Division Commercial Court, Royals Courts of Justice – Fortis Bank vs. Intercontinental Grenada and the Government of Grenada- delivered by Justice Creswell (as reported in *Grenada Today*, issue of January 15th, 2005, *Grenada in Trouble Again!!!)*, :

- Fortis Bank, a Belgian bank, made application for summary judgment in relation to a credit facility.
- The first and second defendants were the borrower, Intercontinental Grenada and the guarantor, Government of Grenada. Grenada was not represented at the hearing.
- The Credit agreement of December 19th, 2000 was a financing arrangement for preliminary investigations into the building of a luxury Ritz-Carlton Hotel Complex on Mt. Hartman-Hog Island. It was to fund various studies by a Belgian company N.V. Besix S.A.
- ICG claimed that its non-payment to the bank was caused by Grenada's refusal to continue the project with ICG.
- The Government of Grenada, through its Minister of Finance was described as the guarantor.
- The guarantee was signed by Minister of Finance, Anthony Boatswain, on behalf of the Government of Grenada.
- Grenada guaranteed to the bank all payments by the ICG under the Credit Agreement.

- The judge acknowledged that a dispute between Grenada and ICG was the subject of London arbitration but ruled in favour of Fortis Bank's application against ICG and the government of Grenada.
- Judgment in the sum of USD 6 ,348,598 was ordered against the Government of Grenada and Intercontinental Grenada on October 22nd, 2004.

2.4. **Letter of March 28th, 2005 from Miles & Stockbridge P.C**.(reported in *Grenada Today*, issue of April 2nd, 2005, *Who Really Owns Mt. Hartman*):
This letter made the following claims:

- The letter claimed to be from legal counsel providing services for Intercontinental and Ekram Miller.
- That project experienced problems because Grenada's credit rating had deteriorated during the course of the project and Grenada became unable to provide a government guarantee that met the requirements of Fortis Bank. As a result the bank ceased funding the loan.
- Legal title to the land for the project is still owned by ICG.

2.5. Deed of Conveyance 2094/2008 of 28th, Jan. 2008 – Government of Grenada to Mount Hartman & Hog island Estate Limited:

- Deed of Conveyance, 2094/2008 was made on the 28th, January 2008 between the Government of Grenada, the Vendor, and between the Mt. Hartman & Hog Island Estate Ltd., the Purchaser.
- It conveyed **Hog Island** to the Mount Hartman & Hog Island Estate Limited **for the consideration of payment of USD 6 million**.
- **Parties to the agreement were**:
  (i) Governor-General, Sir Daniel Williams, on behalf of the Government of Grenada
  (ii) Mike Pemberton and Robin Paterson on behalf of the Mt. Hartman & Hog Island Estate Ltd
- This conveyance also makes reference to the execution of a contract dated June 1st, 2007 between representatives of the Vendor and the Purchaser, for the sale of lots of land comprising:
  (i) Hog Island, containing 81 acres, 11 poles
  (ii) a major part of Mt. Hartman Esate
  (iii) the Quarry
- The second schedule made provisions for specific zonification to govern the terms and conditions of use (including the beaches, shores, surrounding waters) of Hog Island.
- The conveyance was prepared by Danny Williams and Co. It is unclear who perused the document on behalf of the Government of Grenada.
- The conveyance was registered in the Deeds & Lands Registry on April 30th, 2008. Liber 15-2008, pg.905.

2.6. Deed of Mortgage, 5420/2008 of July 7th, 2008 – Cinnamon 88(Grenada) Developments Limited to Government of Grenada:

- Deed of Mortgage, 5420/2008 was made on July 7th, 2008 between Cinnamon 88 (Grenada) Developments Limited, the Mortgagor, and H.E. Sir Daniel Williams on behalf of the State of Grenada, the Mortgagee.
- This Deed of Mortgage makes reference to a **frame contract** between the Government of Grenada and the Mortgagor (i.e. Cinnamon 88 Grenada Limited) made on June 1st, 2007 and its subsequent amendments dated 25th January, 2008 and 1st July, 2008.
  Under the frame contract, the Mortgagee, i.e. Sir Daniel Williams, on behalf of the Government of Grenada, agreed :
  (i) to sell the Property to the Mortgagor, i.e., Cinnamon 88 (Grenada) Developments Limited at a price of USD20,75 million
  (ii) with the mortgagor that the sum of USD6 million shall be paid prior to the signature of the conveyance
  (iii) the unpaid balance of USD14.75 million should be secured by way of mortgage to be paid on or before March 31st, 2010 and accruing interest on the balance due at the rate of 6 percent per annum.
- By this Deed of Mortgage, Cinnamon 88 conveyed to the Government of Grenada **two lots of land totaling 284 acres 28 poles of the area known as Mt. Hartman Estate** to securing the mortgage re the unpaid balance of USD14.75million.
- The property under mortgage was made up of two lots:
  - Lot A measuring 274 acres
  - Lot B measuring 10 acres 28 poles – land leased to Bernard Osborne Blanco (935/1995).
- **Parties to the agreement were:**
  (i) Governor-General**,** Sir Daniel Williams on behalf of the Government of Grenada and
  (ii) Mike Pemberton and Robin Paterson of Cinnamon 88 Grenada Limited and witnessed by Mark Thornley on behalf of Cinnamon 88.

