CEPF Final Project Completion Report

Instructions to grantees: please complete all fields, and respond to all questions, below.

Organization Legal Name	
Project Title	Ecosystem Threat Assessment and Protected Area Strategy for the Massif de la Hotte Key Biodiversity Area, Haiti
CEPF GEM No.	65476
Date of Report	31 December 2015
Report Author	Stephen B. Hedges
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CEPF Region: Haiti

Strategic Direction: Improve protection and management of priority key biodiversity area

Grant Amount: $103,135

Project Dates: 1 November 2014 to 30 November 2015

1. **Implementation Partners for this Project *(list each partner and explain how they were involved in the project)***

   Société Audubon Haiti (SAH). This NGO in Haiti is the key partner who was engaged in many aspects of the project. A separate grant from CEPF covered all tasks specifically assigned to SAH. SAH members joined project missions led by PL Hedges, and helped PL to translate conservation data into conservation action locally (La Hotte) and nationally (governmental policy). SAH members also separately visited the two project sites (Grand Bois, Grande Colline) to collect information. Almost all interactions with stakeholders and local communities were through SAH. The role of Temple (Hedges) was to identify the biodiversity hotspots, plan and organize expeditions, direct scientific aspects, assemble results in terms of primary media (fact sheets, calendars, videos, films, most posters), and work closely with SAH President, Philippe Bayard, to translate research results generally to conservation action.

<u>Conservation Impacts</u>

2. **Describe how your project has contributed to the implementation of the CEPF ecosystem profile**

   The CEPF Ecosystem Profile is to "improve protection and management of priority key biodiversity areas." This project accomplished that goal by determining the remaining forest habitats and composition of key biodiversity groups present, and effectively distributing this

knowledge to the persons, communities, and institutions where the knowledge had a conservation impact. The government of Haiti responded by declaring the two project sites as national parks: Grand Bois National Park and Grande Colline National Park (see below for details). This provided the legal mechanism for protection but did not provide resources. For the latter, SAH President Philippe Bayard and Project Leader (PL) Hedges co-founded Haiti National Trust in late 2015. A large initial private donation will allow for the purchase of Grand Bois National Park (private land) and management of that park and of Grande Colline National Park (government land). A third hot spot identified by PL Hedges but not studied under this CEPF project, Deux Mamelles, was also decreed a national park in 2015. These sites are part of a broader effort by Hedges and Bayard to identify and protect biodiversity hot spots throughout Haiti (www.haititrust.org).

3. **Summarize the overall results/impact of your project**
   Planned Long-term Impacts - 3+ years (as stated in the approved proposal)
   List each long-term impact from Grant Writer proposal

   The Massif de La Hotte key biodiversity area in Haiti is recognized locally, nationally, and globally for its intrinsic natural and cultural values, ecological services and endemic species. Some of the important sites are identified, and their biodiversity documented. In conjunction with a parallel project (Audubon Society of Haiti, SAH), a strategy and conservation action plan is developed by key stakeholders (guided by scientific, social and economic data) and implemented on the ground. The impact of this work over the long term is to slow or stop the loss of biodiversity in the Massif de La Hotte. The loss of forest ecosystems is the highest in this region than anywhere else in the Americas. Whole mountains have already lost everything in terms of forests and biodiversity, and other mountains are rapidly losing their biodiversity. The adoption and implementation of policy changes by the Haitian government will likely take several years, and we do not expect to see immediate results of this work on the rate of deforestation and loss of biodiversity. However, in case of success we expect an impact would be seen in five years.

4. **Actual progress toward long-term impacts at completion**

   The impact of this work over the long term is to slow or stop the loss of biodiversity in the Massif de la La Hotte. There was no expectation to make any visible progress on the long-term impacts of this project during the course of the 3-yr project, because that usually requires sustained, long-term work at the community and governmental levels, likely to be realized after the project. Nonetheless, and unexpectedly, significant progress was made by completion of the project in late 2015: the study sites were officially declared national parks, Haiti National Trust was launched, and a large donation was received that will allow purchase of the entire Grand Bois mountain and another hot spot, and support conservation management of the land.

   Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal)
   List each short-term impact from Grant Writer proposal

   By the end of this project, the following results will be implemented: (1) Important sites identified through forest cover analysis of remotely sensed data and on-the-ground observations. (2) Biodiversity assessed in two key sites, Grande Colline and Grand Bois, with

lists as complete as possible of the diversity of vertebrates {species lists at observation sites) and of the plant communities. The first major trip was successful in that we reached both locations, identified species occurring there and made lists, discovered some new species, and met the local inhabitants. Information was obtained on the local communities at each site, which will be used later during the year by SAH. SAH will profile the socio-economic and political status of these communities, identify at least 1200 hectares of natural forests to be recommended for protected area management and begin conservation actions in participation with the community stakeholders in Morne Grand Bois and Grande Colline areas.

5. Actual progress toward short-term impacts at completion

We are happy to say that these short-term impacts were achieved to a greater degree than proposed. We have identified the most important sites for forest habitats in the two target areas, determined most of the vertebrate species occurring there (see below), and determined ecosystem threats and dynamics of local communities as they bear on these ecosystems. The creation of Grand Bois and Grande Colline national parks now provides legal protection for these ecosystems, and we now have the resources to purchase all of the private land (Grand Bois) and manage it for conservation.

6. Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives

As noted above, we were successful in achieving the short-term objectives, and are on-track for achieving the long-term objectives.

7. Were there any unexpected impacts (positive or negative)?

No.

<u>Project Components and Products/Deliverables</u>

Component 1 (as stated in the approved proposal)

List each component and product/deliverable from Grant Writer

Ecosystem surveyed and threat assessed. Here, we determine the nature of the remaining forests, the key biodiversity they contain, and threats to their survival.

8. Describe the results from Component 1 and each product/deliverable

Multiple expeditions to the two target ecosystems (Grand Bois and Grande Colline) were successful. The large combined team of Temple and SAH personnel (Haitians and Americans) explored both areas by helicopter and on foot, characterized the forests and biodiversity, and interviewed local inhabitants and farmers. We determined the population centers and routes of access and found abundant evidence of ongoing habitat destruction.

Grand Bois is an isolated mountain in the form of a bowl, in the southwest of Haiti. It is covered with a rainforest that is rare in Haiti (with Sierra palms). The highest summit is 1,262 meters and about half of the area above 1000 meters (207 hectares) is still covered with forest. Grand Bois contains many species that are only found in Haiti. Among the 68 vertebrate species, there are 2 threatened bird species and at least 3 new species of frogs.

In the forest is also found one of the last remaining populations of a rare tree species (*Magnolia ekmanii*) and a critically endangered frog species (*Eleutherodactylus semipalmatus*) that lives in streams. Slash and burn agriculture was occurring during our visits to Grand Bois, indicating that the original forests were quickly disappearing.

Chaîne de la Grande Colline is a mountain range at the core of the Massif de La Hotte of southwestern Haiti, west of the Macaya range. The highest peak is 2029 meters in elevation, and 3488 hectares of land are above 1000 meters, with two peaks (6 hectares) above 2000 meters. Deforestation is so extensive that little original forest remains except at the highest elevations, almost all above 1800 meters. Nonetheless those forests are among the most spectacular in Haiti, with giant tree ferns and hardwoods, some on nearly flat terrain. The remarkable biodiversity of Grande Colline includes 20 species of frogs (some unique to Grande Colline), 17 species of reptiles, and 19 species of birds. Slash and burn agriculture was occurring in Grande Colline on all of our visits, rapidly reducing the original forests. In addition, we found temporary sawmills in the tallest and best-developed forests at around 1800 m on Morne Lezard (southern Grande Colline). This type of ecosystem threat is rarely encountered in Haiti because so few original forests in the country have trees that are large enough to warrant sawmills.

At both sites, SAH members of the team collected socio-economic data to determine livelihood profiles and specific threats to the forest ecosystems. Traps were set to capture invasive rats and further efforts were made to assess the invasive species problems, including feral dogs and cats that are a particular threat to the native vertebrate species.

