PD-AAZ-949
ISN 63100

ISPAN

Institut de Sauvegarde du Patrimoine National
86, Avenue John Brown, B. P. 2484 Port-au-Prince, Haïti . Tél.: 2-5286

Port-au-Prince, February 25, 1983

ISP/83/029

Mr. Harlan Hobgood
Director
USAID/Haiti
Port-au-Prince, Haiti

Dear Sir:

Please find attached "A Grant Proposal to USAID/Haiti" concerning the establishment of two national parks in Haiti. We hope that the proposal meets your approval and USAID and ISPAN can cooperate to develop Haiti's natural resources and protect her precious natural heritage.

Respectfully,

Albert Wangonès
Director General
ISPAN

MINISTERE DE LA PRESIDENCE

PROJECT AUTHORIZATION

Name of Country	:	Haiti
Name of Project	:	Establishment of National Parks
Number of Project	:	521-0169(6)

1. Pursuant to Section 531 of the Foreign Assistance Act, as amended, and Chapter VI of the Supplemental Appropriations Act of 1982 (P.L. 97-257), I hereby authorize the Establishment of National Parks Project for Haiti involving planned obligations of not to exceed Two Hundred Thousand United States Dollars ($200,000) in grant funds ("Grant") over a three year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/Allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project ("Project") consists of studies, training, implementation of conservation measures and parks infrastructure development aimed at a) protecting vital watersheds and improving water supply; b) preserving Haiti's unique flora and fauna; c) increasing agricultural production and employment and d) stimulating tourism.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. Regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by A.I.D. under the Grant shall have their source and origin in countries included in A.I.D. Geographic Code 941 or in Haiti, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Grant shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of countries included in A.I.D. Geographic Code 941 or of Haiti.

b. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the GOH shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D.:

(1) An opinion of the Secretary of State of Justice of the Republic of Haiti or other counsel acceptable to A.I.D. that this Agreement has been duly authorized and/or ratified by, and executed on behalf of the Grantee and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms;

(2) A statement of the name of the person holding or acting in the office of the Grantee specified in Section 8.2. of the Project Agreement and of any additional representatives, together with a specimen signature of each person specified in such statement;

(3) Evidence that a separate Bank Account has been established for the Project into which all project funds will be deposited.. The Project Bank Account will bear the signature of three(3) co-signators, at least two of whom must sign documents for release of funds.

c. Conditions Precedent to Disbursement Subsequent to September 30, 1983.

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Grantee except as the Parties may otherwise agree in writing, shall amend the National Park Legislation, which provides for reforestation of eroded areas and the creation of national parks, to include parks at Morne La Visite and Morne Macaya, and to assign responsibility for the administration of the aforesaid parks to the Institute for the Safeguard of the National Heritage (ISPAN) in collaboration with the Department of Agriculture, Natural Resources and Rural Development (DARNDR) and/or the National Park Service.

d. Covenants

The Grantee shall be covenant that, unless the Parties otherwise agree in writing, it will:

(1) Provide adequate budgetary and institutional support for all Project activities and for the continuing operation of the Institute for the Safeguard of the National Heritage (ISPAN);

(2) Recruit and maintain sufficient qualified personnel at all levels required to carry out the objectives of the Project effectively;

(3) Use equipment and vehicles procured under this Project for project related activities only; and

(4) Use the JPIP system or other mutually agreed upon method to systematically monitor the Project.

Harlan H. Hobgood
Director
USAID/Haiti

3/29/83
Date

Clearances:

W.S. Rhodes, DRE	3/28/83 Date
F. Ryder, CONT	3/29/83 Date
J. Gardner, ENG	3/29/83 Date
F. Hayden, A/CSO	3/28/83 Date
D. K. Shannon A/D/DIR	Date

A GRANT PROPOSAL

to

USAID/ HAITI

by

INSTITUT DE SAUVEGARDE DU PATRIMOINE NATIONAL

(ISPAN)

PROJECT TITLE	:	Creation of National Parks Morne La Visite and Morne Macaya Haiti
PROJECT LOCATION	:	Haiti
GRANTEE NAME AND ADDRESS	:	Institut de Sauvegarde du Patrimoine National (ISPAN), Ave. John Brown # 86 B.P. 2484 Port-au-Prince, Haiti
CONTACT PERSONS	:	Albert Mangonès Paul Paryski
DATE OF FORMAL SUBMISSION TO AID	:	February 24, 1983
TOTAL GRANT REQUEST	:	$196,000 (3-5 years)

TABLE OF CONTENTS

	Page
FOREWORD	1
INTRODUCTION	2
THE PROBLEM	3
- Environmental Degradation	3
- Threat to Unique Areas and Life Forms	3
- Inappropriate Land use	3
- Weak National Park Legislation	4
PROJECT DESCRIPTION	4
- Generic Activities	4
- Site Specific Activities	5
- Implementation Responsibilities	7
- Anticipated Problems/Constraints	7
- Schedule and Budget	8
UNIQUE CAPABILITIES OF ISPAN	13
- Mandate to Protect Natural Heritage	13
- Programmatic Experiences	13
- Intergovernmental Linkages	15
RELATIONSHIP OF THE PROJECT TO USAID GOALS IN HAITI	16
SUSTAINABILITY OF THE PROJECT	16
APPENDIX	17

FOREWORD

Two features characterize our time. The first is the almost limitless capacity of human beings for building and creation, matched by equally great powers of destruction and annihilation. The escalating needs of soaring numbers have often driven people to take a short-sighted approach when exploiting natural resources. The toll of this approach has become glaringly apparent: a long list of hazards and diasasters including soil erosion, desertification, loss of cropland, pollution, deforestation, ecosystem degradation and destruction, and extinction of species and varieties. This situation underlines the need for conservation, comprising the ecologically sound management of productive systems and the maintenance of their viability and versatility. The second is the global interrelatedness of actions, with its corollary of global responsibility.

From the Foreword to The World Conservation Strategy, published by the IUCN, UNEP and WWF.

INTRODUCTION

In this proposal, the "Institut de Sauvegarde du Patrimoine National" (ISPAN) requests development assistance for the establishment of two national natural parks in Haiti, one of the few countries in the world which does not have a national park system. The proposed project, the creation of two natural parks in high mountain areas at Morne La Visite and Morne Macaya, is the first step in establishing such a system. The objectives in establishing the two proposed parks are to :

- protect vital watersheds and improve water supply,
- increase agricultural production and employment in the plains below the parks,
- preserve Haiti's unique flora and fauna, an irreplaceable genetic bank,
- stimulate tourism to increase foreign exchange reserves.

Institut de Sauvegarde du Patrimoine National (ISPAN), an autonomous agency of the GOH attached to the Ministry of the Presidence, has an ongoing program to protect Haiti's cultural and natural heritage. This program includes development of national historic parks at the Citadelle and Fort Jacques. The proposed project will extend this program to Haiti's natural heritage.

THE PROBLEM

Environmental Degradation

Due to rapidly rising population density (almost 500/sq.km of arable land) and concommitant severe deforestation of its high mountainous regions for marginal agricultural activities, Haiti faces a major environmental crisis almost without equal in the world. The amount of water available for irrigation, human consumption and other economic activities is diminishing as the need for water is rising exponentially. The irrigation systems of the major agricultural plains are being rendered inefficient by the sedimentation of topsoil, which has been washed down from deforested mountain zones. Thus Haiti's ability to support its people is being irreversibly reduced as poverty forces the people to destroy the very natural resources necessary to free them from poverty and starvation. In fact, a recent study has shown that agricultural production has actually declined over the past few years.

Threat to Unique Areas and Life Forms

The process of deforestation has also affected Haiti's unique natural heritage by severely disrupting and even destroying existing ecosystems. As their natural habitat has been destroyed, Haiti's wildlife have retreated to higher and higher mountainous regions, their last refuge before extinction. These regions, in particular the Massif de la Hotte and the Massif de la Selle, now contain more than twenty-six species of endangered animals including many endemic birds, mammals and reptiles, and a rich and unusual flora.

This unique flora and fauna, about which most Haitians are unaware, constitutes an invaluable genetic bank and a source of information for the world's medical and scientific communities. The loss of this precious natural heritage would be tragic for Haiti and the rest of the world.

Inappropriate Exploitation

The sites of both proposed parks are owned by the Haitian government. Until 1980 the government land in the Massif de la Selle was exploited by various private lumber contractors who successively and extensively damaged the ecosystem through highly destructive forestry practices and by allowing peasant squatters to lease land cleared by timber cutting. The damage was so severe that in 1980 the government declared the entire zone a forest reserve under the direct control of the "Departement de l'Agriculture, des Ressources Naturelles et du Développement Rural" (DARNDR).

The site at Morne Macaya has not been used previously.

Weak National Park Legislation

In 1968 the Haitian government issued a decree calling for reforestation of eroded areas and for the creation of national parks including those at the Citadelle and Forts Jacques and Alexandre. This law has never been actively implemented except at the Citadelle and Fort Jacques for which ISPAN has assumed responsibility. This law is being amended to include parks at Morne La Visite and Morne Macaya, and to assign responsibility for the administration of the parks to ISPAN and DARNDR.

PROJECT DESCRIPTION

The project will be executed by ISPAN in cooperation with DARNDR. ISPAN will subcontract certain specific tasks to the University of Florida, to DARNDR and other appropriate agencies such as the U.S. Park Service. It is estimated that the project will take three to five years to complete.

PROPOSED ACTION PROGRAM

The following is the proposed action program for the project.

Generic Activities

a) to make a survey of land ownership in the two proposed park sites to ascertain if any land is privately held;

b) to undertake a preliminary socio-economic study of the people living and/or working within the proposed park boundries;

c) to complete the biophysical inventory of the park sites that has been started by the University of Florida;

d) to develop a parks management study with the assistance of the U.S. Park Service;

e) to train selected Haitian conservation officers and park guards;

f) to create a parks infrastructure;

g) to publish an educational brochure about the parks and the necessity of protecting the environment.

During the three to five years necessary to complete these activities, the parks will be administered as a project while a functional administrative service is created and its personnel trained.

As noted in the table of activities and the budget, assistance has already been obtained for parts of the biophysical inventory and for a preliminary study of a conservation strategy with grants from the National Science Foundation, the Foundation for the Conservation of Birds and the Charles A. Lindbergh Fund.

Site Specific Activities

To realize the objectives of the project effectively, ISPAN proposes to create two national natural parks at Morne La Visite and Morne Macaya.

Morne La Visite

The proposed park at Morne La Visite occupies roughly 2.000 has. in natural plateau on the western section of the Massif de la Selle, which stretches across the eastern half of Haiti's southern peninsula. This relatively high mountain range whose highest peak is 2.674m in altitude was once covered by native virgin pine forest, montane cloud forest and savanna. It is a striking and beautiful geological formation constituted by a long east-west ridge whose northern slope forms abrupt 1.500m cliffs and whose southern slope is composed of a series of plateaus that gradually descend to the southern coast.

This mountain range is a major water catchment zone and directly influences the climate of a large part of Haiti. The western section in which the park is to be located, receives abundant rainfall and water from condensation of clouds on the pine and broad leaf forests. Due to its unique geological formation, more than two dozen springs are found in the park site as are the sources of two major rivers, La Rivière Grise which irrigates the Plaine du Cul de Sac, and the Rivière Blanche which irrigates the Plaine de Marigot. In the center of the park site a sparkling stream flows out of a cave to join the Rivière Blanche just above a spectacularly beautiful waterfall. Part of this stream is piped to Seguin as its water supply. The entire park site is highly reminiscent of the Colorado Rockies, but contains a greater variety of biozones.

The Park site contains unique and endemic species of flora and fauna that are considered by scientists to be highly endangered. Here are found unusual birds such as the Whitewing Crossbill (Loxia

leucoptera), the Antillian Siskin (Cardualis dominicensis), nesting colonies of the Blackcapped Petrel (Pterodrama hasitata), two species of endemic ground warblers (Microligea palustris and Xenoligea montana), an endemic ground thrush known as the La Selle Thrush (Turdus swalesi), the beautiful Hispaniolan Trogan (Tenmotrogon roseigaster) known in Creole as the "calecon rouge" in honor of its undersides, the melodius Hispaniolan solitaire (Myadestes genibarbis), as well as a parrot (Amazona ventralis) and a parakeet (Aratinga chloroptera).

The site is also a suitable habitat for both Plagiodontia and Solenodon, the only two surviving endemic mammals in Haiti where an abundance of primates, giant ground sloths and insectivores were once present. The Plagiodontia aedium is a rodent that ressembles a large brown furry guinea pig, and the Solenodon paradoxus is an unusual insectivore with a large elephantine nose. In May 1982 a large colony of Plagiodontia was discovered in the park site.

The park site remained untouched for many years since access was difficult and the climate is relatively cold with occasional below freezing temperatures on winter night. Unfortunately due to intense demographic pressure and to a newly-opened access road linking the area to Kenscoff and the Port-au-Prince urban area, the park site is being significantly disturbed by itinerant farmers and squatters who are rapidly destroying the land cover for highly marginal agriculture. As a result the topsoil is being eroded away, and the wildlife is being endangered.