- The Deed of Mortgage was prepared by the Ministry of Legal Affairs and perused by Danny Williams & Co. Ltd.
- The conveyance was registered in the Deeds & Lands Registry on Novemebr 4th, 2008- Liber 40-2008, pg. 914.

2.7. Deed of Conveyance, 5421/2008 of 7th July, 2008 – Government of Grenada to Cinnamon 88 (Grenada) Developments Limited:

- Deed of Conveyance, 5421/2008 was made on 7th July, 2008 between the Government of Grenada and Cinnamon 88 (Grenada) Developments Limited.
- It conveyed that property known as the Quarry, 27.6 acres, to Cinnamon 88 (Grenada) Developments Limited for the consideration of payment, USD2.3million.
- This conveyance also makes reference to:
  (i) the execution of a frame contract dated 1st June, 2007
  (ii) a corresponding amendment 01 on 25th, January, 2008
  (iii) a corresponding amendment 02 on 1st July, 2008

  This contract and amendments relate to the Quarry, Mt. Hartman Estate and Hog Island.
- **Pursuant to the frame contract**, the purchaser and vendor agreed for the sale of the Quarry for a sum of USD 2.3 million. The Quarry was to be subject to a mortgage in favour of the Government of Grenada to secure a portion of the purchase monies.
- The second schedule notes the following in respect of Use of the Property:
  (i) The property shall be used only for the development, operation and exploitation of a tourist, vacation, residential, recreational, cultural and event resort
  (ii) The use of the Property shall be governed by specific zonification
  (iii) Provided full payment of the purchase price for the property is give, the purchasr shall be free to divide, sub-divide and re-divide the property……..
  (iv) Provided full payment of the purchase price for the property is given, the purchaser shall be free to sell and/or lease the property in total or in part and/or to dispose of it in total or in part at its discretion…….
- Parties to the agreement were:
  (i) H.E. Sir Daniel Williams on behalf of the Government of Grenada
  (ii) Mike Pemberton and Robin Paterson on behalf of Cinnamon 88 (Grenada) Developments Limited.
- It was witnessed by Mark Thornley on behalf on Cinnamon 88.
- The conveyance was prepared by Danny Williams & Co. Ltd. and perused by the Ministry of Legal Affairs.
- It was registered in the Deeds & Lands Registry on November 5th, 2008, Liber 40-2008, pg. 926.

2.8. Deed of Conveyance,4407 /2008 of 8th July, 2008 – Mt. Harman & Hog Island Estate Ltd. to Cinnamon 88 (Grenada) Developments Limited:

- Deed of Conveyance, 4407/2008 was made on 8th July, 2008 between the Mt. Harman & Hog Island Estate Ltd. and Cinnamon 88 (Grenada) Developments Limited.
- It conveyed Hog Island (81 ac. 11 pls,) to Cinnamon 88 (Grenada) Developments Limited for the price of USD 8.3 million.
- This conveyance also released the vendor, Mt. Hartman & Hog Island Estate Ltd. from the restriction in Clause 4 , Schedule 2,(which stated that the property could not be sold in total but in part), permitting sale to Cinnamon 88
- *Clause 4, Schedule 2 of the Deed of Conveyance 2094/2008 of 28th, Jan. 2008* – (Government of Grenada to Mount Hartman & Hog island Estate Limited) stated as follows:

  *"**The Purchaser shall be free to sell and or lease the Property in part and/or dispose of it in part at its discretion subject to the aforesaid zonification** and use of the Property subject to the rights of the vendor and/or third parties indicated herein and subject to the terms and conditions of the present indenture and the said agreement"*
- Parties to the agreement were:
  (i) Mike Pemberton and Robin Paterson of Mr. Hartman & Hog Island Estate ltd.
  (ii) Mike Pemberton and Robin Paterson of Cinnamon 88 (Grenada) Developments Ltd.
- It was witnessed by Mark Thornley.
- The conveyance was prepared by Grant Joseph & Co. and perused by the Attorney-General's Chambers.
- The conveyance was registered in the Deeds & Lands Registry on September 4th, 2008- Liber 33-2008, pg.490

