CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	International Iguana Foundation
Project Title:	Assessing the Status of Rock Iguanas (Cyclura spp.) and Integrating Community Outreach and Education In the Massif De la Hotte And Massif De la Selle Conservation Corridors, Haiti
Date of Report:	September 20, 2015
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CEPF Region: Massif La Selle and Massif La Hotte Conservation Corridors, Haiti
Strategic Direction: Strategic Direction 3 Investment Priority (3.1 & 3.2)
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Project Dates: June 1, 2014 to July 31, 2015 (13 months)

Implementation Partners for this Project:

Regional Organizations

We were able to collaborate, during this project with a regional Haitian organization. We had identified the regional organization AGAP (Appui a la Gestion des Aires Protegées) during the March 2015 trip to Belle Anse. They were in the 2nd year of a 3-year project of 2,000,000€ in Belle Anse (January 2014-December 2016); their project is funded by the European Union. Their goals are to address the over-exploitation of natural resources, particularly in the dry forests of Belle Anse surrounding Lagon des Huitres by providing support for development of the judiciary and institutional framework for the creation of a protected area in Belle Anse, and to introduce alternative income activities for those financially dependent on the local forests. AGAP are partners of ANAP (Agence Nationale des Aires Protégées, the Municipal Government of Belle Anse, and Municipal Agriculture (Bureau Agricole Communale usually known as BAC). The national government has a goal to develop ecological tourism in Haiti, and AGAP has support of acclaimed national agencies such as the Ministry of Tourism and the Ministry of the Environment. The three project coordinators, Agronome Louvensky Permentier, and Mr. Jude Junel Michel. By establishing contact and a working relationship with AGAP in March 2015, we were able to coordinate field visits with their team in Belle Anse. AGAP provided room and board during the IIF/Grupo Jaragua visit to Belle Anse in May 2015. The IIF will look to AGAP for the implementation of Cyclura conservation efforts in Belle Anse.

We also collaborated with Société Audubon Haiti in the Massif de la Selle. A rich group of panellists was coordinated by Louvensky Permentier, AGAP project coordinator and Agronomist. On March 11, 2015 IIF project coordinator Masani Accimé, IIF Technical Assistant Pierre Richard Sanon participated in a 2-hour panel discussion via radio in Belle Anse with Société Audubon Haiti biologists, Anderson Jean, Jean Mary Laurent and Jean Bodry. AGAP has a regular show called “Ann Pwoteje Richès nan Anviwonman Nou”, which is aired monthly on the only radio station in Belle Anse, Radyo Kominotè Bèlans (RKB). The station is broadcasted throughout the Arrondissement de Belle Anse, which is a significant part of the Southeast Department of Haiti and has a wide audience consisting of tens of thousands of people, according to AGAP. Société Audubon Haiti was contracted by AGAP to conduct a biological inventory of the dry forests during that time. We discussed the different aspects of forest conservation, its importance for the flora and fauna of the Belle Anse Community, the effects of ecology on local industries such as fishing and farming, and links to human health, and altered weather conditions causing drought and

flooding. Société Audubon Haiti has high visibility in Haiti for their work in biodiversity conservation throughout Haiti. They are an excellent partner for disseminating information of these important reptile species in the country.

Municipal Government and the Haitian Ministry of Environment

Through regional networking, we identified the Centre d'Interpretation de la Nature in Aquin, Municipality of Aquin, Département du Sud (map 1). It is a biodiversity conservation nature center, which is managed by the Ministry of Environment (MdE) . This nature center has extensive exhibits of scientific and cultural interest, including topographic maps, regional and areal images, biological artifacts from the region representing the local biodiversity.

We met with the nature center's director (Mr. Alain Crann) and his team in July 2014, and this gave us an opportunity to discuss the scope of this project. They had expressed interest and enthusiasm in collaborating immediately. They admitted to having very little knowledge about iguanas, and were not sure if there were any subpopulations in the area. They designated Agronome Yvon Germain, who is a local employee of the MdE, to participate in our activities. We had met with local Municipal representative Mr. Dorafils Dieuville (CASEC) of Flamand, a village in southeast Municipal Aquin. Flamand is home to the majority of the dry forests of the Municipality of Aquin. He reported that some locals have knowledge that iguanas exist in the area, particularly in an area known as Bassin Caïman. He provided a few local farmers, Jeudilait Sevrain and Jusnell Castor, who could serve as guides in Flamand. Unfortunately, we had not had an opportunity to visit much of the dry forests in Flamand during the first visit to Aquin. Mr. Dieuville had given us permission to investigate for the presence of Cyclura spp. in Flamand. Subsequently, in July 2014, we had met with Adjunct Provisional Mayor of Municipal Aquin, Mr. Lenz Michel, to discuss the project. He gave permission to investigate for the presence of Cyclura spp. in the dry forests of the Municipality of Aquin.

We also had visited the United Nations Development Program (UNDP) office in July 2014 in Les Cayes. The UNDP has a project to support the MdE regionally in the Departement du Sud. We met with the Director, Mr. Jean Renand Valière, and Mr. Ovidio Ibañez-Lopez (UNDP Geologist) to discuss the project. They provided reports on studies that they had done in the region, and the biodiversity they had documented. Iguanas were not included in their report. They also provided regional maps of the Departement du Sud (see map 2). These proved to be extremely helpful, since they are land-use and soil occupation maps, which depict agricultural areas, the types and hectarage of remaining forests. With these maps we were able to focus our surveys in areas surrounding dry forests, which would be most suitable for Cyclura species, while getting small samples in other areas. We had also met with Director, Mr. Jean Ernest Georges at the Regional office of the MdE in Les Cayes to discuss our project activities. He was planning to host an education workshop in region and looked forward to our participation in that as well.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.