Morne Macaya

The other park site is located on the top of the Massif de la Hotte which dominates the rich and fertile Plaine des Cayes in the western part of the southern peninsula. In the park site a virgin pine and cloud forest still exists virtually untouched, since access to the peaks (altitude 2.400m) is extremely difficult. The area receives the most rainfall in Haiti and, therefore, has a particularly resplendent flora; in fact, eight entirely new species of orchids have been recently discovered in this region. The microclimate of the western tip of the southern peninsula is regulated by these mountains and the rivers feeding the Plaine des Cayes begin on their southern slopes. The fauna of the site is virtually identical to that of the Morne La Visite Area.

In the last few years local people have begun to cut the trees from the lower slopes and have started to plant gardens, resulting in soil erosion. The park site, however, has not been used.

Implementation Responsabilities

ISPAN will be responsible for the implementation of the project. The law establishing the parks will also create an autonomous "Direction Nationale des Parcs et Sites Naturels", attached to the DARNDR and directly responsible to ISPAN, to manage the parks once they are established.

Personnel for the project will be selected from the staffs of ISPAN, DARNDR and the University of Florida. Where necessary experts will be contracted for specific tasks.

Anticipated Problems/Constraints

Certain specific problems may arise during the course of the project. These problems and possible solutions are listed below:

Relocation of the people living with the park boundries.
Preliminary investigation has revealed that very few people are actually living within the park sites. In the Morne La Visite site it is estimated that there are only thirty permanent residents, mostly squatters and another thirty illegal itinerant farmers. In the Macaya site there are no permanent settlers and only a handful of illegal itinerant farmers. The principal squatter in the La Visite site has been informally employed by ISPAN as a forest guard. Other squatters will be either hired as park employees or compensated for their displacement. The parks will generate approximately thirty jobs for locals, and by ensuring the cessation of destructive activities by local squatters and itinerant farmers will help improve the quality of life and agricultural production of those people living in the lands surrounding the parks, in particular the plains of the Cul de Sac, Marigot and Les Cayes.

Utilization of the Parks by tourists.
The management study should provide a guide-line for the appropriate use of the parks for tourists.

Access.
Both park sites are now relatively isolated, a condition which is not necessarily detrimental since it protects the sites until the parks are ready to be developed. A rather poor secondary road now gives limited access to the La Visite site.

Once the parks are established, the construction access roads will be considered dependant of course upon the recommendations of the management plan.

13

PROJECT BUDGET

The following table lists the chronology and estimated costs for the project activities. The costs of certain activities such as the creation of parks infrastructure will of necessity greatly depend upon the biophysical inventories and the proposals that will be suggested by the parks management study.

The estimates for the completion of the biophysical inventory and for the parks management study were supplied by Dr. Charles Woods, Chairman, Department of Natural Sciences, Florida State Museum, University of Florida.

A separate project bank account will be established and subject to periodic examination by USAID and GOH officials.

Since many of ISPAN's personnel are architects or engineers with long working experience in Haiti, they are particularly suited to direct the implantation of the parks infrastructure.

A total of $196,000 is requested for the project. Funding from other sources will be $284,500 and from the GOH $18,050 (mostly salaries and administrative costs).

14

CHRONOLOGICAL DESCRIPTION OF PROJECT ACTIVITIES AND BUDGET REQUIRED :

Activity	Date	CBI/ USAID input	GOH input	Other Input
1. Landholding and socio-economic surveys			4,000	
2. Amendment to 1963 Presidential decree creating national parks to include parks at Morne La Visite and Morne Macaya and establishing a park management	Mar. 1983			
3. Study of the status of birds in the two proposed park sites (status, inventory, and distribution) undertaken cooperatively by the Florida State Museum, the University of Florida (Gainesville) and ISPAN	5/82 to 6/83		1,500	20,000 Foundation for the Conservation of Birds
4. Study of the Evolution and Systematics of the endemic Mammals of Haiti undertaken cooperatively by the Florida State Museum, the University of Florida (Gainesville) and ISPAN	11/82 to 11/86		6,000	250,000 NSF
5. Development of a conservation Strategy for endemic flora, fauna undertaken cooperatively with the Florida State Museum, the University of Florida (Gainesville) and ISPAN	4/83 to 4/84		1,500	10,500 Charles A. Lindbergh Fund

15

Activity	Date	CBI USAID Input	GOH input	Other input
6. Biophysical Inventory				
An indepth biophysical inventory of the resources of the two park sites to include:				
a. Aerial photography	2/82 to 2/84	30,000	2,500	
b. Acquisition of existing maps				
c. Bibliographical research for previous, reports, studies, etc...				
d. Climate				
e. Geology and geomorphology				
f. Hydrography				
g. Flora				
h. Fauna				
i. Human intervention past and present				
This inventory is already underway (see items above)				
7. Plan and Technical assistance a management	1/83 to	10,000	1,550	2,000 NPS
For both parks (the National Park Service of the US Dept. of the Interior has agreed to provide technical assistance). This study should include on the site assistance during the initial phases of implantation of the parks infrastructure. Suggested boundries and buffer zones should be a part of this study.				

16

Activity	Date	CBI/ USAID input	GOH input	Other input
8. Peace corps volunteer to work with ISPAN on project.	10/83 to 10/85			
9. Implantation of parks infrastructure including	1/84 to 1/87			
a) Installation of boundry markers: concrete/spray paint		5,000		
b) Installation of one shelter/dormatory/information center at each park		25,000		
c) Trail and road improvement signs and trail markers		10,000		
d) Reforestation and ercsion control in parks		13,000		
e) Construction of two watch towers		10,000		
f) Printing of small guide brochure with park map		2,000		
g) Partial compensation for displacement of squaters living within park boundries		15,000		
h) Purchase of specialized equipment and materials		10,000		
i) Purchase of vehicules and horses		35,000		
j) Training of Haitian conservation officers and park guards (to be recruited from people living within park land)		20,000		

17

Activity	Date	CBI/ UDAID Input	GOH Input	Other Input
10. Publication of a brochure on Haitian flora, fauna and natural history and the necessity of preserving Haiti's natural patrimony and biosphere	1/84	5,000	1,000	2,000 Local donation from Société Haitienne des Amis de la Nature
11. Travel: Per diem and miscellaneous expenses		6,000		
Total		196,000	18,050	284,500

-18-

UNIQUE CAPABILITIES OF ISPAN

Mandate to Protect Natural Heritage

Institut de Sauvegarde du Patrimoine National (ISPAN) was created in March 1979 by Presidential decree as an independant governmental agency attached to the Ministry of the Presidency whose purpose is to :

- establish an inventory of Haiti's cultural and natural heritage;
- create, coordinate and execute policies concerning this heritage and its protection, conservation and restoration;
- implement a program of information and communication about Haiti's cultural and natural heritage.

As such ISPAN is the only Haitian agency charged with preservation of unique sites throughout the country.

Programmatic Experience

Since its inception, ISPAN has initiated a number of projects vital to protection and preservation of Haiti's unique patrimony and resources:

1. Historic Site Restoration

These activities have included:

a) The restoration of the Citadelle, the Palace of Sans Souci and the fortifications of Ramiers, Haiti's most impressive and symbolic national monuments, and the creation of a National Historic Park at the site. This project is being carried out in cooperation with UNESCO which has launched an international campaign to save these monuments now declared "Patrimoine Mondial".

b) The restoration of Fort Jacques (1806) and Fort Alexandre (1820) and their establishment as a National Historic Park at their respective locations in the mountains overlooking Port-au-Prince.

2. Archeological Excavation

A number of activities are in progress or are planned, but ISPAN's major work presently focuses on the archeological excavation of the site of Puerto Real, Spanish Colonial city in the north of Haiti that was established in 1503 by Nicolas Ovando and abandoned roughly eighty years later. Puerto Real was ont the first Spanish

cities to be founded in the New World. Nearby lies the ruins of the Indian village of Guacanagaric and as recent evidence seems to suggest, the ruins of the Navidad, the first Spanish settlement established by Christopher Colombus in the Americas.

These sites of the nearly Indian village of Guacanagaric will be investigated in 1983. This project is being carried out jointly with the University of Florida (Gainesville) and the OAS.

3. Inventory of Historic Sites

An inventory of Haiti's historic sites and monuments including important buildings and houses is being conducted. This project is being conducted in cooperation with the National Tourist Office (ONTRP).

4. Educational Programs

ISPAN has worked to establish an educational program about Haiti's heritage. A color brochure about the Citadelle and Sans Souci Palace has been published and ISPAN has cooperated with the BBC (UK) to produce a documentary about Toussaint Louverture, with UNESCO to produce a documentary about the Citadelle, Sans Souci and Ramiers, and with French Television to produce a documentary on Haiti which included historic sites and monuments. ISPAN hopes to expand this program.

5. Special Studies

Close cooperative agreement and investigaitons have been established with foreign institutions in order to more comprehensively address the need to understand segments of Haiti's national heritage and natural history, including undertaking studies in cooperation with the University of Florida and DARNDR for the establishment of a system of natural parks. These studies include :

- Status of Birds in the two proposed park sites funded by the Foundation for the Conservation of Birds ($20,000);
- Evolution and Systematics of the Endemic Mammals of Haiti funded by the National Science Foundation ($250,000);
- Development of a Conservation Strategy for Endemic Flora and Fauna, funded by the Charles A. Lindbergh Fund ($10,500);
- Status and Natural History of the American Crocodile in Haiti funded by the New York Zoological Society ($15,000);
- Status of the Manatee in Haiti, funded by the U.S. Fish and Wildlife Service ($6,000);

- Status of the Sea Turtle funded by the U.S. Fish and Wildlife Service ($5,000).

Intergovernmental Linkages

ISPAN has established a close working relationship with the Department of Agriculture (DARNDR) to ensure the protection of Haiti's natural patrimony. ISPAN and DARNDR personnel have worked together on surveys of manatees and sea turtles, and on proposals for the development of a natural park system. As a result of this relationship, DARNDR has hired a full-time consultant for the protection of the flora, the fauna and the ecosystem. The present and previous Ministers of Agriculture have written to the Director General of ISPAN to endorse the parks project and offer their full support. Copies of their letters are attached.

At the request of the present Minister of Agriculture, the DARNDR ecology consultant visited the Morne La Visite site to assess its present status, analyze the flora and fauna, and suggest provisional boundaries.

ISPAN also works closely with the National Tourist Office (ONTRP) to ensure the most beneficial and appropriate use of historic and natural sites. The Fort Jacques and Fort Alexandre restoration project was largely financed by ONTRP. ISPAN and ONTRP have jointly published an inventory of touristic and cultural sites.

21

RELATIONSHIP OF THE PROJECT TO USAID GOALS IN HAITI :

1. This project will have a beneficial impact of the availability of water to both the Acul and Marigot regions which have been selected by USAID for soil conservation and irrigation programs in the PDAI Project.

2. The project will compliment USAID's Agroforestry Outreach Project, which concentrates on reforesting private lands. The project would ensure the beginning of a land management program and reforestation of Government owned lands. It would also ensure the protection of already existing forests.

3. In more general terms the project will help to meet three more of USAID's nine central objectives in Haiti :

   - improving basic rural infrastructure
   - strengthening public and private Haitian institutions
   - training local personnel.

4. "Ecological Aspects of Development in the Humid Tropics", a study commissioned by USAID, states that one of the most effective ways to preserve the environment is :

   > to retain intact substantial parts of humid tropical ecosystems to serve as parks and reserves... This approach... affords excellent long-term environmental protection and makes possible programs leading eventually to maximum sustained yields.

SUSTAINABILITY OF THE PROJECT

Although the financial assistance ISPAN is requesting from USAID is relatively small, we believe that if it is granted it will have a profound and continuing effect on the development of parks and land management in Haiti for the following reasons :

- other donors have expressed their interest in the project. Grants have already been received from such organizations as the National Science Foundation, the Society for the Conservation of Birds and the Lindbergh Fund. The University of Florida and the Florida State Museum have pledged their ongoing support to the project through their cooperative agreement with ISPAN, and both the World Wildlife Fund and the S. Dillon Ripley of the Smithsonian Institution, have expressed their interest in supporting the project.

-22-

- the U.S. Park Service has started its willingness to extend its international parks development program to Haiti with technical assistance and a management plan.

- the World Bank Haiti forestry project will promote for the creation of effective buffer zones around the Morne La Visite Park.

23

APPENDIX

A.- Curriculum Vitae

Albert Mangonès

Dr. Charles Woods

Paul Paryski

B.- Letters of support

C.- Maps

D.- Article by Dr. Charles Woods

E.- Memo Dr. Charles Woods

F.- Recommendations from The Birds of Haiti and the Dominican Republic
Swales and Wetmore (Smithsonian Institution, 1931)

G.- DARNDR Report

24

CURRICULUM VITAE

ALBERT MANGONES

EDUCATION

Primary School	:	Institut St. Louis de Gonzague Port-au-Prince, Haiti
Secondary School	:	Institut St. Louis de Gonzague Port-au-Prince

PROFESSIONAL TRAINING

1936 - 1937	:	Institut Agronomique de Gembloux Belgium
1937 - 1939	:	Académie des Beaux Arts de Bruxelles Belgium
1939 - 1942	:	Bachelor or Architecture Cornell University Ithaca, New York, U.S.A. Note.- Received the "SAM GOLDWIN MEDAL" upon graduation (it had been conferred three times during a fifteen year period).

LANGUAGES

French	:	Fluent
English	:	Fluent
Spanish	:	Excellent

.../...