3. Answers Required:

To a simple mind, these transactions are all mind-boggling. The people of Grenada are awaiting clarification and responses from those charged with minding the people's business on the following:

- If property was conveyed to Intercontinental Grenada for a consideration of USD7 million and the property was mortgaged back to the Government of Grenada for USD 3 million, **how is the USD4 million accounted for?**
- What was the judge's decision in respect of the arbitration between the Government of Grenada and Intercontinental**?**
- What was the basis for the dispute between Intercontinental and the Government of Grenada which resulted in the matter being taken to arbitration in London**?**
- How much did this matter cost the government in legal fees? Who represented Grenada at the hearing? Who paid the legal fees?
- What is the status in regards of the judgment against the Government of Grenada in favour of Fortis Bank?
- What is this **Frame Contract of June 1st, 2007** between the Government of Grenada and Cinnamon 88 (Grenada) Developments Ltd. to sell Mt. Hartman Estate, Hog Island and the Quarry for consideration of USD20.75 m?
- What were the two subsequent amendments of January 25th, 2008 and July 1st, 2008 respectively?
- For how much have the properties actually been sold ?
- How much money has been accounted for in respect of the sale of those properties – Hog Island, the Quarry and the Mt. Hartman Estate?
- What is the role of the Mt. Hartman – Hog Island Estate Ltd. which is one and the same as Cinnamon 88 (Grenada) Developments Ltd.?
- Has the sale by Mt. Hartman – Hog Island Estate Ltd. to Cinnamon 88 (Grenada) Ltd. released Cinnamon 88 from any covenants and restrictions as it relates to zonification?
- What are the implications of any release from convenants and restrictions for areas such as the Dove Sanctuary and the Marine Park Area?
- If the Government of Grenada holds the Deed of Mortgage on the properties known as Mt. Hartman and the Quarry, does this mean that in fact, these properties belong to the government?
- Has Cinnamon 88 made any payments in respect of clearing these mortgage amounts?
- When will the Theodore family be paid for Hog Island and how much?
- Why was the law firm of Danny Williams & co. preparing conveyances on behalf of the Government of Grenada? Isn't this the responsibility of the Ministry of Legal Affairs?
- Who paid Danny Williams & Co. for this work and how much was paid?

THE GRENDIAN PEOPLE WANT ANSWERS!

THE GRENADIAN PEOPLE DESERVE ANSWERS!!

Appendix 13. Preliminary list of contacts for Capital 88 and Grenada

24 May 2007

* Information gathered by David Wege with input from:
  - ·Kristin McLaughlin, GEF Liaison Officer, UNEP, Washington Office
  - ·Brook Wilkinson, Associate Consumer News Editor, Conde Nast Traveller
  - ·Oliver Hillel, Programme Officer, Secretariat for the Convention on Biological Diversity
  - ·Ronald Sanabria, Sustainable Tourism Director, Rainforest Alliance
  - ·Lynn Gape, Deputy Executive Director, Bahamas National Trust
  - ·Mike Hartman, Tiamo Resorts (Bahamas)

Sustainable Developers/Resort Managers

- Fairmont resorts: www.fairmont.com -- Contact Michelle White (michelle.white@fairmont.com)
- Frank Rainieri, shareholder in the Punta Cana resort (www.puntacana.com/) in Dominican Republic. Frank was at the forefront of combining sustainable resort/protected area development in the Dominican Republic.*
- Jose Koechlin, owner of several hotels and operators in Peru, notably Machu Picchu Pueblo Hotel and Inkaterra (www.inkaterra.com/). He recently got an IFC grant and loan for further developing his property and its outreach component. *
- Loreto Bay Company: www.Loretobay.com - 866-956-7386