Our project was executed in two key biodiversity hotspots in the Caribbean islands. We worked primarily in CEPF Regions **Massif de La Selle and Massif de La Hotte Conservation Corridors**

in Haiti. Our work contributed directly to the **CEPF Strategic Direction 3, and in particular** Investment Priorities:

3.1 Support efforts to build and strengthen the institutional capacity of civil society organizations to undertake conservation initiatives and actions

3.2 Enable local and regional networking, learning and best-practice sharing approaches to strengthen stakeholder involvement in biodiversity conservation

Please summarize the overall results/impact of your project against the expected results detailed in the approved proposal.

Assessment of local capacity to implement conservation actions using Cyclura as a flagship species where these species occur:

In both the Massif de la Selle and the Massif de la Hotte we found institutions which were already established and working in biodiversity conservation. Thus we collaborated with them, to help them integrate Cyclura conservation in their programs.

In the Massif de la Selle, the organization AGAP was working towards helping that community to create a municipally protected area, and doing much to strengthen the local capacity of local groups there. And so we shared our experiences with, including the legal research which IIF had done for Anse-a-Pitres. We also conduced a workshop for other local groups in Belle Anse.

In the Massif de la Hotte, we found a well established conservation center, run by the Ministry of Environment, and also working with local stakeholders. And so, we did a 3-day training workshop with them, and shared all that we could regarding Cyclura conservation.

In both cases they are working to integrate biodiversity conservation in their already established programs. This seemed reasonable at the time, because these local stakeholders have the advantage of already being on the ground. We did not need to go any further to try and find people who could potentially conserve Cyclura, since these very strong organizations already have an incentive to add the conservation of another endangered species to their respective programs.

Caribbean islands are particularly diverse in reptiles, with more than 500 described species, of which 94% are endemic. Iguanas represent a small fraction of Caribbean reptile species but are among the largest and most endangered, making them excellent flagship species for conservation. Of thirteen recognized Caribbean iguana species, twelve are endemic (Iguana Taxonomy Working Group). Of these, one species is extinct and the rest are threatened with extinction. In addition to their threatened status and large body size, Caribbean iguanas are ecologically important. They eat the leaves, flowers, and fruits of hundreds of native plant species, aid the dispersal and germination of seeds passing through their digestive systems, and are the dominant native herbivores on most islands where they occur. Consequently, Caribbean iguanas help maintain and perpetuate native plant communities such as tropical dry- forests, which are among the most endangered ecosystems on the planet.

Hispaniola is one of the largest and most diverse islands in the Caribbean and unique in being the only Caribbean island with two native rock iguana species, *Cyclura cornuta* and *C. ricordii*. *Cyclura ricordii* is ranked Critically Endangered by the IUCN Red List assessment, and *C. cornuta* is considered Vulnerable, however it is known that this ranking needs updating but data are lacking. The main threats to Cyclura species include habitat alteration, harvesting for human consumption and the pet trade, and invasive mammals. *Cyclura cornuta* can be found throughout the lowland arid areas of Hispaniola including some off-shore islands, however populations are thought to be declining substantially. In recent times there has not been a strong focus on *C. cornuta*. We have

only a very basic understanding of its current range and thus the distribution and severity of threats to various populations.

The most recent information that is available concerning the status of Cyclura species in the western region of the Massif la Selle found and the Massif la Hotte region were collected in the 1970s to the 1990s. Understanding the distribution and threats to Cyclura species helps us to understand the health of ecosystems in which they occur, and as flagship species also allows us to educate local and international communities on broader ecological conservation issues.

Hispaniolan Cyclura Habitat Requirements

The habitat requirements of two Hispaniolan Cyclura species had to be taken into consideration. *Cyclura cornuta*, which is considered Vulnerable by the IUCN, is still widely distributed throughout Hispaniola, including some of its offshore islands. Compared to rhinoceros iguanas (*C. cornuta*), Ricord's iguanas are quite specialized. Several key environmental factors, including soil depth and texture, landform, bedrock parental material, and climate determine their presence. Ricord's iguanas inhabit the most arid regions of the Southern part of Hispaniola, where the climate is highly seasonal. They prefer to dig soil burrows, which they continue to expand over time. Hollow tree trunks and rock cavities are also used for retreats when soil is unavailable. Retreat entrances are generally dug under dense thorny vegetation, shrubs, stumps, or exposed rocks. The coastal forests in Belle Anse, with many hills surrounding soft, sandy soil filled valleys is ideal nesting habitat for both Cyclura species, particularly *C. ricordii*. Several old iguana nests were found within this area.