25

ALBERT MANGONES

PROFESSIONAL ACTIVITIES

1942 - 1943	:	Architectural research and design for the "John B. Pierce Foundation" New York, U.S.A.
1943	:	Architect-designer for Arch. Enrique de la Mora Mexico City on the plans of a major hospital
1943 - 1946	-:	Architect attached to the City of Port-au-Prince Municipal Service
	-	General Secretary of the Bureau of Ethnology
	-	Co-Founder and General Secretary of the "Centre d'Art"
	-	Private Architectural office residential work
1946 - 1948	:	Engaged by the United Nations Department of Social Affairs Assigned to work with the team of architects working for "Abramowitz & Harrison", on the plans of the Secretariat building in Manhattan
1949	:	Architect-Designer of the Folkloric Section of the Bi-Centenial of Port-au-Prince
		Appointed "Regisseur" of all the works of the Fair by President Estime
1950 - to date	:	Director Owner of the Private Architectural Office
1968	:	Architect and Sculptor of the "Marron de Saint Domingue" - Port-au-Prince, Haiti
1970 - to date	:	Director of the "Service de Conservation des Sites et Monuments Historiques d'Haiti".

ALBERT MANGONES

1972 - 1977	:	Permanent consultant for the "Division d'Aménagement du Territoire et Protection de l'Environnement" for the "Development and Planification National Council" Port-au-Prince, Haiti
1978	:	President of "Haiti Habitat S.A." (Société de Construction)
May 10, 1979	:	Appointed Director General of the "Institut de Sauvegarde du Patrimoine National (ISPAN)" Port-au-Prince, Haiti

JUIN 1981

VITAE

CHARLES A. WOODS

U.S. Citizen

Marital Status:

Address: Museum: Department of Natural Sciences
Florida State Museum
University of Florida
Gainesville, Florida 32611
(904) 392-1721

Education: B.A. Zoology 1964 University of Denver
Ph.D. Zoology 1970 University of Massachusetts

Language Ability: Spanish, Haitian Creole (speaking and reading)
French, German (reading only)

Current Position(s): 1979 - Present
Chairman, Department of Natural Sciences
Associate Curator of Mammals
Florida State Museum
and
Joint Associate Professor of Zoology
Joint Associate Professor of Latin American Studies
University of Florida

Previous Positions: Assistant Professor of Zoology 1970-1971
University of Denver

Assistant Professor of Zoology 1971-1976
Associate Professor of Zoology 1976-1979
University of Vermont

Professional Societies: American Society of Naturalists
American Society of Mammalogists
Society of Systematic Zoology
Society for the Study of Evolution
Society of Sigma Xi
Northeastern Bird Banding Association
Society of Vertebrate Paleontology
American Society of Zoologists
Biological Society of Washington

28

Field Experience:

Research Assistant to Dr. K.R. Porter on a NSF sponsored project studying evolution of the genus *Bufo* in Mexico and Central America.

Research Assistant to Dr. Dana Snyder on an AEC sponsored project studying population dynamics of *Tamias* in southern Vermont.

Project leader on 12 extended field trips to the Republic of Haiti and the Dominican Republic between 1973 and the present time.

Teaching Experience:

Undergraduate:	General Biology 1973-1977
	Human Anatomy and Physiology 1971
	Natural History 1970
Undergraduate: and Graduate	Mammalogy 1970; 1979-81
	Comparative and Functional Anatomy 1971-79
	Natural History of Birds and Mammals 1972-79
	Physiological Ecology 1971-77
	Winter Ecology 1976
	Vertebrate Evolution 1978
	Phylogenetic Systematics 1978
	Seminars

Graduate Student Supervision:

Since 1971, 13 graduate students have completed theses under my supervision (10 MS and 3 Ph.D.). The areas of specialization were: Ecology (7); Anatomy (5); Systematics (1). I currently have graduate students doing theses on functional morphology of bats, conservation and ecology of Caribbean mammals and the conservation of the Humboldt Penquin.

Current Research:

Evolution and systematics of Antillean land mammals
Natural History of the Hispaniolan hutia, *Plagiodontia aedium*
Functional biology of mastication in rodents
Evolution and systematics of rodents of the suborder Hystricognathi
Biology of *Microtus* in Florida
Conservation of endangered land mammals on islands

Research Grants and Awards:

World Wildlife Fund	
1981-1982 Conservation work in Dominican Republic	$ 5,000.
Reynolds Foundation	
1982 Fieldwork in Haiti	1,000.
Faculty Development Award, University of Florida	
1981 New techniques in systematics	3,300.

Faculty Development Award, University of Florida 1981 Biology of Plagiodontia in the Dominican Republic	$6,000.
Flora and Fauna Preservation Society 1981-82 Conservation work in Dominican Republic	600.
National Science Foundation 1978-1980 Evolution and Adaptive Radiation of the Endemic Rodents of Hispaniona	54,837.
National Science Foundation SEED 1977-1978 The Development of an Effective Conservation Program in the Republic of Haiti	6,650.
Fauna Preservation Society 1977-1978 Final Assessment of the Status of Solenodon, Paradoxus and Plagiodontia aedium in All Regions of the Island of Hispaniola	200.
Organization of American States Postdoctoral Fellowship 1977-1978 Natural History and Paleontology of Hispaniola	4,000.
American Philosophical Society 1977-1978 Evolution of Hispaniolan Rodents	1,000.
American Philosophical Society 1974 Natural History of Plagiodontia aedium in Haiti	825.
American Philosophical Society 1972 Evolution of Hystricognath Rodents	1,000.
National Geographic Society 1974 Natural History of Plagiodontia aedium in Haiti	6,920.
National Geographic Society 1975 Transportation of Captive Specimens of P. aedium	473.
National Geographic Society 1975 Support of Lab Colony of Plagiodontia aedium	480.
Public Health Service (UVM Institutional Grant) 1977 Functional Morphology of Rodent Jaws	2,272.
Public Health Service (UVM Institutional Grant) 1974 Electromyography of Rodent Mastication	3,800.
National Science Foundation (UVM Institutional Grant) 1973 Anatomy of Hystricomorph Rodents	2,000.
National Science Foundation (UVM Institutional Grant) 1972 Myology of Hystricognathous Rodents	3,000.
University of Vermont Graduate College 1976 Travel Support to Haiti	500.
Reynolds Haitian Mines, Inc. (Haiti) 1972-1976 Accommodations and travel support - Miragoane, Haiti	

Publications:

1967 The Study of Mammals. Focus Outdoors 1: 19-20.

1968 The Study of Mammals (Revised). Focus Outdoors 2: 27-28.

1968 The Ecology of Westfield, Massachusetts. Special Publications, City of Westfield.

1970 Understanding Mammals. Focus Outdoors 4: 130-133.

1970 Investigating Microhabitats. Innovative Learn. Int. pp. 1-13.

1970 The Teaching of Ecology. Innovative Learn. Int. pp. 1-20.

1971 The Comparative Myology of New and Old World Hystricomorphous Rodents. American Zoologist 11: 706.

1972 Comparative Myology of Jaw, Hyoid and Pectoral Appendicular Regions of New and Old World Hystricomorph Rodents. Bull. Amer. Mus. Nat. His. 147(3): 117-198.

1973 Erethizon dorsatum. Mammalian Species 37: 1-6, 2 figs.

1973 The Evolution of Hystricomorphous Rodents and their Jaw Mechanism. Yearbook Amer. Phil. Soc., 362-363.

1975 Banding and Recapture of Wintering Warblers in Haiti. Bird Banding, 46(4): 344-346.

1975 (Woods and Boraker) Octodon degus. Mammalian Species 67: 1-5, 4 figs.

1975 The Life History of the Haitian Hutia, Plagiodontia aedium. Yearbook Amer. Phil. Soc., 374-375.

1975 The Hyoid, Laryngeal and Pharyngeal Regions of Bathyergid and Other Selected Rodents. Jour. Morphology 147(2): 229-250.

1976 Deciduous Premolars in Thryonomys. J. Mamm. 57(2): 370-371.

1976 Solenodon paradoxus in Southern Haiti. J. Mamm. 57(3): 591-592.

1976 The Biology of Hystricomorph Rodents (Book Review). Quart. Rev. Biology 51(1): 156.

1976 What is a Hystricomorph-Histricognath Rodent? Amer. Zool. 16(2): 268. (abstract).

1976 How Hystricognath Rodents Chew. Amer. Zool. 16(2): 215. (abstract).

1977 (Woods and Howland) The Skin Musculature of Hystricognath and Other Selected Rodents. Zbl. Vet. Med. C. Anat. Hist. Embryol. 6: 240-264.

Publications: (cont.)

1979 (Woods and Howland) Adaptive Radiation of Capromyid Rodents. I. Anatomy of the Masticatory Apparatus. J. Mamm. 60(1): 95-116.

1979 Adaptive Radiation of Hispaniolan Rodents. Amer. Zool. 19(3): 1011. (abstract).

1980 Collecting Fossil Mammals in the Greater Antilles: An Immense Journey. Plaster Jacket 34: 4-13.

1980 El Solenodon paradoxus en el Sur de Haiti. Dept. Agricul. Spec. Pub., Santo Domingo pp. 1-5.

In Press Biological Survey of Haiti: Status of the Endangered Birds and Mammals. National Geographic Society Research Reports.

In Press Evolution and Systematics of South American Hystricognath Rodents. Spec. Pub., Pymatuning Lab. Univ. Pittsburgh.

In Press Hispaniola's Last Two Endemic Mammals. Oryx (Spring issue).

In Press Six Years of Banding in Shelburne, Vermont: A Summary and Analysis. Vermont Natural History (Woodstock).

In Press The Families of Hystricognath Rodents of the World. (Chapter in 2nd edition of Anderson, S. and J.K. Jones. Recent Mammals of the World).

In Press Octodontidae; Ctenomyidae; Echimyidae; Abrocomyidae; Myocastoridae; Capromyidae; Chinchillidae; Dasyproctidae; Agoutidae; Cavidae; Hydrochaeridae; Erethizontidae. Mammal Species of the World. Assoc. Syst. Collection.

In Press Red Data Book accounts for Plagiodontia aedium; Geocapromys brownii; Geocapromys ingrahami; Capromys nana; Capromys melanurus.

In Press (Hermanson, Woods and Howell) Dental Ontogeny in the Old World Leaf-Nosed Bats. J. Mamm.

In Press (Kilpatrick and Woods) Hemidactylium scutatum (Four-toed Salamander). Herpetological Review.

Manuscript submitted (Anderson and Woods) Geocapromys brownii. Mammalian Species.

Manuscript submitted (Franz and Woods) A Fossil Tortoise from Hispaniola. J. Herpetology.

Manuscript submitted (MacPhee and Woods) A New Fossil Cebine from Hispaniola (to Amer. Journ. Phys. Anthropology).

Publications: (cont.)

Manuscript submitted (MacPhee, Woods and Morgan). The Affinities of Alterodon major - The Alleged Octodontid (Rodentia: Hystricognathi) from Jamaica. J. Mamm.

Manuscript submitted (Woods, Chapman and Contreras). Myocastor coypus Mammalian Species.

Reports:

1975 The Natural History of the Haitian Hutia: A Preliminary Report. Manuscript submitted to the Department de l'Agriculture, Republic d'Haiti. 15 pp.

1977 Summary of the Conservation Work by Charles A. Woods and Richard C. Rosen in Southern Haiti. Manuscript submitted to the Department de l'Agriculture, Republic d'Haiti. 8 pp. + 10 attachments. French and English versions.

1977 Biological Survey of Haiti; Status of Plagiodontia aedium and Solenodon paradoxus and Recommendations Concerning Natural Preserves and National Parks. Bound manuscript submitted to the Department de l'Agriculture, Republic d'Haiti. 32 pp. + 6 maps + 31 photographs. French and English versions.

Paul Edward PARYSKI

Education : Primary and Secondary school :
Maumee Valley Country Day School
1949-1961, Maumee, Ohio
Graduated honors 1961

Undergraduate
B.A. Williams College
1961-1965
Graduated 1965 with honors
in European History

Graduate
M.A. Teaching of History, 1967
Columbia University
New York, N.Y.

Professional experience :

1966 : Salesperson (during graduate school)
Creative Playthings, Rockfeller Plaza
New York, N.Y.

1966-1968 : Teacher of History
JHS 149, Bronx, N.Y.

1968-1972 : U.S. Foreign Service (U.S.I.S.)
2nd Secretary/Asst. Cultural Attaché
American Embassy, London, England
Vice Consul/Asst. Public Affairs Officer
American Consulate General
Casa Blanca, Morocco

1972-present : Co-director Third Eye Design
Studio (graphic design/photography/advertising)
Port-au-Prince, Haiti

1973-1975 : Consultant au Musée d'Art Haitien
Port-au-Prince, Haiti

.../...

1979-present : Assistant Director and co-founder Institut de Sauvegarde du Patrimoine National
Port-au-Prince, Haiti

Major projects:

- Restoration of Citadelle Henry Christophe and Palais Sans Souci
- Restoration of Ft. Jacques and Ft. Alexandre
- Archaeological Project Puerto Real (with University of Florida and Organisation of American States)
- Natural Parks and Natural History Project (with University of Florida)

1982 : Field Associate Florida State Museum
University of Florida
Gainesville, Florida, USA

Member of I.C.O.M.