Architects/Planners/Designers of Sustainable Resorts

- Trust for Sustainable Development: www.tsd.ca -- Contact David Butterfield
- Tom Horton, Canopy Development http://www.canopydevelopment.com/
- Keith Bishop, Islands By Design, Nassau www.islandsbydesign.com
- Mike Hartman, owner of Tiamo Resorts (www.tiamoresorts.com). Just partnered as a consultant with well established Architect firm (OBMI, www.obmi.com in the Caribbean for 80 years) to promote and utilize sustainable development in the tourism industry of the region. OBMI contact is Bill Bissell. Tiamo is a small lodge but has done pioneering work in energy use and community involvement.
- Hitesh Mehta (Landscape Architect) from Edward Stone & Associates (EDSA, www.edsaplan.com) based in Florida. Mostly described as an ecolodge architect, but he's also involved in the Ritz project in the West Caicos Reserve
- David Andersen and Gail Andersen: The Andersen Group Architects, Ltd
- Zimmer Associates International: Robert Zimmer (danderson@zai-us.com)
- Architect Luis Bosoms, CEO of Grupo Plan El Tamarindo 116, Mexico City
- Architect Robert Zimmer: Zimmer Associates International 1 (505) 986-9019
- Bill Bissell: OBMI Architect firm www.obmi.com

Sustainable Golf Course Resources

- Audubon International: www.audubonintl.org/programs/acss/golf.htm -- Contact Ronald G. Dodson, President, (rdodson@audubonintl.org)
- Arnold Palmer Design Company: www.palmerdesign.com -- Contact Victoria Martz, Vice President information@palmerdesign.com
- Environmental Institute for Golf: www.eifg.org -- Website contains case studies and best practice guidelines at www.eifg.org/wildlife/default.asp*
- Jonathan Smith, CEO of Golf Environment Europe (http://www.golfenvironmenteurope.org/index.html) have done golf course work in the Indian Ocean and may be able to advise similarly for the Caribbean *

Sample golf courses

- Melia Playa Conchal Beach & Golf Resort, Costa Rica
- Pinehurst #8, Pinehurst, North Carolina
- Ocean Course, Kiawah Island, South Carolina
- Desert Willow, Palm Desert, Calif. (two courses, one tournament-quality)
- Read: “Greener Golf” http://news.nationalgeographic.com/news/2004/06/0625_040625_golfcourses.html

Sample resorts

- El Nido Resorts in the Philippines, also linked to a park www.elnidoresorts.com*
- Spring Island, South Carolina www.springisland.com (developed by Chaffin and Light)*
- Casuarina Beach Club (www.casuarina.com)
- Starwood Haciendas del Mundo Maya, QR, Mexico
- Lizard Island, Voyages Hotels and Resorts, Australia (www.voyages.com.au/)
- We also have a positive report about the new Four Seasons at Koh Samui Thailand, but no details as to why.

Appendix 14. Caribbean tourism and coastal zone environmental degradation

Although a relatively new phenomenon, tourism has become one of the world's largest industries in recent years. In 2005, international tourism arrivals reached over 800 million worldwide. In macroeconomic terms, 9 percent of global employment and ten percent of global economic activity is tourism related (Travel and Tourism 2006). Tourism is the largest industry in the world, accounting as it does, according to the WTTC, for 11.5% of world GDP and 12.5% of employment respectively. The Caribbean tourism accounts for approximately 3% of world tourism arrivals and has the largest proportion of people employed in (25%) and GDP gained from (29.6%) this sector compared to any other region in the world.

Tourism has become the dominant sector in Caribbean economies, generating one-fifth of all jobs and accounting for one-fourth of foreign exchange earnings (UNEP 1999(a)). In a number of Caribbean economies, tourism receipts account for more than 75% of total exports (Gardner 2003). This industry represents 31.1 per cent of the Gross Domestic Product of the Caribbean region and provides nearly three million jobs[24]. According to recent estimates, tourism also accounts for over 15 percent of the region's employment and almost 6 percent of its Gross Domestic Product (GDP) (Duval 2004b, Goodwin 2008). Caribbean tourism is growing faster than the global industry average (Duval 2004). The modern tourism industry is now one of the most important economic drivers in the Caribbean (Duval and Wilkinson 2004).

The tourism industry also has a substantial environmental impact. Tourism development is associated with environmental problems like deforestation, soil or beach erosion, and coral ecosystem destruction, increased air and water pollution, as well as inadequate solid waste management (Baver and Lynch 2006). The scale and gravity of these impacts tend to be amplified in the Caribbean, where the environment comprises some of the most fragile ecosystems on earth, including beaches, coral reefs, and tropical forests (Lynch 2006). These delicate ecosystems are being threatened by the vast growth of the tourism industry. (Goodwin 2008). And, the tourism attractiveness of the region is dependent mainly upon these white sandy beaches and its blue waters.

Clearly the economic success of the tourism industry in the Caribbean is dependent upon the quality of the environment. To date, much of this success is a result of development that has resulted in environmental degradation. As the industry grows, additional stress is being put on the fragile ecosystems, particularly coastal environments. Coastal resource use and environmental quality are inextricably linked. According to UNEP's ICAM[25] programme, there is the need for adoption of management tools for sustainability, and "these actions include the adoption of technologies and best practices for environmental management, establishment of regulatory programmes, integration with local communities, protection of natural areas and habitats, and the minimization of proper disposal of wastes".