The products and deliverables are publicly available on the web site of SAH: www.audubonhaiti.org (see "archives"). These include geographic profiles of Grand Bois and Grande Colline, and a forest cover analysis of the Massif de la Hotte conducted by Oregon State University LARSE (Laboratory for Applications of Remote Sensing in Ecology) as a subcontract of this CEPF grant, a separate evaluation of forest cover in Grand Bois and Grande Colline, a socio-economic study of Grand Bois and Grande Colline, an environmental education strategy for Grand Bois and Grande Colline, and an evaluation of water resources of Grand Bois and Grande Colline. Detailed topographic maps of Grand Bois and Grande Colline are also available at the web site of Haiti National Trust (www.haititrust.org).

Component 2 (as stated in the approved proposal)
List each component and product/deliverable from Grant Writer
Public education and awareness activities conducted. Here, we inform several audiences of the rich biodiversity that exists in Haiti and existing threats, through lectures, radio, and multimedia programs: (1) the general public and local communities in Haiti, (2) the general public internationally, (3) Haitian authorities, and (4) the Donor's community.

9. Describe the results from Component 2 and each product/deliverable

In Haiti, printed calendars are widely used in cities and rural areas, and provide one of the best forms of public outreach. 40,000 copies of our 2013 calendar, highlighting the rich biodiversity of Haiti, were printed (funded by donors in Haiti) and distributed freely throughout the country. We produced a smaller print run (1000 copies) of a large poster-calendar in 2014. For the 2016 calendar, we highlighted 12 biodiversity hot spots in Haiti and again printed 40,000 copies (now being distributed). All of these calendars are in three

languages (French/Creole/English) although the target audience is the general population of Haiti. We are also distributing the calendar internationally from the Haiti National Trust web site (www.haititrust.org).

Hedges and filmmaker Jurgen Hoppe produced a 1-hour documentary "Extinction in Progress" about the deforestation in Haiti and pending mass extinction of biodiversity (www.extinctioninprogress.net). It was shown at film festivals globally (Caribbean, USA, Europe, Asia) in 2014 and a French-narrated version was shown in Port-au-Prince, Haiti (December, 2015). Out of more than 100 films shown at the Washington DC film festival, it was placed in the "five must-see films" by Ecowatch. It is being distributed to educational institutions and the general public by Green Planet Films (non-profit) and the two published reviews have considered it "highly recommended" (Educational Media Reviews Online) and "one of the most outstanding" films (*The American Biology Teacher,* 2015). Shorter vide-essays were also published on Caribnature (www.caribnature.org) and Youtube.

Since our current efforts began in 2009, we have emphasized communicating our findings to the government of Haiti. Hedges has given PowerPoint presentations to the Director-General of Agriculture and his staff (and often representatives from the Ministry of Environment) after each expedition, describing the work that was accomplished, the ecosystem threats, and recommendations to protect these biodiversity hot spots in Haiti. On three occasions (2010, 2011, and 2015), the Director-General and other governmental representatives attended evening functions in Port-au-Prince and Furcy, Haiti (socials, banquets) hosted by Bayard and Hedges, to further communicate the findings of this project effort. Hedges also co-hosted a meeting at the Philadelphia Zoo that included participants from the Haitian government (including the Director-General of Agriculture), primarily to view the breeding facilities for endangered Haitian frogs. These concerted efforts to inform the government of Haiti contributed to the formal declaration in 2014–2015 of three biodiversity hot spots as National Parks (Grand Bois, Grande Colline, and Deux Mamelles).

Several public events were held in Haiti to educate and highlight the results of the biodiversity conservation projects, including expositions in 2014 and 2015 where posters were produced and displayed. The event in 2015 (December 9th) also included a showing of the French version of the film *Extinction in Progress* to an audience of about 300 persons. The Minister of Agriculture and other government officials attended the event.

Newspapers in Haiti, including the largest (*Le Nouvelliste*), published front page articles in December 2015 about this CEPF-funded work on biodiversity hotspots. A news article on the project was published in 2013 in *Terre Sauvage* (leading French magazine), thus reaching donor's community.

10. If you did not complete any component or deliverable, how did this affect the overall impact of the project?

Not applicable.

11. Please describe and submit any tools, products, or methodologies that resulted from this project or contributed to the results

Not applicable.

CEPF Global Monitoring Data

Respond to the questions and complete the tables below. If a question is not relevant to your project, please make an entry of 0 (zero) or n/a (not applicable).