Office : ISPAN
59 Ave. John Brown
P.O. Box 2484
Port-au-Prince, Haiti
Tel: 2-5286; 2-2321; 2-5479

Languages : English
French
Creole

THE FLORIDA STATE MUSEUM
UNIVERSITY OF FLORIDA

DEPARTMENT OF NATURAL SCIENCES

the florida state museum
museum road
university of florida
gainesville
32611
904/392-1721

December 27, 1982

Son Excellence
Agronome Remillot Leveille
Secretaire d'Etat
Departement de l'Agriculture, des Ressources
Naturelles et des Developpement Rural
Damien (Port-au-Prince)
Haiti

Cher Monsieur le Secretaire d'Etat:

I enjoyed our meeting in November and found our conversation rewarding and productive. I am impressed with the quality of your staff and have a high regard for Jean Francois Jean Baptiste, who is responsible for the supervision of the forests in the Morne La Visite area. I look forward to working closely with you and your excellent staff in the future.

It is now my duty as the ecological consultant for the Institut de Sauvegarde du Patrimoine National to make you aware of what I consider to be an emergency situation on Morne La Visite. As you know, I have been working as an ecologist in Haiti for over 10 years, and spent several weeks in March, May, and December of this year working on Morne La Visite. The results of these studies indicate that the flora and fauna of the area are very important. This flora and fauna is unique to the Natural Patrimony of Haiti, and many elements are still present in the Morne La Visite area. The most fragile and important of these plants and animals are the following:

Black-capped Petrel.-- This species is a rare oceanic bird that breeds during the winter months on steep rock cliffs near Morne La Visite. This area in Haiti is one of only two known breeding sites for this bird in the world.

La Selle Thrush.-- This bird species was described in 1929, and at that time was found only in certain habitats near Morne La Visite. It is now even more restricted in its range in Haiti, and is found in pockets of wrack bois (mountain cloud forest) near the ridge from Morne La Visite and east toward Morne La Selle.

Chat Tanager.-- This species of bird lives in thick cloud forest. It is considered one of the rarest birds of the Dominican Republic, and is even more rare in Haiti because of habitat loss.

Zagouti (Plagiodontia aedium).-- This species of mammal is extremely rare. It was described in Haiti in 1836 by the French biologist Cuvier, and is now extremely endangered. The reason for its near extinction is the loss of its primary habitat, which is moist forest.

In addition to the above animals, all of which are present in Morne La Visite, there are two other species of birds which I recorded for the first time in Haiti (Lincoln's Sparrow and Cedar Waxwing), as well as many endemic plants that are restricted to the wet cloud forest on the north face of Morne La Visite and eastward toward La Selle. All these plants and animals are important species to the Patrimony of Haiti.

They are also "indicator species," because they are restricted in a large measure to the moist forest on the north side of Massif de la Selle. When the cloud forest is cut or destroyed by burning, the species are eliminated (or worded more correctly, the loss of the species is an indication the habitat is destroyed and that the irreversible cycle of erosion, aridity, and reduction in water resources has expanded).

The ecological situation on Morne La Visite is critical. Since May of 1982, many new gardens have been created on the north slope of the mountain by burning the cloud forest and cutting down the larger trees. These new gardens have isolated the critical forest habitats to small patches of usually no more than 0.5 hectares. The sites of the gardens are so steep that in most cases a person is unable to walk in them without causing the thin layer of topsoil to slide down the mountain. The topsoil is easily washed away by rainfall. The birds of the area are now required to fly great distances between habitats, and the zagouti is isolated into two areas of suitable habitat, which has been reduced by over 50% since May.

Based on my observations in March, May, and December, the habitat on the north slope between Morne La Visite and Morne Cabaio is being reduced at such a rate that if it continues at the same rate most of it will be eliminated in the next year. As a biologist, I feel it will be a disaster when this occurs, because many species of plants and animals of great scientific importance will be eliminated. As the ecological consultant for ISPAN it will be a disaster, for I must report that the natural patrimony of Haiti has been damaged. But most important of all, it will mean that the natural resources of Haiti are further reduced, and that one of the main areas of water conservation for the rivers of central Haiti will be severely damaged.

This disaster can be prevented if the following actions are immediately implemented.

1. No future gardens can be created on the Northface of Morne la Visite - Morne Cabaio above 1600 meters.

2. All existing gardens between 1800 meters and the ridge line in this area must be immediately abandoned. In all of these gardens the valuable trees are regenerating from the stumps of the newly cut (or burned) vegetation, but in one more cycle of cutting and burning, they will be dead forever. This action will protect the animals, the soil, and the water resources of the lower basin.

3. A water conservation zone must be established within 100 meters of the ridge on the south slope of the mountains. This will protect the existing vegetation, and allow new vegetation to grow. This vegetation causes water to condense out of the nearly constant clouds that blow across the ridge, and increase the amount of water available to regions at lower elevations. This effect is well documented, and I observed extensive precipitation in the areas where forest cover remains. In one ravine a small river flowed to the south within 500 meters of the ridge line, in spite of several weeks without rain. The only source for this water was precipitation from condensation from clouds flowing through the vegetation.

4. The areas of ravines and moist "wrack bois" areas on the south slope between 1900 meters and the ridge must be protected by establishing a 100 meter buffer zone around them to protect the forest and water conservation potential.

If these actions are taken immediately (and somebody is put in the area to enforce these actions) then a natural disaster of great consequences to Haiti can be prevented. I recommend that strong measures be taken to protect this habitat. I volunteer to do whatever is necessary to ensure that this disaster does not occur.

I recommend that you declare the Morne la Visite - Morne Cabaio area a "conservation emergency zone" and enpower somebody to enforce regulations. I also recommend that we seek immediate legislation that will protect this zone as a national park. I will provide you with any data or information that will help you in this important job. I would be willing to meet with President Duvalier in an emergency conference and to present him with the data and information needed to support these actions. I feel that this meeting is very important and hope that will be able to schedule such a conference. This is an important moment in the history of natural resources in Haiti. If we can now work together to protect the flora, fauna, and water resources of this site, in the shadow of Port-au-Prince and with many special plants and animals of unique scientific and historic importance, then we can prove that there is hope for the future of Haiti. The future of Haiti is closely tied to the availability of water, and without quick action, one of the major water conservation zones of the country will be lost forever.

I seek your help in finding a solution to this critical problem, which I advise you is serious enough to be described as a conservation emergency.

Sincerely,

Charles A. Woods
Chairman and
Curator in Mammalogy

CAW/rjb

cc: Arch. Albert Mangonès
Directeur Général - ISPAN

ARC

Animal Research and Conservation Center

Bronx Zoo
Bronx, New York 10460
(212) 220-5155

January 14, 1983

att Agr. Carnaguet

Monsieur Remillot Leveille
Secretaire d'Etat
Departement de l'Agriculture, des Ressources
Naturelle et des Developpement Rural
Damien (Port-au-Prince)
Haiti

Dear Monsieur Leveille:

We have learned that the proposed Morne La Visite National Park, one of the only tracts of land in Haiti still not deforested, is being encroached upon by gardeners, adding to the deprivation of your country.

Since our survey of the Morne La Visite area some years ago, which led to the discovery of the black-capped petrel there, the New York Zoological Society has had a keen interest in the protection of the park. Morne La Visite is a key wildlife refuge for Haiti, and as a watershed, it is vital to the economic recovery of the region. We urge you to take the steps necessary to terminate all farming in this last green space in Haiti and to establish a truely viable national park. The consequences of not doing so will be further socio-economic declines.

If the New York Zoological Society can assist you in this endeavor, please feel free to call on us. In the meantime, please accept our congratulations for the advances in conservation you have brought to your country thus far.

Sincerely,

Archie Carr III

Archie Carr III
Assistant Director
Animal Research and Conservation Center

AC/cb

Departement de l'Agriculture des Ressources Naturelles et du Developpement Rural
Recu JAN 26 1983
No 1161

UNIVERSITY OF CALIFORNIA, BERKELEY

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO SANTA BARBARA • SANTA CRUZ

VIA AIRMAIL

4 January 1983

Reply to:
MUSEUM OF VERTEBRATE ZOOLOGY
2593 LIFE SCIENCES BUILDING
BERKELEY, CALIFORNIA 94720
United States of America

att. Carta
26-1-83

Monsieur Remillot Leveille
Secretaire d'Etat
Departement de l'Agriculture,
des Resources Naturelle et des
Developpement Rural
Damien (Port-au-Prince)
HAITI

Cher Monsieur Leveille:

I have recently become aware of efforts by your Department to establish a national park in the Morne La Visite area of southern Haiti. I would like to applaud this important development and urge you to act as quickly as possible to protect this critical area.

It is apparent that the steep slopes and cloud forests of the Morne La Visite area contain the last remaining habitat of a number of species of birds and mammals that are of extremely great scientific interest. The zagouti (Plagiodontia aedium), for example, belongs to a relict family of rodents (Capromyidae) found only on Carribean islands and that is rapidly declining throughout the area.

Of greatest significance, however, is the preservation of natural areas for the future well-being of Haiti. Without its unique fauna and flora, the national heritage of a people is severely compromised, and without its natural resources economic and social prosperity is impossible. There is no shortage of evidence for the principle that once a country fails to conserve its natural resources, especially its soil and water, economic and social disaster soon follow. As I am sure you know, the establishment of national parks, forest reserves, and wildlife refuges are critical and necessary steps in good natural resource management.

The situation at Morne La Visite seems to be urgent. Please do what you can to preserve as much as possible of this unique and sensitive area. The world scientific and conservation communities will be delighted if you succeed, and the people of Haiti will receive a significant contribution to their future prosperity.

As co-chairman of the Rodent Specialist Group of the Species Survival Commission (IUCN), I would be pleased to be of any assistance that I can in supporting your efforts on behalf of a Morne La Visite National Park. In particular, we could provide you with information on the status and habitat requirements of the endangered zagouti should this be useful to you.

Departement de l'Agriculture des Ressources Naturelles et du Developpement Rural
Recu JAN 21 1983
No 1057

Respectfully yours,

William Z. Lidicker, Jr.
Professor of Zoology

40

INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

UNION INTERNATIONALE POUR LA CONSERVATION DE LA NATURE ET DE SES RESSOURCES

Conservation Monitoring Unit — Centre de surveillance continue de la conservation de la nature

JT/VG

Act. Carsaghol 11/2/83

27 January 1983

Monsieur Remillot Leveille
Secrétaire d'Etat
Département de l'Agriculture, des Ressources
Naturelles et du Développement Rural
Damien (Port-au-Prince)
Haiti

Departement de l'Agriculture des Ressources Naturelles et du Developpement Rural
Recu FEB 17 1983
No 1395

Dear Monsieur Leveille,

I am writing to you on the subject of Morne La Visite. I believe this important area is currently being eroded by the spread of garden plots and unless urgent action is taken to establish it as a National Park the area will be destroyed.

Morne La Visite contains many species of great world rarity: for example, the La Selle Thrush, the Black-capped Petrel, the Chat Tanager and the Zagouti. The Zagouti is included in the IUCN Red Data Book of Mammals of which I am the compiler.

I believe the Morne La Visite is also an important watershed area for the rivers of central Haiti and therefore is important for agriculture at lower elevations.

Sir, the conservation of the Morne La Visite is of world importance and any actions you can take on its behalf will be of great value.

Yours sincerely,

D. M. Jack.

-41-

Att. Cassagnol

INTERNATIONAL COUNCIL FOR BIRD PRESERVATION
FOUNDED IN 1922

PRESIDENT: RUSSELL W. PETERSON
PRESIDENT EMERITUS: S. DILLON RIPLEY
MUSEUM OF NATURAL HISTORY 336
SMITHSONIAN INSTITUTION
WASHINGTON, D.C. 20560, U.S.A.
(202) 357-3195

DIRECTOR: CHRISTOPH IMBODEN
219C HUNTINGDON ROAD
CAMBRIDGE CB3 0DL ENGLAND
(0223) 277-318

January 24, 1983

Monsieur Remillot Leveille
Secretaire d'Etat
Departement de l'Agriculture, des Resources
Naturelle et de Developement Rural
Damien, (Port-au-Prince)
Haiti

Departement de l'Agriculture des Ressources Naturelles et du Developpement Rural
Recu FEB 11 1983
No 1329

Dear Monsieur,

On behalf of the International Council for Bird Preservation I would like to let you know that conservationists all over the world are concerned about the urgent need to protect Morne La Visite. The burning and clearing of forest that has taken place on the north slope of the mountain during the last year have made the need to establish rigorous conservation regulations all the more pressing. We understand that if the present rate of settlement continues, the ecologically important areas will be destroyed by next year. If, however, settlers are moved away soon, there is an excellent chance the forest habitat will regenerate.

There are several important reasons the protection of Morne La Visite has aroused international concern.

--- Several birds unique to Hispaniola have their best chance of survival in Haiti on Morne La Visite. These include the Black-capped Petrel, La Selle Thrush, and Chat Tanager

--- Unusual mammals, such as the Zagouti (Plagiodontia aedium) now near extinction, are found on Morne La Visite.

-42-

--- The slope of Morne La Visite is so steep that even walking causes the thin topsoil to loosen and wash away.

--- The loss of forest on these steep slopes will cause the soil to erode in heavy rains and will cause flooding at lower elevations, thereby damaging important agricultural areas.

--- The loss of forests also reduces the amount of water available to the lower elevations because the forests condense water in clouds that would not otherwise come as rainfall.

Protecting the forests on Morne La Visite is essential to the survival of the unique natural patrimony of Haiti and to the well being of Haitians who depend on agricultural areas at lower elevations.