Coastal zone environmental

Worldwide, 20% of humanity lives less than 25 km away from the coast, and 39%, or 2.2 billion people, live within 100 km of a coastline. For reference, the 100-km-wide coastal strips account for only 20% of the world's land area. The percentage of population living within 100 km of a coast is 100% in Denmark, 88% in Sweden, 99% in Great Britain, and 79% in Italy (World Resources Institute 2001). Coastal zones exhibit great structural diversity (beaches and dune landscapes, cliffs, wetlands, coastal flats, coral reefs, mangrove forests, ice edges, estuaries and lagoons, etc.). They are extremely important as a transformer and sink for terrestrial nutrients and pollutants, and also as a special habitat for plants and animals. As the

[24] http://www.onecaribbean.org/statistics/2009stats/default.aspx

[25] http://www.cep.unep.org/issues/ICAM%20manual.htm

transitional zone between land and water, they also possess high species diversity and productivity. At least 250,000 of the 1.7 million known animal and plant species live in the sea, predominantly in coastal waters[26].

Impacts of tourism on natural resources in the Wider Caribbean are many, particularly on the coastal resources, as much of the tourism in the Caribbean is based on the marine environment. Integrated Coastal Area Management (ICAM) for the Tourism Industry's (UNEP 2003) summarize in three major types of environmental impacts:

1. Excessive use of renewable and no-renewable natural resources (e.g. potable water, nonrenewable energy, agricultural resources, pressures on wildlife for the souvenir trade, over fishing and deforestation)
2. Emissions of pollutants (inappropriate wastewater, solid waste disposal, maintenance of boats)
3. Physical impact of the environment such as coastal erosion due to inappropriate building and design, sand mining, filling of wetlands, dredging.

Island Resource Foundation (1996) summarizes environmental impacts of coastal zone development tourism in Caribbean (Table 1) and suggests that the major tourism effects on coastal zones include the following;

- Displacement of Traditional Uses and Users
- Physical Changes and Habitat Damage
- Solid Waste Disposal
- Toxic Chemicals and Nutrification from Surface Runoff
- Groundwater Depletion and Contamination
- Change in Sediment Loads
- Visual Impacts

Sustainable Tourism Development in the Caribbean

Sustainable tourism has been highlighted recently as an area of major concern both within UNEP and the CBD. The Conference of Parties of the Convention on Biological Diversity also considered the relationship between tourism and biodiversity during its 5th meeting in Nairobi (see UNEP/CBD/COP/5/20: Sustainable Use Including Tourism). Outside of the mechanisms of UNEP and the CBD, a large number of other initiatives linking biodiversity and tourism (including ecotourism) have been undertaken by many organizations, ranging from the World Tourism Organization (WTO)[27], UNESCO, a number of NGOs, as well as numerous national and regional level destinations, and private tourism companies.

The definition of sustainable tourism adopted by the WTO is *"Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity,essential ecological processes, biological diversity, and life support systems" (*Harrison, Jayawardena and Clayton 2003*).*