Ricord's iguanas are strongly associated with thorn scrub woodlands, particularly with the thorn scrub-dry forest ecotone. The dry forests of Belle Anse are diversified, members of the Cactaceae family being common. One member of the Cactaceae that is considered a requisite for the presence and survival of *C. ricordii* is *Opuntia (Consolea) moniliformis*, and this plant was observed in abundance in Belle Anse (see photo 7). There is a special relation between the cactus and *C. ricordii.* Observation on feeding behavior and stomach contents of the species in the wild in the Dominican Republic show that the *C. ricordii* rely heavily on this cactus as food. This is especially true during the dry season, when iguanas can be seen climbing the spiny trunks of the cactus to get a hold of the juicy fruits that grow on the cladodes of the plant. These fruits not only constitute nourishment, they are the only source of water when the rest of the vegetation is withered and dry. The confirmed presence of this cactus species in the Belle Anse gives us strong evidence that we may have the critically endangered species there. Other dominant plant species in the Belle Anse forests include *Prosopis juliflora*, *Acacia sp.,* and *Cassia emarginata*, and D*acryodes excela*. It is estimated that more than 3,000 sacs of charcoal (~225m3) are produced for exportation from Belle Anse each week, according to a report provided by regional organization AGAP.

Recent distribution of the Rhinoceros iguana on Hispaniola by Meylan and J. Ottenwalder were used as a basis to revisit certain sites. Localities for Haiti consist of survey data gathered between 1977 and 1985. They sited the following localities containing habitats supporting iguana populations until the late 1970s:

> Tortue Island, Rivière Saline, Plaisance, Mole St. Nicolas, Anse Rouge, from Gonaives to St. Marc, Gonave Island, Ile Petite Gonave, Mirebalais, from Miragoanne to Jeremie, Les Anglais, Cap St. George, from Jacmel to Marigot, Belle Anse, from Marigot to Anse-a Pitres, and Lake Etang Saumatre in the Cul-de-Sac region.

Satellite images and UNDP land use maps were used to focus our area of study. The most important dry forests of the southern Tiburon peninsula seem to be located in the Municipality of

Aquin. Cote de Fer, which represents the southeastern most point of Departement du Sud was yet to be explored. However, based on satellite images it also shows equal potential of having suitable Cyclura habitat.

MASSIF DE LA SELLE REGION

Using satellite imagery of the southeast region of Haiti, Belle Anse was identified as a potential site for viable forests, which could still support Cyclura species. The dry forest is located along the coast, just west of the town of Belle Anse and has an estimated area of 4,000hectares. There are a series of Lagoons along the beach, and so this area is known as Lagon des Huitres.

To begin our investigations in the Massif de la Selle Region, a preliminary trip was made from the Haitian-Dominican border town of Anse-à-Pitres, where IIF team members had trained for several years in Cyclura iguana conservation, particularly in monitoring *C. ricordii* reproduction in several local sites. The team was composed of project manager Masani Accimé, local Technical assistants Pierre Richard Sanon and Tinio Luis, and two additional assistants (Mohamed Ally Santana and Samuel Nossirel) were hired to travel with the crew to Belle Anse, Haiti in March 2015, by a boat piloted by a hired fisherman from Marigot. The coastal region between Anse-à-Pitres and Belle is deforested by about 95%, based on our visual survey of the coast. Small fishermen's camps were spotted every 25-30km, but no major towns were seen except for Recife, which is about 7km west of Anse-à-Pitres, where conservation measure have been implemented for the conservation of *Cyclura ricordii*, and where both *C. ricordii* and *C. cornuta* are documented to exist. In Belle Anse, the forests surrounding the lagoons known as Lagon des Huitres were visited. Smoke plumes from charcoal production were visible, and the forest seemed fairly dense at the time, and ideal Cyclura habitat. This site was landmarked for future evaluation.

Within the forest surrounding "Lagon des Huitres", we found what appeared to be 'old' Cyclura nest, meaning nests from previous years. None of them were excavated during the first trip, to identify which of the two species the nests belong. The GPS coordinates of the places where we found old Cycllura nests are listed below (WGS 84):

N 18 12.868/ W 072 01.437
N 18 12.541/ W 072 00.829
N 18 12.570/ W 072 00.790
N 18 14.645/ W 072 00.831
N 18 12.843/ W 072 00.733
N 18 12.702/ W 072 00.737
N 18 12.676/ W 072 00.945

In March 2015, we conducted surveys with town folks in the middle of Belle Anse (Satellite Images 1 & 3). We also surveyed local residents in the nearby towns of Prechè and Pichon. We interviewed a total of 37 women and 90 men during this first trip. Of the 37 women interviewed, 23 (62%) could identify Cyclura iguanas in photographs we had shown them, 14 could not positively identify iguanas, and 3 among them had eaten iguana meat. Of the 90 men, 67 of them knew iguanas, 23 did not, and 25 of them eat iguanas regularly. Several people reported seeing an iguana with "red eyes", which is likely *C. ricordii*. Further investigation would help us to confirm

whether this was true. Below are the areas where interviewees reported seeing iguanas during our first trip to Belle Anse:

> "Kay Madanm", **Nan Malgre**, Gran Savann, Anse-a-Boeuf, Prechè (interviews were conducted here), Miragoâne, Comlombier, **Lagon des Huitres**, and La Rivière Salée.

We coordinated a second trip to the Massif de la Selle, which began on Saturday May 30, 2015. A technical team from Grupo Jaragua composed by biologist Ernst Rupp and technical assistants Jose Luis Castillo and Hairo Isaa Matos was contracted to travel to Belle Anse with IIF technical assistant Sanon Pierre Richard to investigate further. Two sites were visited for field surveys, one called the "Lagon des Huitres" site and the other, the "Nan Malgre" site (Satellite images 1 & 3).