The Council hopes you will prevent the further destruction of the unique and irreplaceable forests of Morne La Visite. The rate at which forest is being lost makes it most urgent that you establish a water conservation zone and have all existing gardens between 1800 meters and the ridge line abandoned. Only prompt action and rigorous protection of these forests will assure their preservation for the future well being of Haitian wildlife and people.

Sincerely yours,

Russell W. Peterson

Russell W. Peterson
President

43

FAUNA & FLORA PRESERVATION SOCIETY

Patron Her Majesty the Queen

c/o ZOOLOGICAL SOCIETY OF LONDON, REGENT'S PARK LONDON NW1 4RY 01-586 0872

Cables: Faunasoc London NW1

President Sir Peter Scott CBE DSC

Chairman of Council Lord Craigton PC CBE
Vice-Chairman Richard Fitter
Hon. Treasurer T. A. P. Walker

Hon. Secretary David Jones BVetMed BSc MRCVS
Hon. Editor of Oryx Mrs. M. S. Fitter
Executive Secretary John A. Burton

Our Ref: RSRF/JW/C3

Monsieur Remillot Leveille,
Secrétaire d'Etat,
Departement de l'Agriculture, des Ressources
Naturelle et des Developpement Rural,
Damien (Port-au-Prince),
Haiti

27th January 1983

Monsieur le Secrétaire d'Etat,

Notre Société aimerait attirer votre attention sur le besoin très urgent de conserver l'environnement du Morne La Visite, le Parc National proposé, au sud de Haiti, ainsi que les ressources d'eau, le faune et la flore qui s'y trouvent et qui sont maintenant presque unique dans votre partie du monde. Il est surtout important que vous prenez des mesures pour avertir une plus grande perte d'habitat par des petits terrains des fermes et par la brûlure pour le charbon de bois. Si possible il faudrait que ces secteurs du Parc National qui ont été perdus, soient réclamés.

Chaque jour qui passe fait diminuer la valeur du Parc pour les générations futures.

C'est vraiment une situation critique.

Veuillez agréer, Monsieur le Secrétaire d'Etat, l'expression de

-114

UNION INTERNATIONALE POUR LA CONSERVATION DE LA NATURE ET DE SES RESSOURCES
INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

Commission de l'écologie
Commission on Ecology

Monsieur Remillot Leveille
Secrétaire d'Etat
Département de L'Agriculture,
des Ressources Naturelles et du
Développement Rural
Damien (Port au Prince)
HAITI

Département de l'Agriculture des Ressources Naturelles et du Développement Rural
Reçu FEB 4 1983
No 1295

Gland, le 25 janvier 1983

Monsieur le Secrétaire d'Etat,

C'est avec une grande satisfaction que nous avons appris que la région montagneuse dénommée "la Citadelle" avait été classée Parc National Historique et que la protection de cette région s'accroissait.

En revanche nous sommes très inquiets en ce qui concerne la protection de la région de Morne La Visite. En effet, il est indispensable de conserver la flore, la faune et les réserves aquatiques de Morne La Visite. La création de toute urgence d'un Parc National dans cette zone permettrait de conserver ce patrimoine naturel de Haiti et d'éviter un désastre écologique qui serait irréversible et dont les conséquences humaines seraient dramatiques.

De plus nous pensons qu'il faudrait éviter à tout prix que la destruction de l'habitat se poursuive au profit de l'agriculture. La forêt devrait reprendre sa place là où elle a été sacrifiée et remplacée par des cultures. Dans le cas contraire la perte des espèces sauvages qui en résulterait serait catastrophique et irrémédiable.

Nous tenons surtout à insister sur l'urgence des mesures à prendre car chaque jour des espèces de plantes et d'animaux disparaissent, les ressources

all Cons a final draft report 11/2/83

February 8, 1983

Département de l'Agriculture des Ressources Naturelles et du Développement Rural
Reçu FEB 10 1983
No 1367

Mr. Nicot Julien
Secretary of Agricultural Department
Natural Resources and Rural Development

Sir,

The enclosed report was prepared by Donald D. Dod of the National Botanical Garden, Dominican Republic, following three (3) visits totaling 14 days of field exploration and plant collection in the Formond zone of the P.D.A.I.-Acul River Watershed located northwest of Les Cayes, Haiti. This area is within the Massif de la Hotte region which is under consideration for development as a National Forest Reserve.

The collection sites were exclusively on the northern exposures of Karst limestone outcroppings at approximately 1000 meters above sea level. These northern exposures are seldom used by local farmers under their system of shifting agriculture practiced on other aspects because of the reduced light intensity which results in very low crop yields. Also, because of the extremely difficult access, timber harvesting for fuel wood or other forest products has, to date, been insignificant. However, an apparent increase in harvesting activities on these areas has been observed during the past year. Should these activities continue, this very fragile ecosystem will be destroyed.

These areas and other similar areas will be designated as endangered unique ecosystems in the Acul River Watershed Management Plan being prepared by DARNDR with the assistance of the USDA - Soil Conservation Service Technical Assistance Team. The establishment of such a forest reserve will not only protect and preserve this unique area, it will ultimately lead toward better watershed management and soil conservation.

If the SCS team can provide you with additional information, please feel free to contact us.

Sincerely yours

John Geter

John Geter, Team Leader
USDA - SCS Technical Assistance Team
PDAI- Damien

/msl

46

Students of the botanical resources of Haiti have pretty well concluded that most of the original forests have been destroyed or so altered that taxonomic studies are only minimally possible. While such an opinion may be justifiable in most of the country it certainly is not so in the Southwest peninsula.

Beginning in December of 1981 for two days and continuing in February for six days and then recently in April for six days, I have explored in the karst lime - stone hills of Formond. Also, in May for three days I explored in the area of the Riviere Glace, especially in the karst limestone forest to the left before the road crosses the river. My purpose in exploring those areas was to recollect certain orchids found by previous collectors but never found by me in the Dominican Republic.

I was able to find a few of the sought for plants but still lack a goodly number. However, very surprisingly, I found a remarkably high number of new species. In fact I have found so many that I have concluded that I must make a thorough study of all that area before I dare to publish the orchid botany of Hispaniola.

Since I have an air conditioned greenhouse at the Botanical Garden where I work, I am able to grow plants that were no in flower when they were collected. Thus, I am able to bring home plants which appear vegetatively different or ones that may by chance be new. Such a tactic has paid off and as of the present writing I can affirm that just in two areas, Formond and Riviere Glace, each no more than a total of 1 square kilometer, I have found at least 16 new species with some four or five more that possible may be new,

Most of the plants have fallen in the sub-tribe Pleurothallidinae, especially in the generas: Lepanthopsis, Lepanthes and Pleurothallis. In the Formond area I have found over 70 different species of orchids, a remarkable number when one considers the lack of different environments in the area.

This high incidence of new plants is surprising in the light of rather in - tensive collection in the area in other epochs when the forests were much less damaged. Ekman, Curtis, and Nash & Taylor all collected there. Whereas Ekman was a general botanist, Curtis was interested principally in Orchids.

These discoveries of new orchids reinforce the theory that the western part of the Southern peninsula at a distant time in the past was an island separated from the rest of the present day island. Since there are at least two birds which are endemic to that area, the combination of botanical and zoological evidence reinforces the geological observations still being made.

If in such a short time of exploration so many new orchids to science have appeared, it would seem wise for all the remaining virgin forests to be protec - ted so that the area can be studied in detail to determine just what other new organisms may exist there. In addition, studies in plant evolution should be very fruitful there if the evidence of new orchids means anything.

I heartly recommend that international ecological and conservation institutions as well as entities such as A.I.D. urge on the Haitian Government a prio - rity concern to save the remaining forests by creating National Parks, as well as intensified efforts to rehabilitate the agricultural area now under cultiva - tion. Family planning, soil conservation efforts and other improved agricultu - ral practices are the only solution. Financial as well as marketing help should be provided so as to relieve the pressure to destroy the remaining forests.

The Southwest peninsula of Haiti has a worldwide importance from a scientific point and its forests should be preserved at all cost.

Dennis E. Stark

ARCHBOLD BIOLOGICAL STATION
ROUTE 2, BOX 180
LAKE PLACID, FLORIDA 33852
TELEPHONE: (813) 465-2571

10 January 1983

Monsieur Remillot Leveille
Secretaire d'Etat
Department de l'Agriculture, des Ressources
Naturelle et des Developpement Rural
Damien (Port-au-Prince)
Haiti

Cher Monsier Leveille:

This letter is prompted by an extremely serious environmental crisis in Haiti which has recently come to my attention. I refer to the clearing of the natural forest habitat for garden plots within the boundaries of the proposed national park on Morne La Visite in southern Haiti.

The proposed Morne La Visite National Park is clearly one of the most important remaining natural areas of Haiti and the entire Caribbean region. Its biota includes a number of unique and threatened species, including the Chat Tanager, Black-capped Petrel, LaSelle Thrush, and the Zagouti (Plagiodontia aedium), one of a scientifically interesting group of rodents, the hutias, characteristic of the West Indian region. The present status of the Zagouti, which was described from Haiti nearly 150 years ago, is precarious as the result of the destruction of its principal moist forest habitats. Surveys conducted by Dr. Charles A. Woods of the Florida State Museum indicate that the Morne La Visite area contains the best and most important Zagouti population in Haiti. The clearing of the forests in this region poses a particularly severe threat to this population.

It is my understanding that, besides the critical impact of forest clearing on the native flora and fauna of the proposed Morne La Visite park, this activity is also resulting in soil erosion and reduction in the water storage capacity of the area. These effects must ultimately be reflected in a reduced resource base which in turn could significantly limit future economic development of the region.

The loss of the unique flora and fauna of the Morne La Visite region would be an environmental and scientific tragedy not only for Haiti but for the world as a whole. Therefore, as co-chairman of the Rodent Specialist Group of the Species Survival Commission of the IUCN and as an individual biologist who is convinced that preservation of the genetic diversity of our remaining natural tropical ecosystems is closely linked to the future welfare of human populations, I urge you to take whatever action is possible to stop further encroachments into the area of the proposed Morne La Visite National Park and to restore those sites that have already been destroyed.

JAN 13 1983 LB

I commend your government for recognizing the importance of establishing a national park on Morne La Visite to ensure preservation of this unique element of the natural heritage of Haiti and hope that this will be accomplished at the earliest possible time.

Yours sincerely,

James N. Layne

James N. Layne
Executive Director and
Senior Research Biologist

JNL:dc

49

UNION INTERNATIONALE POUR LA CONSERVATION DE LA NATURE ET DE SES RESSOURCES
INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

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Référence/Reference:
JAM/am/1

Monsieur Remillot Leveille
Secretaire d'Etat
Department de l'Agriculture, des Ressources
Naturelle et des Developpement Rural
Damien (Port-au-Prince)
Haiti

5 January 1983

Cher Monsieur le Secretaire d'Etat,

We have recently become aware of a threat to the high mountain and cloud forest on Morne La Visite in southern Haiti. The world by now is well aware of the environmental and personal tragedies that face your island nation. It is therefore all the more important that the ecological processes upon which human life depends are well protected.

The cloud forests on Morne La Visite are particularly important in serving as watershed protection areas to feed agricultural lands lower in elevation. To allow short term agriculture to encroach upon important forests will inevitably lead to an even worse tragedy for the agriculturists who depend on the water which comes from this important area.

Therefore, we strongly urge to protect Morne La Visite as soon as possible, perhaps as a national park. We would urge you to draw the boundaries as low down the mountainside as possible, as this will serve the function of providing enhanced protection for this important watershed. At the same time, protecting the forests, along with surrounding degraded areas, will provide important habitat to the endangered species which survive on your island.

It is our firm belief that by effectively protecting your mountain forest, you will be serving the best interests of your people. IUCN, and its Commission on National Parks and Protected Areas, stands ready to assist you in your efforts to create the Morne La Visite National Park. Please do not hesitate to call upon us for any help that we may be able to provide.

Sincerely yours,

Jeffrey A. McNeely
Executive Officer
CNPPA

bcc: Dr. F. Wayne King
Kenton Miller
Bob Scott

50

The University of Connecticut

STORRS, CONNECTICUT 06268

THE COLLEGE OF
LIBERAL ARTS AND SCIENCES
The Biological Sciences Group

January 11, 1983

Monsieur Remillot Leveille
Secretaire d'Etat
Departement de l'Agriculture, des Ressources
Naturelle et des Developpement Rural
Damien (Port-au-Prince)
HAITI

Dear Monsieur Leveille:

We would like to add our voices to those of our colleagues who are concerned with saving the unique flora and fauna of the mountains of Haiti. It is a priceless heritage, without which both the World and Haiti would be the poorer. The economic benefits of controlled rate of use of natural resources at a level permitting their renewal have been a major factor in the successful development of nations. Where the rate of use is beyond the point of recovery, the resources are no more. All this is quite aside from the aesthetic values and qualities of life affected by saving or spending the coin of our inheritance. You and I can agree on these points--and your understanding of them will certainly surpass mine. The problem, of course, is with those who will not or cannot wait--who will not believe that there is a tomorrow. I can only feel humble before the magnitude of your problems. Please accept my sincere support in your vigorous conservation efforts for your nation.

More specifically, I understand that a national park has been proposed on Morne La Viste in southern Haiti. It seems probable that there is now a grim race between conserving what remains of that valuable habitat and its rapid destruction before a park can be established. I would like to speak for our committee in urging rapid implementation of the park and restoration of the parts that have been cleared that will be within its border.

Please accept my best wishes and warmest regards.