12. Did your organization complete the CEPF Civil Society Tracking Tool (CSTT) at the beginning and end of your project? (Please be sure to submit the final CSTT tool to CEPF if you haven't already done so.)

	Date	Composite Score
Baseline CSTT	n/a	n/a
Final CSTT	n/a	n/a

13. List any vulnerable, endangered, or critically endangered species conserved due to your project

The following are IUCN Threatened species in the Massif de la Hotte KBA: (threat level in parentheses; VU, vulnerable; EN, endangered; CR, critically Endangered).

MAMMALS

Lasiurus minor Miller, 1931 VU
Plagiodontia aedium F. Cuvier, 1836 EN
Solenodon paradoxus Brandt, 1833

BIRDS

Amazona ventralis Müller, 1776 VU
Aratinga chloroptera Souancé, 1856 VU
Calyptophilus frugivorus Cory, 1883 VU
Catharus bicknelli Ridgway, 1882 VU
Corvus leucognaphalus Daudin, 1800 VU
Loxia megaplaga Riley, 1916 EN
Pterodroma hasitata Kuhl, 1820 EN
Tachycineta euchrysea Gosse, 1847 VU
Xenoligea montana Chapman, 1917

REPTILES

Anolis haetianus Garman, 1887 EN
Anolis koopmani Rand, 1961 EN
Typhlops hectus Thomas, 1974

AMPHIBIANS

Eleutherodactylus amadeus Hedges, Thomas & Franz, 1987 CR
Eleutherodactylus aporostegus Schwartz, 1965 EN
Eleutherodactylus apostates Schwartz, 1973 CR
Eleutherodactylus audanti Cochran, 1934 EN
Eleutherodactylus bakeri Cochran, 1935 CR

Eleutherodactylus brevirostris Shreve, 1936 CR
Eleutherodactylus chlorophenax Schwartz, 1976 CR
Eleutherodactylus corona Hedges & Thomas, 1992 CR
Eleutherodactylus counouspeus Schwartz, 1964 EN
Eleutherodactylus dolomedes Hedges & Thomas, 1992 CR
Eleutherodactylus eunaster Schwartz, 1973 CR
Eleutherodactylus glandulifer Cochran, 1935 CR
Eleutherodactylus glaphycompus Schwartz, 1973 EN
Eleutherodactylus heminota Shreve & Williams, 1963 EN
Eleutherodactylus lamprotes Schwartz, 1973 CR
Eleutherodactylus nortoni Schwartz, 1976 CR
Eleutherodactylus oxyrhyncus Dumeril & Bibron, 1841 CR
Eleutherodactylus parapelates Hedges & Thomas, 1987 CR
Eleutherodactylus paulsoni Schwartz, 1964 CR
Eleutherodactylus sciagraphus Schwartz, 1973 CR
Eleutherodactylus semipalmatus Shreve, 1936 CR
Eleutherodactylus thorectes Hedges, 1988 CR
Eleutherodactylus ventrilineatus Shreve, 1936 CR
Eleutherodactylus wetmorei Cochran, 1932 VU
Hypsiboas heilprini Noble, 1923 VU
Osteopilus pulchrilineatus Cope, 1869 EN
Osteopilus vastus Cope, 1871 EN

CRUSTACEANS

Epilobocera haytensis Rathbun, 1893 VU

TREES

Attalea crassispatha (Mart.) Burret CR
Calyptrogenia ekmanii (Urb.) Burret VU
Cedrela odorata L. VU
Cleyera bolleana (O.C. Schmidt) Kobuski VU
Cleyera vaccinioides (O.C. Schmidt) Kobuski VU
Guaiacum officinale L. EN
Guaiacum sanctum L. EN
Guarea sphenophylla Urban VU
Magnolia ekmanii Urb. EN
Micropholis polita (Griseb.) Pierre ssp. hotteana Judd VU
Nectandra caudatoacuminata O.C. Schmidt* CR
Nectandra pulchra Ekm. & O.C. Schmidt CR
Picrasma excelsa (Sw.) Planch. VU
Podocarpus aristulatus Parl. VU
Stenostomum radiatum subsp. haitiensis (Borhidi) Borhidi VU