The Lagon des Huitres site (GPS coordinate 18.13.031N/72.01.889W, Satellite Image 2) has several lagoons, dominated by two large lagoons and several smaller ones. The lagoons are very interesting for birds. Pink flamingos were sited, and black-neck stilts (Himantopus mexicanus) were present, and were displaying nesting behavior. The geological condition of this first area is composed of a Flat lime stone terrace and fondos (Satellite image 2) containing red soil in the center of the terrace. On the west, the large terrace of approximately 3km in diameter is bordered by a beach with pebbles with a sandy soil more inland, between the beach and the limestone terrace. The dense vegetation was quite varied and typical of dry forests with the majority of the forest being secondary due previous deforestation. *Bursera semaruba* (locally known as Gomier, and known in English as Copperwood) is the most common tree there, because it is not used for charcoal due its texture being a soft wood, and not ideal for charcoal. Other tree species included *Rosopis puliflora*, *Opontia* (*Consolea) moniliformis*, *Coccoloba uvifera*, *Amyris* sp., *Acacia scleroxylum*, three of the four Caribbean mangrove species the viviparous *Rhiczophora mangle*, *Conocarpus erectus,* and *Langucularia racemosa*, and both *Guayacum officinale* and *G. sanctum*. The presence of the *O. moniliformis* catus species in the Belle Anse gives us strong evidence that the critically endangered species existed there.

About 7km west of Belle Anse a second site selected for detailed evaluation based on previous information of *C. cornuta* sightings, and based on our surveys results from March 2015. Two inactive burrows of C. cornuta (satellite image 3) were found in were found in this site, which we now call the "Nan Malgre" site, just west of Belle Anse (satellite image 1). The burrows of C. cornuta are typically characterized by a slanted tunnel dug downward in soil, underground. Burrow activity are determined based on the presence of classic iguana tail drags and foot prints, and a lack of vegetation debris on the floor of burrow entrance. These two burrows were found on top of a very steep 30-40 meter cliff. The geology of the area is limestone cliffs and the vegetation of this site was dominated *Rosopis puliflora* on top of the cliffs with some smaller undergrowth. This forest was very much impacted by charcoal production. There is a small fishing village close by, posing a poaching threat for any remaining Cyclura.

Cyclura Population Pressure in Massif de la Selle

Regarding iguanas, we did not see any direct signs of *Cyclura* sp.. Neither scats (dried fecal matter) nor direct nesting were seen. Eight suspected nests were extensively excavated, however no Cyclura eggshells were found. It is presumed that *C. ricordii* no longer exists in this part of Haiti, although the conditions seem to be favorable. As for *C. cornuta*, no direct signs were found, but this does not exclude their presence. *C. cornuta* are more likely to still exist there, more so than *C. ricordii,* because there are confirmed reports of *C. cornuta* in nearby areas. If the charcoal pressure can be reduced in the Lagon des Huitres site, this would be an ideal location for iguana

re-introduction, particularly *C. cornuta*, as *C. ricordii* would be fairly isolated from its nearest neighboring subpopulation eastward, in Anse-à-Pitres, Haiti.

MASSIF DE LA HOTTE REGION

The historical data from the 1970s to the 1990s by Meylan and J. Ottenwalder indicated good potential in the geographic region from Miragoanne to Jeremie, and also near Cape St. George. Consequently, we concentrated our efforts on southern Massif de la Hotte region, from Cote de Fer on westward to Port Salut (map 1). Anecdotal, reports collected from interviewing locals in Flamand (Municipal Aquin) in July 2014 indicated that, historically, there were rock iguanas in the areas; a few farmers reported having seen them in the past few years. Thus, we further investigated the area on numerous occasions between 12 and 16 July 2014.

During our first trip to the Tiburon peninsula in July 2014, we made some key contacts, mainly at the Centre d'Interpretation de la Nature, an education center staffed by Ministry of Environment regional office in Aquin. Agronome Yvon Germain, a technician of the local branch of the Ministry of Environment, had provided two local guides, Lersain Lenère and Sidenel Jean-Charles. The three accompanied our team through the dry forests of Southeast Aquin, including 1er Section Macean, 4ème Flamand, and 11ème Franchipagne (map 2). They also allowed us to have access to the private Madicaque forests, where iguanas are reported to exist. Both guides reported seeing iguanas in the past year, but they were unable to differentiate between the two endemic Cyclura species of Hispaniola (*Cyclura ricordii* and *C. cornuta cornuta*).

We visited the forests of Flamand, in the Municipality of Aquin, which includes a private estate, which we approximate to be over 1,000 hectares of land in an area known as "Madicaque" (satellite image 4). This private estate is owned by a prominent and reportedly wealthy Haitian family residing in Petionville. Mellissa Danoile and Robin Pasberg were named among those who are proprietors. These two guides are, coincidentally, hired by proprietors to provide surveillance and prevent tree-cutting for charcoal. Madicaque is very dense coastal dry forests thick shrubbery and large trees. No old nests or dens could be found during this visit. Iguanas are apparently consumed in the Municipality of Aquin, though most regular people have never seen an iguana. In Madicaque Forest there is an endemic fruit locally known as "bonbon leza", which means 'iguana cookies' (see Photo 5). They are a yellowish fruit with a thin peel, one large seed, and mildly sweet flesh. The Genus and species of this plant are not yet identified. The guides reported that the iguanas reportedly consume this fruit year-round. Anecdotally, our two local guides mentioned above report sea turtle nesting each year on the beaches of Madicaque.