Sincerely,

Ralph M. Wetzel, Ph. D.
Professor of Biology
Chairman, Committee for Conservation
of Land Mammals, American Society
of Mammalogists.

RMW:MEP

CC Wayne King

JAN 17 1983

INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

Commission de l'écologie
Commission on Ecology

Monsieur Remillot Leveille
Secrétaire d'Etat
Département de L'Agriculture,
des Ressources Naturelles et du
Développement Rural
Damien (Port au Prince)
HAITI

Gland, le 25 janvier 1983

Monsieur le Secrétaire d'Etat,

C'est avec une grande satisfaction que nous avons appris que la région montagneuse dénommée "la Citadelle" avait été classée Parc National Historique et que la protection de cette région s'accroissait.

En revanche nous sommes très inquiets en ce qui concerne la protection de la région de Morne La Visite. En effet, il est indispensable de conserver la flore, la faune et les réserves aquatiques de Morne La Visite. La création de toute urgence d'un Parc National dans cette zone permettrait de conserver ce patrimoine naturel de Haiti et d'éviter un désastre écologique qui serait irréversible et dont les conséquences humaines seraient dramatiques.

De plus nous pensons qu'il faudrait éviter à tout prix que la destruction de l'habitat se poursuive au profit de l'agriculture. La forêt devrait reprendre sa place là où elle a été sacrifiée et remplacée par des cultures. Dans le cas contraire la perte des espèces sauvages qui en résulterait serait catastrophique et irrémédiable.

Nous tenons surtout à insister sur l'urgence des mesures à prendre car chaque jour des espèces de plantes et d'animaux disparaissent, les ressources aquatiques diminuent. La situation écologique de Morne La Visite étant dramatique il faut agir très vite.

En espérant que vous comprendrez le caractère d'urgence de ce problème et la célérité qu'il nécessite, nous vous prions de croire, Monsieur le Secrétaire d'Etat, à l'expression de notre haute considération.

Dr. Maarten Bijleveld
Secrétaire Exécutif
Commission de l'Ecologie

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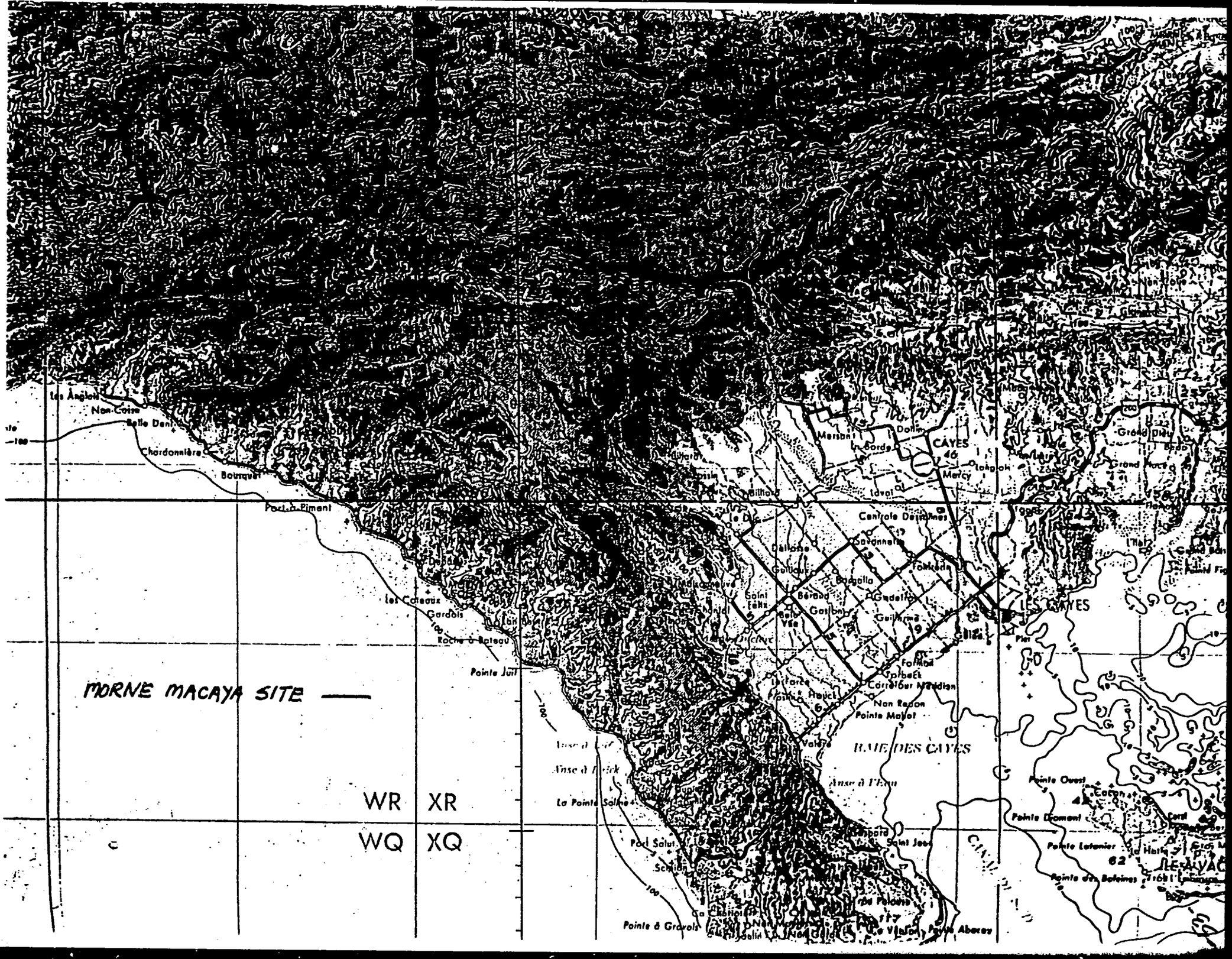
52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Bouquet
Port-à-Piment
Les Coteaux
Gardois
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Pointe Jult
La Pointe Saline
Port Salut
Pointe à Gravois
CAYES
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Mercy
Lokpok
Marbant
Dorde
Billard
Lavat
Centrale Des Cayes
Savonnette
Dallone
Guillaume
Borgella
Fontrède
Gadelle
Bérbou
Gosbon
Saint Félix
Guillaume
LES CAYES
Gilles
Formal
Torbeck
Carrefour Méridien
Non Redon
Pointe Malvel
Valère
BAIE DES CAYES
Anse à Dain
Pointe Ouest
Pointe Clément
Pointe Latanier
Pointe des Baleines
Saint Jean
Le Vieux
Pavés Abeces
Grand Boucan
Grand Place
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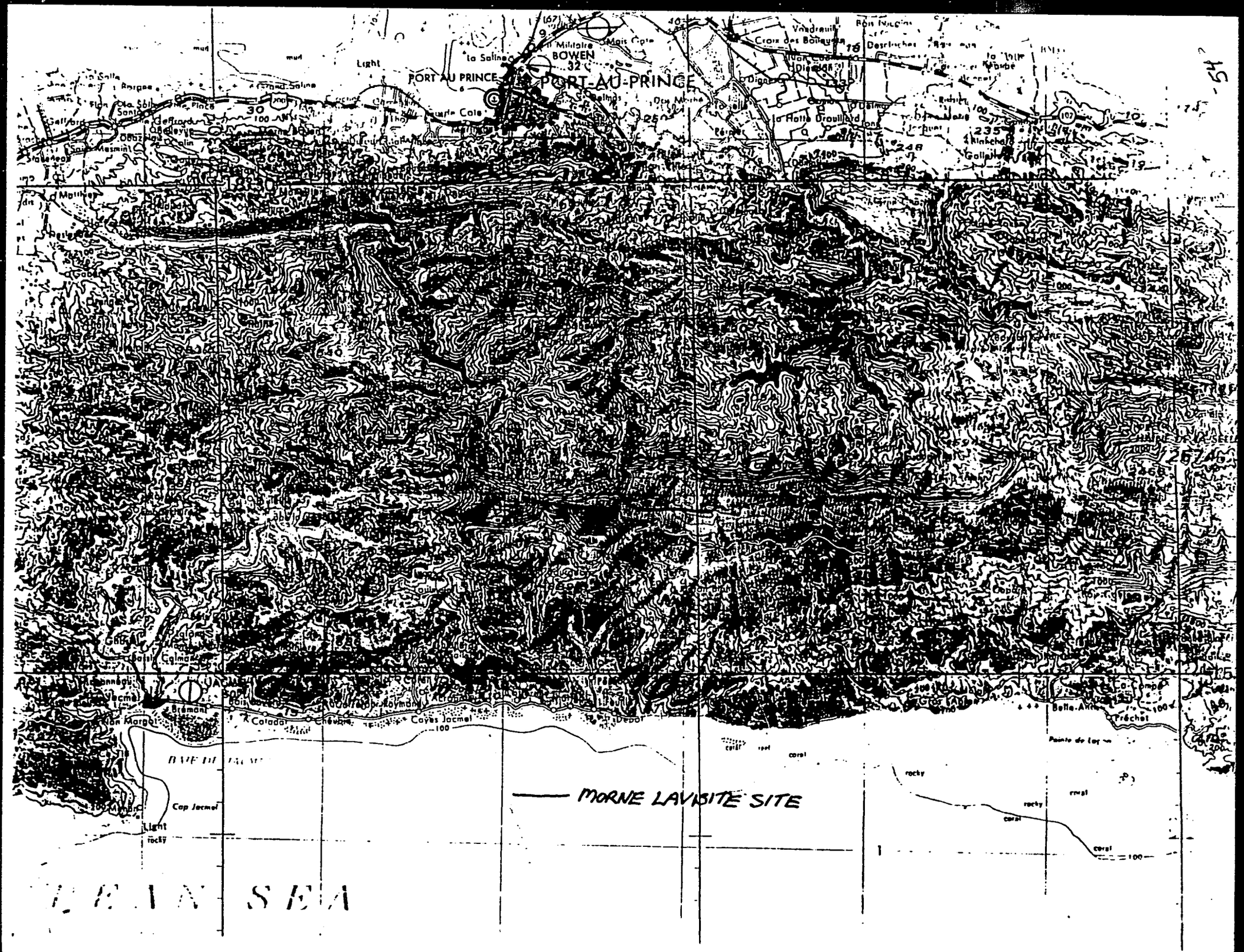
PORT-AU-PRINCE
PORT AU PRINCE
BOWEN
Militaire
La Saline
Mais Gâté
Croix des Bouquets
Desrouches
Vivadreuil
Bon Nouvelle
Light
Cap Jacmel
Light
rocky
Bremant
Cayes Jacmel
Coladol
Chevaux
Bon Margot
Belle-Anse
Tréchot
Pointe de Leyre
coral
rocky
MORNE LAVISITE SITE
ZEIN SEA

Endangered Wildlife in Hispaniola

an island fauna at an environmental crossroads

Charles A. Woods

During eight research trips made between September 1977 and June 1982 I spent 16 months in Haiti and the Dominican Republic investigating the living and extinct endemic birds and mammals of Hispaniola. Much of the time was spent searching remote regions of the island for surviving populations of native animals. My studies reveal that important populations of endemic birds and mammals still survive, and that there is hope they can be saved from extinction in the face of rapid population growth and habitat destruction in both Haiti and the Dominican Republic.

The fossil record in Hispaniola shows a rich mammalian fauna of rodents (10), insectivores (5), sloths (6), and primates (2) lived on the island, and that many survived until the time of Columbus. Only two endemic mammals have survived to the present time, however, and those surprisingly are poorly represented in the fossil record.

The sole surviving rodent is a medium-sized species of the genus Plagiodontia (Family: Capromyidae; Fig. 1, 2). In 1540, Oviedo described the animals of eastern Hispaniola (see Miller[7]) and considered this animal to be "no longer found except very rarely." Moreau de Saint-Mery, in his description of Haiti, described seeing many of these animals near Jeremie in 1788. Saint-Mery called them "agoutis." It was not until 1826 that Alexandre Ricord finally collected

55

two specimens in "Saint Dominique," the name the French used to describe the whole island. They were described by Cuvier in 1836 as Plagiodontia aedium.[4] Ricord, like Oviedo, considered the species as rare. Additional specimens were not collected until 1911 when a single specimen was taken near Jeremie which is located on Haiti's southern peninsula. In 1923 W.L. Abbott collected 13 specimens in the northeastern Dominican Republic.[6] These were described as a new species, Plagiodontia hylaeum. Four specimens of Plagiodontia aedium were collected in the late 1940's in the mountains near Miragoane where Reynold's Metals Company was developing a bauxite mine. These are described in a paper entitled "A Rediscovered Haitian Rodent . . . " (Johnson[5]). Thus, historical accounts of this species consistently implied that Plagiodontia was rarely encountered during Post-Columbian times.

My field work and analysis lead me to believe that historical impressions of Plagiodontia as "rare" may be illusions. Observations on the natural history of the animal indicate that Plagiodontia is secretive and lives in forested areas associated with rough limestone covered hillsides and ravines. The species has broad ecological tolerances and can be found in suitable habitat from sea level to over 2000 meters regardless of the amount of rainfall. They live in family groups and it is common for three or four animals to be found in the same cavity on a rocky hillside or tree. The animal is nocturnal, generally feeding near the ground or in the branches of small trees and close to its home area. It rarely ventures far to drink and is able to get enough water for its needs from a diet of roots, leaves, stems, fruits, buds, and bark. Plagiodontia has been shown to eat the roots and stems of Colocasia esculenta, Xanthosoma sagittifolium, and Ureka baccifera; the bark, twigs, and fruits of Persea anomala, and the bark of Pinus occidentalis. In

captivity it is not stressed when water is completely withdrawn, as long as its diet contains leafy vegetation and vegetables. The relative medullary index of the kidney, an indication of water concentrating ability, is four. Animals held in captivity rarely become tame enough to handle, and usually hide in their nest boxes. This shyness is true even of animals that have been captive as long as four years, and is in direct contrast to other species of hutia, such as the Indian cony (Geocapromys brownii) which easily adjust to captivity.