Hectares Under Improved Management

Project Results	Hectares*	Comments
14. Did your project strengthen the management of an existing protected area? YES	5500 3000	Macaya National Park La Visite National Park
15. Did your project create a new protected area or expand an existing protected area? YES, it created 3 national parks.	370 1510 2265	Grand Bois National Park (legal) Grande Colline National Park (legal) Deux Mamelles National Park (legal)
16. Did your project strengthen the management of a key biodiversity area named in the CEPF Ecosystem Profile (hectares may be the same as questions above). YES.	128,700	*Massif de la Hotte Key Biodiversity Area*
17. Did your project improve the management of a production landscape for biodiversity conservation. n/a	n/a	*List the name or describe the location of the production landscape*

** Include total hectares from project inception to completion*

18. In relation to the two questions above on protected areas, did your project complete a Management Effectiveness Tracking Tool (METT), or facilitate the completion of a METT by protected area authorities? If so, complete the table below. *(Note that there will often be more than one METT for an individual protected area.)*

Protected area	Date of METT	Composite METT Score	Date of METT	Composite METT Score	Date of METT	Composite METT Score
n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a

19. List the name of any corridor (named in the Ecosystem Profile) in which you worked and how you contributed to its improved management, if applicable.

n/a

Direct Beneficiaries: Training and Education

n/a (this component falls under the scope of the CEPF-funded partner, Société Audubon Haiti, reporting separately).

Did your project provide training or education for . . .	Male	Female	Total	Brief Description
20. Adults for community leadership or resource management positions	n/a	n/a	n/a	n/a
21. Adults for livelihoods or increased income	n/a	n/a	n/a	n/a
22. School-aged children	n/a	n/a	n/a	n/a
23. Other	n/a	n/a	n/a	n/a

24. List the name and approximate population size of any "community" that benefited from the project.

Community name, surrounding district, surrounding province, country *Population size*

n/a (this component falls under the scope of the CEPF-funded partner, Société Audubon Haiti, reporting separately).

25. Socioeconomic Benefits to Target Communities

n/a (this component falls under the scope of the CEPF-funded partner, Société Audubon Haiti, reporting separately).

Based on the list of communities above, write the name of the communities in the left column below. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes.

Community Name	Community Characteristics								Nature of Socioeconomic Benefit												
									Increased income due to:												
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists / nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty line	Other	Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance	Other
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

If you marked “Other”, please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit:

Lessons Learned

26. 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

We consider that the project was a success as planned.

27. Project Design Process *(aspects of the project design that contributed to its success/shortcomings)*

We consider that the project was a success as planned.

28. Project Implementation *(aspects of the project execution that contributed to its success/shortcomings)*

We consider that the project was a success as planned.

29. Describe any other lessons learned relevant to the conservation community

We consider that the project was a success as planned.

Sustainability / Replication

30. Summarize the success or challenges in ensuring the project will be sustained or replicated

The legal protection of these areas has been established through declaration of national parks, but conservation management into the future requires sustained resources. Bayard and Hedges founded the Haiti National Trust (www.haititrust.org) in late 2015 to provide the funds for long term maintenance of protected areas in Haiti, but it will be a challenge because the amount of funds needed is very large.

31. **Summarize any unplanned activities that are likely to result in increased sustainability or replicability**

Not applicable to this award.

Safeguards

32. If not listed as a separate Project Component and described above, summarize the implementation of any required action related to social, environmental, or pest management safeguards

Not applicable to this award.

Additional Comments/Recommendations

33. Use this space to provide any further comments or recommendations in relation to your project or CEPF.

Because of the extreme fragility of the ecosystems in the Caribbean region and in Haiti especially, it would be cost-effective for CEPF to continue interests in the Caribbean region and Haiti. Great success can be obtained by doing so, as evidenced by the results of this project. There remains a great need for this in Haiti, with at least 10 additional biodiversity hot spots in need of similar attention (www.haititrust.org).

Additional Funding

34. Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of CEPF investment

Donor	Type of Funding*	Amount	Notes
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

** Categorize the type of funding as:*

A Project Co-Financing (other donors or your organization contribute to the direct costs of this 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 funded project)
*C Regional/Portfolio Leveraging (other donors make large investments in a region because of CEPF investm*ent or successes related to this project)

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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