Anecdotal reports from locals in Flamand indicate that historically there are iguanas in the areas, a few farmers report having seen them in the past few years. We visited the area on numerous occasions between 12 and 16 July 2014. The village of Flamand in southeast Municipal Aquin has very dense dry forests and is not heavily populated by people. This area presents very good potential for future studies, such as tracking and camera-trap work to document the presence of Cyclura species.

In October 2014, Agronome Yvon Germain reported sighting a Cyclura iguana in the forests of Madicaque. This and other confirmed dens can be ideal locations to potentially safely capture iguanas and use camera-trap techniques to document their activity.

Our second trip to the Massif la Hotte was in June 2015. The group consisted of project coordinator Masani Accimé, IIF technical assistant Pierre Richard Sanon, and Grupo Jaragua Technical Assistant and Cyclura expert Jose Luis Castillo. On June 3 we visited the forests of Flamand. Though the habitat had all the ideal elements for Cyclura species, no signs of iguanas could be found. There was quite of bit of disturbance, such as agricultural activities and many foot paths frequented by charcoal producers. Dominant plant species in this are were *Acacia scleroxylum, Bursera semaruba*, and there was some *Opontia moniliformis*. The GPS coordinates of the areas visited in Flamand are 18.14.266N/73.13.305W and 18.13.250N/73.13.360W.

We extensively investigated in Madicaque, where we identified the following dominant plant species. *Guayacum* sp., *Amyris* sp., *Coccoloba uvifera*, *Bursera semaruba*, two mangrove species *Conocarpus erectus* and *Langucularia racemosa*, We identified two inactive dens which were marked for future study using camera-traps. We were guided by Sidenel Jean-Charles, one of the same local guides whom we were given by the local Ministry of Environment office in Aquin. No active signs of Cyclura were found during this trip.

On our third trip to the Massif la Hotte region In July 2015, to search some key forests for iguanas, and to conduct a 3-day workshop with the Ministry of Environment. We traveled to Aquin, home of the Centre d'Interpretation de la Nature, an education center staffed by Ministry of Environment regional office. Alain Crann, the director of the Center and many others serve as local guides, education and outreach agents participated. The number of participant was 14. During this workshop, we visited an area known as Lozandye. There we were finally able to find signs of Cyclura activity. We found scats, active dens, old nests. No new nests were found, none of the old ones were excavated. We went out together to set up an infrared automatic camera trap (Reconyx RapidFire RC55) at one of the inactive dens at the Madicaque site for 24hrs, were did not capture any images of iguanas. We then set the camera out at one of the active dens found at Lozandya for 48hours. We did not capture images of the iguana residing there either. We believe this is principally because we set out the camera 1 day after 17 of us visited the area. These iguanas are very shy and it is not unusual for them to not feed or sun themselves or days for fear of encountering predators. And since the poaching rate is relatively high in these forests, the remaining iguanas are those who hide well.

Cyclura Population Pressure in Massif de la Hotte

In July 2014, seventy seven surveys were conducted concerning iguanas, from the Municipality of Aquin, starting in Flamand in southeastern part of Municipal Aquin and westward to the Municipality of Port Salut (see Maps 1 & 3). In Aquin, we interviewed 50 people in town, 15 in Flamand, and 2 in La Coline (see Map 3). In Port Salut, we did 10 surveys. We used photos of both Cyclura species, an Green Iguana (*Iguana iguana*). an American alligator, and a Komodo dragon to question people about their knowledge on reptiles of the region. In Aquin, of the 50 questioned, 31 of them (62%) could identify an iguana. In Flamand, 10 of 15 (66%) could identify Cyclura iguanas. And one of the two interviewed in La Coline identified Cyclura iguanas. No one confirmed ever seeing a green iguana.

In Port Salut and immediate surrounding areas, including rural areas, no one could be found who could confirm the existence of Cyclura species or any iguanids in the region. Of the 3 people who had some knowledge of iguanas, none had ever seen them in the Port Salut area. Most of this region is composed of small patches of modified forests, with the majority of the land having been converted for agriculture. There is little original forest left in Port Salut. Thus far in the southern Tiburon Peninsula, we have localized Cyclura spp in the area of Municipal Aquin, which includes

the town of Aquin, Flamand, and the private land of Madicaque (see Map 2) which is found in an area called Macean (see map 3).

The people we interviewed in Aquin who had seen iguanas say the animals live in for forest or in fissures in the hills. They gave local names for some of the places where iguanas have been seen in small areas locally known as Gwos Kay, Karanmye, Mòn Wouj, Lans Pitimi. The people in Flamand say that they have seen iguanas in the forests of Flamand.

We investigated consumption of Iguanas as Food Source as a possible threat to the species also. Of the 77 interviewed from Aquin to Port Salut, only 8 people had eaten iguanas: 1 in Port Salut and 7 in Aquin. This is in sharp contrast to the Anse-à-Pitres region, where 33% of 502 people who were interviewed in 2009 had admitted that they ate iguanas.