The behaviour of animals from populations living in the northeastern Dominican Republic near Bahia de Samana may differ from the populations in southwestern Haiti near Duchity, Jeremie, Miragoane and the mountains near Morne La Selle, the highest point in Haiti. A professional hutia hunter from near Sabana de la Mar on Bahia de Samana indicated that hutias were good climbers and made dens in cavities of large partially decayed trees. He also reported that they have at least two holes in each tree and travel through the trees rather than come to the ground. The animals were collected by climbing trees and taking them from sleeping chambers. I have gathered similar information from other workers in that region and have found hutias living in trees in this area. The animals reported by Moreau de Saint-Mery in 1788 were found living in a large old rotten tree. One knowledgeable Haitian mountain farmer from near Moron could take us directly into the steep ravines near his home and show us active Plagiodontia domiciles. All of the animals in this area lived in limesone crevices. He indicated, however, that when he was a young man and tall forests covered the ridges and mountainsides, as well as the steep, rocky ravines, he could remember finding "zagouties" (their Haitian Creole name) living in cavities in the trees. I have been told similar stories from the area of Paillant in the mountains above Miragoane, where zagouties have been seen in small trees.

In May of this year I studied the behavior of zagouties along a mountain ridge in southern Haiti. In this area of steep cliffs, big rocks, wet tropical forests, and nearby pines, zagouties were living in crevices formed between the large rocks. Well worn trails led to each crevice. The animals fed in nearby trees, some of which they climbed to a height of 10 meters. They climbed trees up to 20 cm in diameter but preferred smaller trees and branches. The behavior of this population is typical of the habits of Plagiodontia in most areas of Hispaniola. They prefer to live in rock crevices and feed in low trees and shrubs, and near the ground. In areas where there are large trees with cavities, they will expand their range. In the Bahia de Samana area, for example, they live in big trees because this is the only suitable habitat for them. The area is near sea level and is constantly flooded with up to a meter of water. The forest has not yet been cut in this region because of the swamp-like conditions, whereas the more suitable inland areas have all been cleared for agriculture.

Because Plagiodontia is difficult to encounter in its natural habitat, it seems to be rarer than it really is. In Haiti, for example, peasant farmers seldom see the animal. In hundreds of conversations with peasants over the last 10 years, I found fewer than 50 who had ever seen or heard of a "zagouti." This was true even in an area near Jeremie where I was able to locate eight live Plagiodontia from a single ravine. In my most recent fieldwork in the mountains near Morne La Selle, peasant farmers denied ever seeing a zagouti, and yet I found over 15 living within a kilometer of their houses. One was killed by a peasant when he came upon it along a steep mountain trail in the early morning hours. In this area of Haiti, where food is very scarce and people are very hungry, the peasant threw the animal aside

and went on his way thinking it was just a rat. Because zagouties are considered a delicacy, and are even hunted in areas where they are well known, the peasant's actions were a clear indication he did not know much about the zagouti. I am convinced that the species has been able to survive until now because of its secretive, nocturnal, and localized behaviour. The fossil record indicates that another hutia, Isolobodon portoricensis, was 100 times more common than Plagiodontia, even into Post-Columbian times. Isolobodon almost certainly is the hutia referred to by Columbus in his journals and was probably docile and non-secretive. It must have been kept in captivity, as its remains are so common in midden deposits all over the island. I believe that Isolobodon became extinct, as did the other endemic rodents of Hispaniola, because of its less secretive habits. Another indication of the secretive behaviour of Plagiodontia is that in the Dominican Republic many people think Solenodon paradoxus, the strange looking endemic insectivore, is more abundant because it is more frequently encountered by people and dogs. However, my observations indicate that Plagiodontia is far more abundant than Solenodon, and that the reported observations are a reflection of behavior rather than actual numbers.

The above discussion raises a question: Is Plagiodontia now rare in Hispaniola or does it only appear to be rare? Suitable habitat in Haiti is now largely restricted to isolated patches in deep, steep ravines. These ravines are isolated from each other by many kilometers and become more restricted each year as gardens are cleared and burned areas push closer into steep ravines. This was dramatically illustrated in April of 1979 when I returned to the same ravine in southern Haiti where five Plagiodontia were encountered in 1975. Large patches of gardens had been extended into the steep ravine, and whole

areas of forest had been cut and burned on the nearby hillside, even though they are covered with extensive limestone deposits and are barely suitable for agriculture. There are few extensive areas of suitable habitat left anywhere in Haiti. Even in the remote Massif de la Hotte area of the far south, most suitable habitat has been eliminated. The problem is aggravated because Plagiodontia only breeds once each year. The gestation period is betwen 125 and 150 days, and in all known births, but one, a single young was produced. The exception is a case of twins from a colony at the U.S. National Zoological Park. This low reproductive potential combined with extreme habitat destruction has resulted in a situation where Plagiodontia faces the possibility of extinction in Haiti. Because of the way land was distributed following independence, nearly all the suitable Plagiodontia habitat is privately owned and has people and dogs living within a short distance. Unless some dramatic conservation measures are taken by the Haitian govenment to set aside several critical areas of suitable habitat, the animal will become extinct within this century.

The exceptional ability of this species to survive, even under the most unfavorable circumstances, suggests that it is still not too late to save Plagiodontia from extinction. An intensive search for Plagiodontia was made in the mountains of southern Haiti north of Les Cayes. In the period between 3 April 1979 and 3 December 1980 the remains of 32 Plagiodontia aedium were found by searching through peasant gardens, along rocky hillsides, and in natural traps formed by deep caves and sinkholes. The species is common in this area of limestone-covered hillsides and severely modified, humid subtropical forest. Most suitable areas in this region are planted in gardens or coffee. The human population density is high because the area is bisected by the mountain road, which has just been improved by the government, connecting Les

60

Cayes with Jeremie. Peasant farmers, who work in gardens within a 5-mile radius of where the Riviere Glace crosses the mountain highway, told us they sometimes see Plagiodontia in their gardens during the hours just before dawn. More work is underway in this region on the status and biological requirements of Plagiodontia. The evidence collected demonstrates that scattered populations of Plagiodontia exist in the Morne La Hotte area of Haiti.

The Government of Haiti is aware of the status of Plagiodontia and has taken some actions that might insure the preservation of Plagiodontia in conjunction with an overall program of forest conservation and reforestation. The Department de l'Agriculture (DARNDR) has recently reorganized the Division of Natural Resources to create a Bureau of Forest Resources and the Protection of the Fauna. This is an important step to establishing a sound program of conservation. In addition, the Institut de Sauvegarde du Patrimoine National (ISPAN) was recently created by Presidential decree. ISPAN is organized to undertake in Haiti functions similar to those of the Smithsonian Institution in the United States. Both ISPAN and the Bureau des Ressources Forestieres et de Protection de la Faune are interested in establishing national parks and natural reserve zones for the protection and promotion of Haiti's natural patrimony. A national historic park has already been established in the area around the Citadelle near Milot in northern Haiti, and parks are under consideration for the Massif de la Selle and Massif de la Hotte areas of southern Haiti. My fieldwork in May was in the region of the park site along the Massif de la Selle. It is encouraging that the populations of Plagiodontia I was studying were in the center of the proposed new park. What is discouraging is that even in this area gardens are being pushed into the middle

of the animal's habitat. The death of the animal discussed above, which was in the middle of this site, is an indication of what happens when man and beast meet. The zagouti does not stand a chance unless a secure area is set aside for it soon.

The situation in the Dominican Republic is more encouraging.[9] The distribution of people and dogs is clumped into towns, and areas of suitable habitat exist in regions where the species survives. The government is aware of the problem faced by the endemic birds and mammals and is undertaking conservation measures. The growth rate in the Dominican Republic is among the highest in the Western Hemisphere, however, and farms and cleared land are spreading across the countryside at an alarming rate. In the areas of the Sierra de Bahoruco and Sierra de Neiba, where I worked in 1978, it was possible to see changes each month.

Are there two separate species that must be protected, or are all of the hutias of Hispaniola of a single species? In an effort to answer this important question I compared populations of Plagiodontia from southern Haiti with those from the northeastern Dominican Republic. Anderson[1] suggested that they were of a single species based on his analysis of 13 specimens. He was able to look at very few confirmed specimens of the southern form, however, and many workers continue to accept the presence of two species on Hispaniola. I have expanded Anderson's analysis to include over 70 specimens from locations throughout Hispaniola. The specimens are extremely variable in body size and morphology and may fall into a series of local populations. However, the analysis indicates that all surviving populations of Plagiodontia on Hispaniola are members of the single species P. aedium.[13, 14]

In summary, P. aedium is rare in Haiti and in the Dominican Republic and its preferred habitat is being placed under increasing stress. The species has an amazing ability to survive under difficult conditions, and it should be possible to prevent it from becoming extinct. The major chance for the preservation of P. aedium is in the Dominican Republic where protection from humans and dogs as well as conservation of suitable habitat could insure its continued survival. The situation in most areas of Haiti is desperate, but not hopeless, because of the tenacity of the species and because of the encouraging new developments within the Government of Haiti.

I do not recommend large-scale efforts to breed the species in captivity. It is difficult to get Plagiodontia to breed in captivity, and the best chance for survival of the species is in a program to set aside localized areas of suitable habitat where human and canine interference is restricted.

However, the Jersey Wildlife Preservation Trust has had remarkable success breeding the Bahamian hutia, Geocapromys brownii, in captivity, so the use of innovative techniques might make it possible to coax Plagiodontia into breeding in captivity. In this hope an experimental joint captive breeding project has been initiated by the Florida State Museum and the Parque Zoologico Nacional (ZooDom) of the Dominican Republic. The project will utilize the facilities and personnel of the University of Florida during its first four years to seek possible ways of breeding Plagiodontia. If successful, the entire project will be transferred to the National Zoo in Santo Domingo to insure a Caribbean-based facility for relocating Plagiodontia into suitable areas of Hispaniola in future years. So far this year two Plagiodontia have been born in our program at Florida.

63

The problems faced by Solenodon paradoxus are more serious. The species was first described in 1833 by Brandt, but was considered very rare. Verrill[11] stated that: "For many years it has been commonly considered extinct, and when, in December 1906, I undertook a collecting trip to San Domingo with the avowed intention of obtaining Solenodon, prominent zoologists stated that the quest was hopeless, one of them saying that I would be as likely to secure specimens of ghosts as of Solenodon paradoxus." Verrill did find three specimens of Solenodon, but found that the species was unknown over the greater portion of the Dominican Republic. In subsequent years, a number of additional specimens have been captured in the Dominican Republic. About 30 Solenodon were captured by the year 1937[3] and over 150 have been captured in the last 40 years in the Dominican Republic in the area near San Jose de las Matas.[8] In Haiti a few teeth and some claws of Solenodon were collected in 1937 from the northern foothills of the Morne La Selle range south of Fond Parisien.[10] In May 1975, I found two recently killed specimens of Solenodon paradoxus at 750 meters elevation in the mountains of the Massif de la Hotte, 27 kilometers northwest of Les Cayes.[12] Between April 1979 and December 1980, I encountered the bones of 15 separate Solenodon in the same region, but 9 kilometers deeper into the mountains. A live animal was found in this region in March of 1982. All the remains were in hillside gardens where they had been found by peasants who thought they were finding Plagiodontia bones. The bones were white and weathered, indicating the animals had died (or been killed) several months to a year earlier. As with the Plagiodontia killed by the peasant in the mountains near Morne La Selle, I am sure these were also killed and thrown aside.

Solenodon is frequently confused with Plagiodontia, even though it is an insectivore with a long, pointed snout (Fig. 3). For example, in Haiti it is generally called zagouti, the same name as is used for Plagiodontia, by the few people who know the animal. In discussions with peasants it is often very difficult to tell which animal they are describing. Even though Solenodon and Plagiodontia look very distinct and have different food habits, they are about the same body size, are generally the same coloration, and are both nocturnal. This problem has led to the need of being very careful in phrasing questions, and has made it important to carry clear photographs and drawings of all the animals of the islands, including the introduced rats and mongoose. Interviews with peasant farmers are useful in gathering information, and I use this technique to establish an index of how common Solenodon and Plagiodontia are in an area. In many regions of Haiti, especially the extreme southeast between Jacmel and Anse-a-Pitre, the large iguana Cyclura cornuta is also called a zagouti. The iguana looks very different (Fig. 4), of course, and is much larger than either Plagiodontia or Solenodon. However, it lives in the rocks and often feeds around peasant gardens in this arid area. Once when a large iguana was brought to me by a number of young men I spent an hour convincing them it was not the mammal I was looking for. They, of course, wanted it to be a "zagouti," because that is what I was searching for. When I said zagouties had hair, they insisted this did also when they found it, but it was so hot and their journey so long that all the hair fell out. The young men had similar explanations for every difference in morphology that I mentioned. The story points out how ingenious and perseverent Haitians are in trying to "make business," as the young men were of course trying to do. It also shows how

difficult it is to get factual information on the natural history of animals living in a country where the endemic animals are so rare, and the people have so little interest in the wild animals around them.