[26] http://www.lighthouse-foundation.org/index.php?id=168&L=1

[27] http://www.unwto.org/media/news/en/press_det.php?id=1501&idioma=E

Table 1: Overview of Environmental Degradation from Tourism Facilities

FACILITIES IN THE COASTAL ZONE:	UPLANDS	COASTAL PLAIN	SALT PONDS AND ESTUARIES	BEACH AND SHORELINE	NEAR COASTAL WATERS AND FRINGING REEFS	OFFSHORE WATERS
Tourism Complexes and Large Resorts	*Physical Change* *Groundwater Pollution* *Visual Impacts* *Displacement*	Physical Change (fill) Groundwater Pollution Solid Waste Visual Impacts Displacement	Physical Change (fill) Sediments Toxics & Nitrification Solid Waste Displacement	Physical Change *Groundwater Pollution* Toxics & Nitrification Solid Waste (litter) Displacement	Physical Change Sediments Toxics & Nitrification Visual Impacts Displacement	*Groundwater Pollution* Sediments Toxics & Nitrification Displacement
Small Hotels and Resorts	*Displacement*	*Physical Change* Groundwater Pollution Solid Waste Displacement	*Physical Change* *Sediments* Toxics & Nitrification Solid Waste Displacement	Physical Change *Groundwater Pollution* Toxics & Nitrification Solid Waste Displacement	Physical Change Sediments Toxics & Nitrification Displacement	[Few identified impacts]
Parks and Protected Areas	*Displacement*	[Few identified impacts]	Physical Change (anchoring)	Solid Waste	Physical Change (anchoring)	Physical Change
Entertainment & Restaurant Facilities	Displacement (noise)	*Physical Change* Groundwater Pollution Solid Waste *Displacement* (noise)	Physical Change Sediments Toxics & Nitrification Solid Waste Displacement	Physical Change Groundwater Pollution Toxics & Nitrification Solid Waste	Sediments Toxics & Nitrification Visual Impacts Displacement	[Few identified impacts]
Shoreside Recreational Facilities	Displacement (noise) Visual Impacts	*Physical Change* Solid Waste *Displacement*	Toxics & Nitrification Solid Waste	Physical Change Toxics & Nitrification Solid Waste Displacement	Physical Change *Groundwater Pollution* Sediments Toxics & Nitrification Visual Impacts Displacement	Physical Change Displacement
Marine Recreational Facilities	*Visual Impacts*	*Physical Change* *Solid Waste* *Displacement*	Physical Change Sediments Toxics & Nitrification Solid Waste Displacement	Physical Change *Groundwater Pollution* Toxics & Nitrification Solid Waste Displacement	Physical Change Sediments Toxics & Nitrification Solid Waste Visual Impacts Displacement	Physical Change Solid Waste Displacement

In this table:

- *italics* identify *indirect effects* (*e.g.*, displacement of traditional users in upland areas);
- regular type indicates some level of effect; and
- **bold** type indicates a **major impact** on the area.

Source: Island Resources Foundation, 1996

Table 1. Environmental impacts of coastal zone development tourism. Island Resource Foundation (1996)

The Organization of Eastern Caribbean States has defined Sustainable Tourism as follows:
Sustainable tourism development is the optimal use of natural, cultural, social and financial resources for national development on an equitable and self sustaining basis to provide a unique visitor experience and an improved quality of life through partnerships among government, the private sector and communities.

According to CTO's Sustainable Tourism Strategy for the Caribbean (1998), for tourism development to be truly sustainable, it must take into account environmental and socio cultural considerations, and the. The extent of environmental and socio cultural changes must be determined by those who have to live with those changes, i.e. local communities, policy planners and the providers of the service.

The need for increased local participation in decision making is noted in discussions on sustainable tourism. Deirdre P. Shurland, Director of the Caribbean Alliance for Sustainable Tourism (CAST), noted that if the NGO sector "is weak, there is very little that will follow by way of sustainable development—tourism or otherwise." And, 'the development of local environmental NGOs will be vital for ensuring that environmental considerations—both of the natural resource and public health varieties—are fully accounted for in tourism development decisions.

Impacts of Tourism in the Caribbean

Though the tourism industry has generated significant benefits for Caribbean countries, the combination of large number of tourists, inadequate management systems, and other systemic problems has also produced significant negative social and environmental impacts in many instances. (Gardner 2003). The high level of negative impacts result from a number of factors, including uncaring attitudes design

deficiencies, regulatory and resource deficiencies, inadequate infrastructure, and deficiencies in the planning processes.

Goodwin (2003) suggests sustainability in Caribbean tourism can be summarize into 3 main considerations; economic, environmental and cultural. Economic: "Tourism is economically sustainable when it results in continuous future returns on past investments. The goal of economic sustainability often conflicts with the environmental and social/cultural elements of sustainable tourism development"[28]. For environmental sustainability, the issue lies in that the success of the Caribbean tourism industry is tied to environmental conservation, as it is the clean unspoiled environment that attracts tourists. But these shorelines and beaches, coral reefs, and inland tropical forests are fragile ecosystems (Lynch 2006). And modern mass tourism can cause significant damage to marine and terrestrial environments. Culturally, not only does tourism tend to create divisions between the local population and the tourists, it also tends to create social divisions within Caribbean society that did not exist prior to the industry's development (Goodwin 2003). This can be a result of gaps developed between those that benefit from the tourism industry, or the establishment of areas to protect threatened resources that deny the local population access to portions of the island's territory and livelihoods.

Land degradation and alterations from tourism can be predominately seen in physical changes, ecological and hydrological impacts (UNEP 1997). Physical alterations and destruction of habitats from tourism-related activities include construction and operation of facilities (including recreational activities). Physical changes include land-clearing, soil erosion, beach2erosion, littoral changes, boat anchoring and groundings). Ecological impacts (habitat loss or degradation, reduced integrity of sand dunes and other coastal barrier systems, reduced species populations, reduced and changed species diversity, decline in productivity, chronic pollution inputs), and hydrological impacts (modification of stream flows, increased percentage of impermeable surfaces, reduced groundwater recharge, increased sedimentation). (Gardner 2003).