In June 2015, we conducted additional surveys as far east as Cote de Fer, which is a town situated between the Departement du Sud (where Flamand, Madiquaque, Aquin Les Cayes and Port Salut can be found) and the Departement du Sud-Est (where Belle Anse can be found). Based on the Satellite imagery, we were sure that we identify Cyclura species. To our surprise, no one, including farmers and those involved in charcoal production, could say they had seen iguanas. We interview an older man in his sixties who reported seeing them in other parts of the Departement du Sud, but not near Cote de

CHARCOAL USE IN MASSIF DE LA HOTTE

We felt it was important to get an impression of the current rate of habitat destruction due to charcoal production, which to-date, presents the greatest threat to Haiti's diminishing wildlife populations. We interviewed people in mid-town Aquin, and also in Flamand, Port Salut, and La Coline concerning household charcoal use. Charcoal production is the largest industry negatively impacting the forests of Haiti, and this information helps us to determine how determined the local population is on the local forests for this resource, and the amount of pressure it is facing. We got the following information in Aquin from 50 interviewees:

12 of 50 cook with charcoal only

25 of 50 use charcoal and dry wood collected from the forests

1 of 50 uses charcoal, dry wood, and propane gas

1 of 50 uses charcoal and propane gas

11 of 50 use dry wood only

1 of the 50 works in the forests producing charcoal

Flamand is located east of Aquin, and this is where we found forests nearly as dense as those at Madicaque, though there is some evidence of disturbance for subsistence agriculture. Iguana sightings were also reported. From the 15 interviews in Flamand, their responses were as follows:

7 of 15 use dry wood only collected from the forest

8 of 15 use dry wood and charcoal

5 of 15 produce charcoal.

We interviewed 10 people regarding charcoal use in Port Salut and the following are the results:

4 of 10 use charcoal and dry wood. The dry wood usually reportedly comes from private land.

3 of 10 use charcoal only

2 of 10 use dry wood only

1 of 10 would not comment

La Coline is a hilly region ~7km northeast of Flamand. There is almost no forest left in this area; the only vegetation seen was modified forest with introduced fruit tree species. We briefly visited this area and interviewed two people. They both use dry wood and charcoal for cooking, and neither one of them reported producing charcoal.

CYCLURA CONSERVATION EDUCATION

The panel discussion conducted over the radio in Belle Anse in March 2015, which was elaborated in the first part of this report, had far-reaching education workshop, in terms of touching local population. We also had some other very significantly successful education seminars. AGAP has a regular show called "Ann Pwoteje Richès nan Anviwonman Nou", which is aired monthly on the only radio station in Belle Anse, Radyo Kominotè Bèlans (RKB). The station is broadcasted throughout the Arrondissement de Belle Anse, which is a significant part of the Southeast Department of Haiti and has a wide audience consisting of tens of thousands of people, according to AGAP. Société Audubon Haiti was coincidentally contracted by AGAP to conduct a biological inventory of the dry forests during that time. We discussed the different aspects of forest conservation during the panel discussion, its importance for the flora and fauna of the Belle Anse Community, the effects of ecology on local industries such as fishing and farming, and links to human health, and altered weather conditions causing drought and flooding.

Another community workshop was conducted in Belle Anse at the Cocky Hotel in June 2015, in which 16 participants were present, including Mayor Rony Rabel. The workshop consisted of slide presentations of typical Cyclura habitat, the difference between the two endemic Cyclura species, and the current findings in Belle Anse, and potential for conservation. The participants were concerned about follow up, meaning whether there would be future projects to protects the species and the very important mangroves of Lagon des Huitres.

We were invited by the Regional Director of the Ministry of Environment… to participate in a community workshop help on June 4, 2015. This was an event organized by the Ministry of Environment to follow the 2015 World Earth day. Nearly 100 students were invited from local schools. Both Masani Accimé and Jose Luis Castillo presented information on the two Hispaniolan Cyclura species with interactive presentation. The regional director was present, as were the staff of the nature center in Aquin

We conducted a very dynamic 3-day workshop with the Regional branch (Sud department) of the Ministry of Environment for the Sud. The lectures took place at the Centre d'Interpretation de la Nature. The following topics were covered:

Cyclura ecology and biology

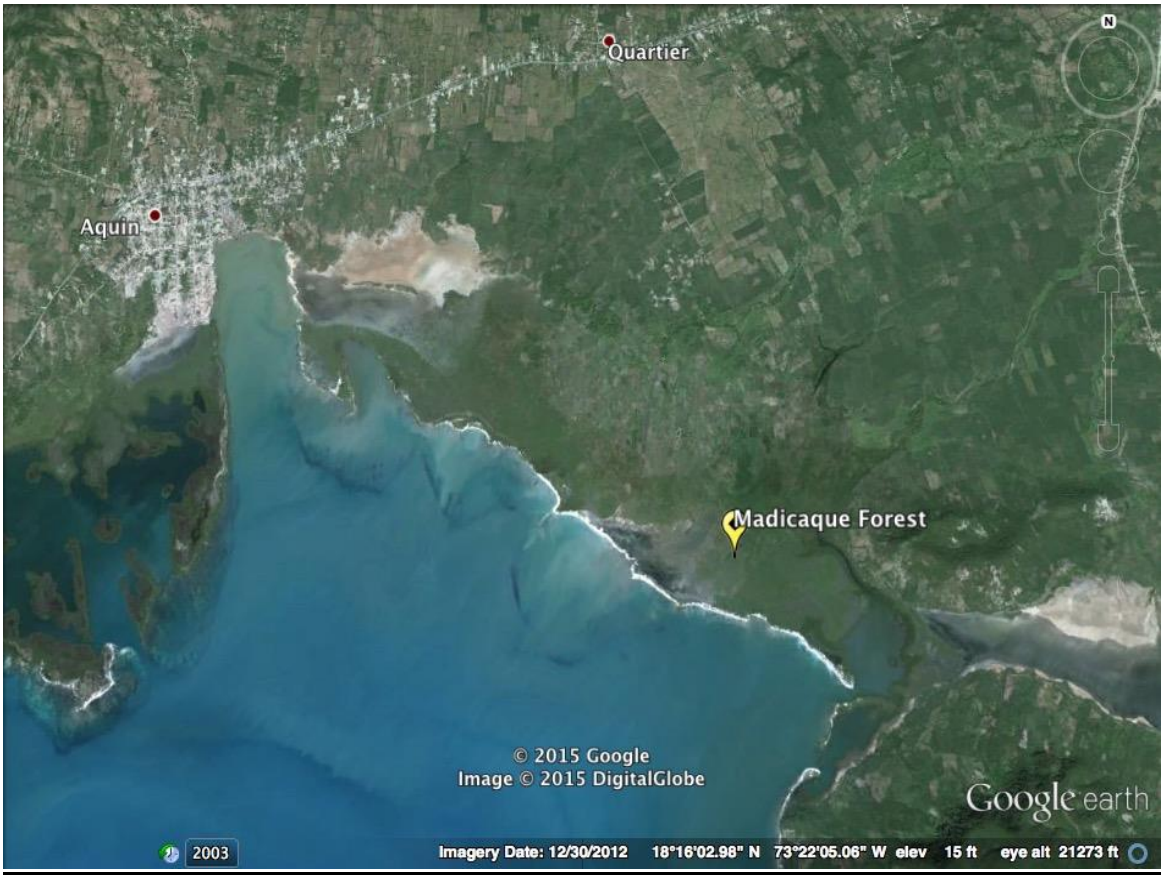
Cyclura cornuta and *C. ricordii* biology
Conservation practices in the Dominican Republic
Conservation practices and Municipal Protected Area in Anse-à-Pitres Haiti
And ISG recommendations for Cyclura conservation in:
Safe capture and identification techniques
Captive breeding and husbandry

Reports of our investigations and workshops in the Massif de la Selle were prepared, translated in French, then submitted to the Director of the Regional office of the Ministry of Environment in Jacmel. Since the Regional Ministry of Environment in the Sud Department (Massif de la Hotte) received extensive training through our workshop, and we were collaborators for our investigations in the Massif de la Hotte. Thus, we shared all relevant data with, and colaborated for the elaboration of a report to the Ministry of Environment with Director Craan of the Centre D'Interpretation de la Nature in Aquin. Further, this final report to CEPF will be submitted to the Ministry of Environment as well.

<u>Satellite Image 1:</u> Satellite image of Belle Anse, including Lagon des Huitres & Nan Malgre Sires.

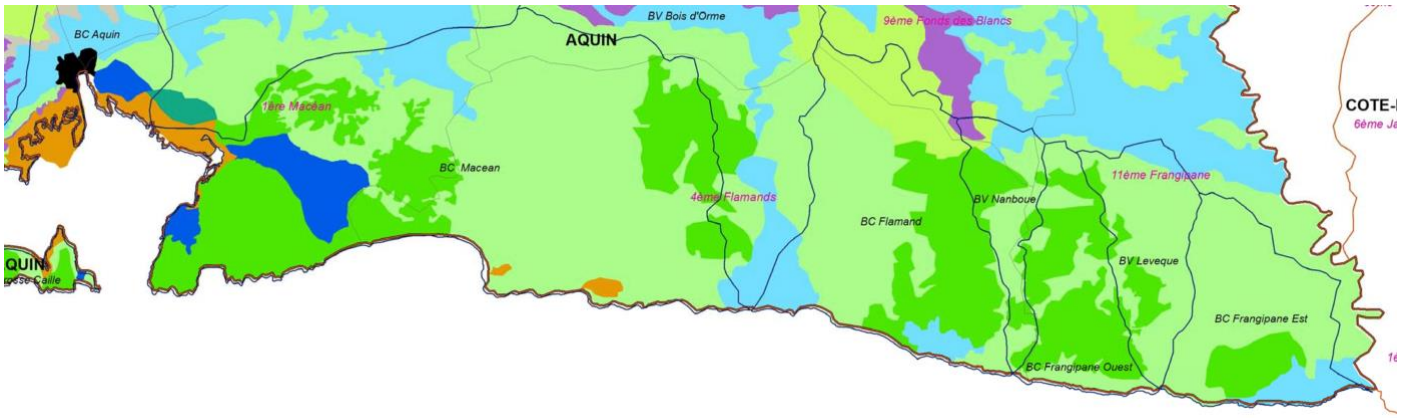
<u>Satellite Image 2</u>: Lagon des Huitres Cyclura habitat in Belle Anse, Massif de la Selle. By Ernst Rupp.

<u>Satellite Image 3:</u> Two inactive dens or burrows were found in a town locally known as Nan Malgre.



Satellite Image 4: **Satellite image of the town of Aquin (left) and the Madicaque forests.** Source Google Earth.

Map 1: **Municipalities in the Departement du Sud, Massif de la Hotte, Haiti** (Source www.google.com)



<u>Map 2:</u> Map of Municipal Aquin, which includes the different Municipal Sections (1ere Macean and 4ème Flamand)

Photo 1*: Lagon des Huitres in Belle Anse. A plume of smoke can be seen in the distance on the left, from charcoal production in Lagon des Huitres. (Masani Accimé)

<u>Photos 2 & 3*:</u> Charcoal production in the forests of Flamand. (Pierre Richard Sanon)

**The photos for this report were sent to* Loiza Rauzduel *in 4 emails. Also refer to the interim reports for additional photos.*

Please provide the following information where relevant:
Hectares Protected: 0
Species Conserved: *Cyclura cornuta cornuta* (VU)
Corridors Created: 0

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.
The training workshop conducted with the Ministry of Environment has greatly contributed to the long-term impact of the project. We profoundly increased their knowledge of Cyclura conservation. Those who participated have a high likelihood of continuing in this field, whether with the Ministry of Environment or with non-profit biodiversity conservation organizations. Their knowledge can help to serve as a basis for future biodiversity conservation projects.

Were there any unexpected impacts (positive or negative)?
Our field work together, along with lectures in seminar format have contributed greatly to the vision of the Regional branch of the Ministry of Environment for prioritizing their conservation objectives. They proposed the idea of local off-shore islands which could be potential reintroduction sites for *C. cornuta* in the Massif de la Hotte. This can present a significant advancement in Cyclura conservation in the Caribbean

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

Project Design Process and Implementation: (aspects of the project design that contributed to its success/shortcomings)
The project was designed to first establish contact with local and regional NGOs and authorities with a particular interest in biodiversity conservation. This proved to be very useful because through these relationships we were able to obtain local guides, we received in-kind contributions to execute parts of the project, and they were also local and regional stakeholders in a position to propagate Cyclura conservation.

Other lessons learned relevant to conservation community:
Haiti's problems are very special in that the majority of the country is dependent on charcoal. This fact was resounded in the many surveys and field visits we did. Future project targeting alternative livelihoods to help Haitians move away from charcoal production would be very useful in the Massif de la Selle and Massif de la Hotte regions.

The road conditions in the Massif de la Selle region presents a special problem for any institution attempting to work in southeast Haiti. Special considerations need to be made for transportation throughout the region. We organized travel by sea from the Haitian Dominican border, which was the most practical solution, however without the help of AGAP, local transportation would have been solely possible by local motorcycle drivers. Special all terrain vehicles would need to be considered for any long-term projects.

ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
Grupo Jaragua	In-Kind	~$6,000	Vehicle and fuel for round-trip transportation from Anse-a-Pitres Haiti to Belle Anse, passports for Ernst Rupp, Jose Luis Castillo, and Haire Isaac Matos, Visas for Ernst Rupp and Haire Isaac Matos.
AGAP	In-Kind	~$500	Room & Board in Belle Anse
Haitian Ministry of Environment	In-Kind	~$3,500	Additional provisions for workshop (lunches) and two vehicles and fuel for transportation to the field.

****Additional funding should be reported using the following categories:***

- ***A*** *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*
- ***B*** *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*
- ***C*** *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Sustainability/Replicability

This project would not be too difficult to replicate. However coordinating extensive trips in the Massif de la Selle region in particular may need some time and careful planning given the inaccessibility of the region.

Additional Comments/Recommendations

In the Massif the la Selle, AGAP was the most dynamic group working in biodiversity conservation which could implement Cyclura conservation in their current program. They are currently working with the Municipality on creating a Municipal Protected Area. Since we have much experience in this regard, through our CEPF Large grant, we were able to share important legal documents and the framework of the arrêté communal.

In the Massif de la Hotte, the Direction Départmental de l'Environnement (DDE) is doing a fine job spear heading conservation activities in the important areas for Cyclura conservation. We are working to help strengthen their knowledge so that they can effectively manage Cyclura conservation in the Tiburon peninsula. We strongly recommend that the DDE use the relatively isolated forests of Madicaque in the future as a study site to begin to safely capture iguanas to collect morphometric data, to positively identify the species of rock iguana, and use camera-trap techniques to document their behavior in this particular habitat. This site can then be given "Core Zone" status within the biosphere reserve Massif de la Selle.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

Please include your full contact details below:

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E-mail:	masani.accime@gmail.com rhudson@fortworthzoo.org

*****If your grant has an end date other than JUNE 30, please complete the tables on the following pages*****

Performance Tracking Report Addendum

CEPF Global Targets

(Enter Grant Term)

Provide a numerical amount and brief description of the results achieved by your grant.
Please respond to only those questions that are relevant to your project.

Project Results	Is this question relevant?	If yes, provide your numerical response for results achieved during the annual period.	Provide your numerical response for project from inception of CEPF support to date.	Describe the principal results achieved from July 1, 2007 to June 30, 2008. (Attach annexes if necessary)
1. Did your project strengthen management of a protected area guided by a sustainable management plan? Please indicate number of hectares improved.	No			Please also include name of the protected area(s). If more than one, please include the number of hectares strengthened for each one.
2. How many hectares of new and/or expanded protected areas did your project help establish through a legal declaration or community agreement?	0			Please also include name of the protected area. If more than one, please include the number of hectares strengthened for each one.
3. Did your project strengthen biodiversity conservation and/or natural resources management inside a key biodiversity area identified in the CEPF ecosystem profile? If so, please indicate how many hectares.	No			
4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares.	Yes			Cyclura conservation training of conservation organization AGAP in the Massif de la Selle (in Belle Anse). Also training of the Regional Ministry of Environment in the Massif de la Hotte.
5. If your project promotes the sustainable use of natural resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1 below.	No			