Issues of land degradation in the Caribbean are being addressed through the development of sustainable land management practices by UNDP and OECS. OECS countries that ratified The United Nations Convention to Combat Desertification (UNCCD)[29] (26 December 1996), have projects that aim to mitigate land degradation by using SLM principles, thus maintaining the ecological integrity, stability and productivity of their terrestrial resources. SLM is critical to minimizing and rehabilitating the effects of land degradation, and ensuring optimal use of resources for sustainable development and poverty alleviation. According to the Capacity Building in and Mainstreaming of Sustainable Land Management (SLM)[30] programme, the underlying causative factors of land degradation, and environmental mismanagement in general, are poverty and undervaluing of natural resources. In both cases people focus on immediate economic gain irrespective of damage to the same resources they are dependent on

SLM suggests that causes of or contributors to land degradation include; clearance of vegetative cover, soil erosion by wind or water, natural conditions e.g. soil type, topography, weather/climatic conditions such as high intensity rainfall, natural hazards, invasive species, pollution, drought, unsustainable agricultural practices, and habitat alterations.

[28] http://www.mjpa.umich.edu/uploads/2/9/3/2/2932559/goodwin-sustainabletourism.pdf

[29] http://www.unccd.int/

[30] http://www.bb.undp.org/index.php?page=capacity-building

Appendix 15. Integrating Biodiversity into the tourism sector: Best practice guidelines

Tourism entered the agenda of the United Nations Convention on Biological Diversity during its 5th meeting in Nairobi (see UNEP/CBD/COP/5/20: Sustainable Use Including Tourism3). In 1999, during the Fourth meeting of the CBD's Subsidiary Body on Scientific, Technical & Technological Advice in Montreal, the first substantive deliberation of tourism issues occurred. The UNDP/UNEP/GEF Biodiversity Planning Support Programme (BPSP) has a mandate to provide assistance to national biodiversity conservation planners as they develop and implement their national biodiversity strategies and action plans. Integration of Biodiversity into the National Tourism Sector is one of the series of thematic studies commissioned by UNEP and the guidelines below are a result of the review of case studies requested at CoP5[31] (Ceballos-Lascurain 2001).

Best practices for national and regional planning strategies, outlined in the above mentioned report, are as follows:

1. Establish a national tourism strategy that prominently includes guidelines for biodiversity conservation planning.
2. For conserving biodiversity through sustainable tourism:
   - provide a strong scientific basis,
   - adopt an integrated management approach that covers all socio-economic aspects of a region, including tourism,
   - carry out ongoing monitoring of environmental impacts, through effective application of. Environmental Impact Assessment (EIA), which should be carried out by inter-sectoral
   - technical entities,
   - apply the precautionary principle (a guiding rule in EIA to protect people and the environment against future risks, hazards, and adverse impacts, tending to emphasize safety considerations in the occasional absence of clear evidence).
3. Promote and strengthen the decision making process and the standardization (norms) process in a participatory manner, especially at the local level.
4. Build up institutional capacity of the environmental authorities for follow up of environmental impact assessment and application of prevailing norms.
5. Apply integrated land use planning at a regional scale, taking into consideration the local communities' opinions.
6. Within the framework of the national tourism strategy, establish a sound ecotourism policy of an inter-sectoral nature that will provide viable options for biodiversity conservation and sustainable development especially at the local rural level.
7. Concentrate efforts on mid and long-term development policies without being pressured by periodical changes in government administration. Don't rely exclusively on short-term planning.
8. Foster the use of taxes, subsidies and interest rates to reduce the negative environmental impacts of economic activity and enhance the positive effects. Making loans more easily available is a key point, in which the government should also participate.

The development of best management practices (BMPs) for the tourism industry in the Caribbean has been ongoing for several years. Efforts by the CEP to publicize and popularize BMPs for tourism produced two publications (UNEP 1994, & UNEP 1997). The Caribbean Alliance for Sustainable Tourism (CAST) offers a number of publications for sale dealing with best practices, environmental management guidelines, technologies, and other relevant topics.[32]

[31] http://www.biodiv.org/decisions/default.asp?lg=0&m=cop-05&d=25
[32] http://www.cha-cast.com/2_Publications.asp

Recommendations for best practices for tourism development planning below are broad and though not exhaustive, give a general overview of considerations for development planning of tourist facilities, which include

- Management practice
- Site access
- Construction and landscaping
- Energy systems
- Water systems
- Waste disposal
- Communication
- Walls and fences
- Operations and maintenance
- Site and building design

Specific to “greening of mass tourism” best practice guidelines are based on the recognition that conventional mass tourism is still the mainstream of the tourism industry and thus it is important to implement measures to make it mo re environmentally friendly and minimize its negative impacts on biodiversity. Including in this are the effects of big hotels on the environment and how their design and operation can become more environmentally friendly (Ceballos-Lascurain 2001). Not all of these guidelines are relevant to all islands or Grenada in particular.

- Devise schemes for having big hotels collaborating with protected areas and the local communities.
- Encourage linkages between all-inclusive resorts and local enterprises, e.g. local food suppliers, daily bazaar, local excursions, etc. Promote symbiotic relationships between big hotels and smaller tourism suppliers, including small lodges.
- Avoid isolation or enclaves and have tourists be in contact with the social and natural environment (when desired by the community). Define criteria to assess the type of operation of the all-inclusive resorts and analyse how they benefit the destination.
- Encourage collaborative research on the impacts, promotion and incentives of mass tourism.
- Enforce current environmental laws, regulations and norms on waste management, air pollution and monitoring devices.
- Review and, if necessary, re-define and/or strengthen standards related to room densities and building heights, avoiding excessive concentrations. This has to be a decision made at the local level.
- Apply the “polluter pays” principle…payment must equal damage done (however, it is important to have in mind that sometimes the environmental damage is irreversible - if a species goes extinct no payment will compensate for the loss).
- Take measures to prevent more construction when a destination is being overbuilt. Use EIA and planning to limit building in environmentally sensitive areas.
- Educate the private sector regarding environmental guidelines. Capacity building for hotel owners and managers is essential.
- Create a widespread environmental awareness (including the importance of biodiversity) on the wider public; also, try to interest the mass tourism market in nature-oriented tourism activities and encourage them to chose environmentally-friendly natural goods, instead of artificial products.
- Where overcrowding occurs, use tools such as diversification of products to attract tourists to a variety of attractions.
- Apply strict environment principles in organizing large-scale sporting events.

Through UNESCO's Coasts and Small Islands programme[33], Grenada has developed a booklet entitled "Wise practices for coping with beach erosion: Grenada", which outlines not only how beaches can be changed and/or lost, how Grenada's beaches have changed, but also a checklist of wise practices. These recommendations should be considered for all coastal development practices. The WISE PRACTICES CHECKLIST is as follows;

- Plan for existing and future coastline change by positioning all new development (large and small) a 'safe' distance landward of the vegetation line (consult the Physical Planning Unit for information on 'safe' distances).
- Review and carefully consider ALL options when planning ways to mitigate beach erosion, these should include planning, ecological and engineering measures.
- Continue to monitor the rate of coastline change and share the findings with all stakeholders.
- Involve all stakeholders (e.g. government agencies, coastal communities, non-governmental agencies, coastal residents, beach users and others) in the improvement of beach facilities.
- Provide for improved beach cleaning through government and private initiatives, education and awareness efforts, and proper sewage disposal.
- Develop principles for coastal stewardship so that everyone plays their role to the fullest. Respect the rights of all beach users.
- Stop the mining of sand and stones from beaches and dunes in the tri-island state and utilise alternative sources of construction material.
- Implement policies to control the number of visitors to certain very sensitive sites e.g. Sandy Island.
- Conserve and restore vegetative cover, both adjacent to the beach in order to stabilise the sand, and further inland to reduce sediment reaching the reefs and sea grass beds.

Conservation International: Guidelines for sustainable hotel development

Sustainable Hotel Siting, Design and Construction is a new book published by Conservation International (CI) and The Prince of Wales International Business Leaders Forum (IBLF), will dramatically help hotel companies build sustainable and more environmentally friendly developments—providing a set of guiding principles that can be used throughout the industry. According to Jamie Sweeting, Senior Director, Travel and Leisure at Conservation International's Center for Environmental Leadership in Business (CELB). "Individual hotel companies have been focusing on issues of sustainability with regards to internal management practices for many years, but with tourism expanding rapidly on a global scale, there is a need for companies to also focus their efforts on integrating responsible practices at the development stage to ensure they have a positive impact." In 2005, nine of the world's leading hotel companies have come together, through the International Business Leaders Forum to work with CI to address the issue of sustainable hotel siting design and construction.

[33] http://www.unesco.org/csi/act/cosalc/brochgre.htm.

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