I have searched for the animal in all regions of Haiti. Other than the 15 dead specimens encountered and the animal found in March, there are only three other reports of Solenodon that seem reliable. All of these were from the same remote area surrounding the Massif de la Hotte in the extreme southwest of Haiti. I conclude that Solenodon paradoxus is "functionally extinct" in most regions of Haiti, and that it persists only in the remote mountains of southern Haiti.[12] There is a slight chance of saving the species in Haiti. The habits of the animal make it easy prey for dogs and people. In areas where new gardens are being created from existing forest, dogs frequently kill Solenodon. Nowhere in Haiti is it possible to get far away from people and dogs, and so the prognosis for Solenodon is less encouraging in Haiti than it is for Plagiodontia. The only chance lies in the creation of a large natural reserve that is free of dogs and permanent settlements.

In the Dominican Republic, many campesinos consider Solenodon common. Until recently Solenodon was protected from the danger of dogs and humans by the tendency of the people to live in towns. As the population increases, however, and the need for food results in rapid deforestation and the creation of mountain settlements near remote gardens, Solenodon becomes vulnerable. Even though Solenodon appears to be abundant in certain areas of Haiti (my 1979-1982 findings) and the Dominican Republic,[8] I believe this is really an indication of how vulnerable the species is to predation by people and dogs.

An example of how vulnerable Solenodon is was made clear to me last March as I was working in Parque National de Los Haitises in the Bahia de la Samana region of the Dominican Republic. The region is a series of numerous rugged limestone hills and mountains, and is called los Haitises from the same Arawak Indian word that was used by Jean Jacques Dessalines and his fellow generals when they sought a new name for Saint Dominique following the war of Independence. In 1804 they chose the name Haiti, which in Arawak meant land of mountains. A campesino and his small family were living in a house in the center of the national park that he was able to occupy because the house was there before the park was established. The man told us that his dogs had killed four "hutias" in the previous two weeks. Because the area seemed so suitable for Plagiodontia and was not far from where we found the animals living in big trees in the swamps near Sabana de la Mar, I assumed we were talking about Plagiodontia. However, when the man took us to the area where his dogs had killed the creatures, we found the bones of Solenodon. Plagiodontia would have escaped from the dogs by running into a crevice in the limestone rocks, or climbing a small tree. Solenodon is less likely to do this, and is easily killed by dogs when surprised at night or in the early morning hours.

Solenodon could become "functionally extinct" in the Dominican Republic within this century unless some way is found to protect it from dogs, people, and mongooses. Because Solenodon is not nearly as secretive as Plagiodontia, it is not as capable of surviving extreme pressure from an expanding human population. The only hope is to create large areas of habitat that are totally protected from human habitation. Even this may be difficult, however, as increasing agricultural demands result in gardens and towns around the fringes

of these reserves. An excellent national park system exists within the Dominican Republic, but, as shown above, enforcement and protection need to be improved. There are not many years left before Solenodon will be on the brink of disaster in all of Hispaniola.

I have also been evaluating the status of the endemic birds in Hispaniola. In general, birds are better able to exist in the face of human population pressures and environmental degradation. In Haiti, however, the amount of degradation is so extreme that forest habitat has been eliminated from large areas of the country. The result is that many birds that require areas of wet mountain forest are decreasing in numbers. In May and June of this year I surveyed the birds in the Morne la Visite area along the ridge of the Massif de La Selle. This area was previously surveyed for birds in 1927 by Dr. Alexander Wetmore, who made extensive observations on the distribution and abundance of the birds and commented on the extent of the vegetation. Much has changed in the 45 years since Dr. Wetmore's earlier study, however, and I have noted the status of several of the important birds of the region.

The La Selle Thrush, Turdus swalesi was first seen by Dr. Wetmore on 11 April 1927 near the summit of Morne La Visite. He recognized it immediately as a new species. Wetmore described the bird in 1931, and noted it ranged between 1500 and 2100 meters in thick wet forest. To survey the birds of the same region in May and June of this year, I ran transects from the pine forest along the plateau-like ridge, through steep ravines, and along the precipitous north face of the mountain ridge.

La Selle's Thrush is still common in the area (Fig. 9, 10), but is extremely vulnerable. It builds a nest comprised largely of moss that is located in a shrub or small tree in an area of dense vegetation. During May

the birds were breeding, and I observed the birds often in pairs. All birds were either in the dense vegetation of ravines or in the wet forest along the steep cliff base. I often saw it feeding on the ground in small clearings and gardens, but also observed it feeding in trees, especially on the fruits of Persea anomala. This is the same habitat where I found Plagiodontia aedium. In the often cloudy and rainy weather, the thrushes would sing at various times during the day, starting at first light. Other birds that were found in this same habitat were the rufous-throated solitaire Myadestes genibarbis (Fig. 8), which peasants call Oiseau Musicien, the little ground warbler Microligea palustris, and the chat tanager, Calyptophilus frugivorus.

The habitat of these birds is being severely altered by the peasants living in the region. New gardens are being created by cutting the thick scrub forest from the ravines and cliff faces. The habitat destruction is so extensive that the birds are now confined to very limited areas. I estimated there were 15 breeding pairs of La Selle thrushes in the area I was surveying. Because the areas of suitable habitat were so limited, it was possible to identify the location of each pair, and follow their activities and vocalizations. The La Selle thrushes and ground warblers were more likely to make use of the steep ravines along the plateau itself, whereas the solitaires and chat tangers, while occasionally found in the ravines, were much more common in the cloud forest along the north face of the steep cliffs forming the ridge of the mountains. All of these habitats are now severely limited. Gardens being extended from the valley below now meet the pine forest above, and the remaining suitable habitats could all be eliminated in just a few years.

Indications of how disturbed the area is becoming can be found everywhere. The mongoose is now common, and I saw several along trails as I conducted the bird survey. Birds seen in the area that indicate the nature of the habitat has changed markedly and is becoming "settled" are the yellow faced grassquit Tiaris olivacea, the mockingbird Mimus polyglottos, and the bananaquit Coereba flaveola. These birds are all common in settled open areas and are a clear warning that the habitat destruction is beginning to eliminate the original and special bird fauna. The Antillean Siskin, Carduelis dominicensis, is still common. However, this bird, which more nearly resembles a goldfinch in habits and morphology than it does a siskin, feeds as much on weed seeds as it does on pine and is at home in highly disturbed areas. The white-winged crossbill, Loxia leucoptera, on the other hand, feeds on pine cones and is being severely restricted as the big pines are cut. I saw only six crossbills in my survey of the area. Wetmore observed numerous Hispaniolan parrots, Amazona ventralis, in the forests of La Selle in 1927. I saw a few in March 1982 (Fig. 6) but none were observed in ten days of intense bird surveys in May of this year. The Hispaniolan parakeet, Aratinga chloroptera (Fig. 5), was common, however; The Hispaniolan trogan, Temnotrogon roseigaster (Fig. 7), was far less abundant than it is in areas of comparable elevation in the nearby Dominican Republic, and seems to be disappearing with the loss of habitat.

The habitat loss in Haiti is beginning to have a serious impact on the distribution of both birds and mammals. Habitat destruction has progressed so far that some birds and mammals will not be able to continue to survive in Haiti unless something is done soon to keep the forest cover in the last remote areas from being cut and lost forever. The loss of these habitats seems an especially big tragedy because, not only do they represent the places where

some animals are making their last stand, but also because the gardens are on such steep hillsides that both the gardens and the soil will soon wash away, leaving little behind. Everybody will be a loser in this sad sequence that will see the people of Haiti as well as the endemic flora and fauna suffer. It is not too late, however, since the animals are still present and the habitat broadly enough distributed that if protected it could begin to spread back into the zones where it has been so exploited. Discussions are underway in Haiti to make 1000 hectares between Morne La Visite and Morne Cabiao a national park (Fig. 11). The administration of this park will be shared by ISPAN and DARNDR. Within the boundaries of this park, located at 2100 meters on the ridge of the Massif de la Selle south of Port-au-Prince (Fig. 12), the Plagiodontia and endemic birds discussed above can still be found. This park, and perhaps a similar one on Pic Macaya in the rugged Massif de La Hotte (Fig. 13), may represent the only chance Haiti will have to save a significant part of its endemic fauna and flora from extinction.

In the Dominican Republic there is hope that a strong program in conservation and the enforcement of protective measures in the existing national parks could still save the plants and animals that are under such pressure in Haiti. To do this effectively, however, a permanent solution must be found to protecting the area within the Dominican Republic that is an eastward continuation of the Massif de La Selle. This area is called the Sierra de Bahoruco, and it is currently protected by the ALCOA Exploration Company. The habitat is similar to the Massif de La Selle, and the birds and mammals that are so threatened in Haiti are present in much greater abundance on ALCOA land. This land, and the remote areas surrounding it, should be protected now in a permanent manner. Many voices are coordinated in the

Dominican Republic with the same message. That message is that the flora and fauna of Hispaniola are very unique and in some cases even extremely beautiful. We must all do everything we can to insure that this flora and fauna are not destroyed as we seek solutions to the very real problems of hunger and economic development in these two island nations with limited natural resources and a history of exploitation of their landscape.

In Haiti there is a Creole proberb "Lafimin pa jahm met kay deyo" (the smoke can never chase out the owner of the house). However, the fires burning up the steep mountain forests in Haiti will destroy the very house itself, and if the ecosystem of Hispaniola is going to continue to support any endemic land mammals and forest birds, something is going to have to happen soon. The island is at an important environmental crossroads, and it needs all the help it can get.

In conclusion, the once magnificent endemic land mammal fauna of Hispaniola, which included rodents, ground sloths, insectivores, and primates, is now extinct except for one rodent and one insectivore. Of these, only the rodent Plagiodontia aedium seems suited by habits and habitat preference to survive in the presence of increasing levels of human exploitation. The situation in Haiti is desperate.[12] In the Dominican Republic there is hope that a strong program in conservation and the creation of several natural reserves could save both species. The animal with the greatest chance for survival is Plagiodontia aedium, which in its tenacity for survival resembles a tough and wiry Haitian peasant. Indeed, there is a saying in Creole for a hent and battered old mountain peasant: "Ou semble ak zagouti." It means you are like a Plagiodontia, and in that saying there is hope for a future of both man and beast. It is worth the time and money to save these remarkable animals.

ACKNOWLEDGEMENTS

I would like to thank Joseph Wainwright, Robert Cassognol, and Julio Barthelemy of the DARNDR; Albert Mangones and Paul Paryski of ISPAN; Al Butterfield and Gerard Coupet of Reynolds Haitian Mines; and Ekke Lemke and Andy Wagler, all of Haiti, for helping me with important aspects of this study. In the Dominican Republic, I would like to thank Eugenio deJ. Marcano, Jose Alberto Ottenwalder, Dr. Jaime Vinas Roman, and Merilio Morell, all of whom provided valuable assistance. Victor Garcia and Patrick Hughson of ALCOA Exploration Company also were extremely helpful. The field work was supported by generous financial assistance from the American Philosophical Society, the National Geographic Society, The Organization of American States, The National Science Foundation, The University of Vermont, The University of Florida, Reynold's Metals Company, Fauna and Flora Preservation Society, and the International Foundation for the Conservation of Birds. I must acknowledge the help provided by my family and students, with a special thanks to Margaret Langworthy, Richard Rosen, John Hermanson, and Rick Sullivan who know first hand the meaning of the Creole proverb "Beyond mountains are more mountains."

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Dr. Charles A. Woods, Department of Natural Sciences, Florida State Museum, University of Florida, Gainesville, FL 32611 U.S.A.

Fig. 1. Plagiodontia aedium in its natural habitat near Jeremie in southwestern Haiti.

Fig. 2. Close up of Plagiodontia aedium.

Fig. 3. Solenodon paradoxus foraging for food.

Fig. 4. Cyclura cornuta, the rhinoceros iguana which is also called the zagouti in Haiti.

Fig. 5. Hispaniolan parakeet.

Fig. 6. Hispaniolan parrot.

Fig. 7. Hispaniolan trogan.

Fig. 8. Rufous-throated solitaire.

Fig. 9. La Selle thrush at 2100 meters on Morne La Selle in southern Haiti.

Fig. 10. La Selle's thrush.

Fig. 11. View of Morne Cabiao from Morne La Visite in the center of Haiti's forest reserve in southern Haiti.

Fig. 12. The high mountains of southern Haiti.

Fig. 13. Pic Macaya and Pic Formon in the remote mountains of southwestern Haiti.

THE FLORIDA STATE MUSEUM
UNIVERSITY OF FLORIDA

DEPARTMENT OF NATURAL SCIENCES

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February 4, 1983

TO: Paul Paryski

FROM: Charles Woods

SUBJECT: Haiti Projects

AID Proposal

It is very good news that AID will support the parks, and the important activities associated with the parks. Let me know as soon as you know what the final amounts of the support will be, and the dates of support.

We can train park personnel here in the principles of conservation and in the practical aspects of being a functional "field biologist." I think the best approach will be to train two (2) Haitian individuals with the equivalent of a BA degree from the University of Haiti. These people could then return to Haiti and train and supervise the park wardens and support staff. The training period could be for six months (one semester plus a summer) or nine months (two semesters). We would coordinate the work through our program in "Museum Studies and Conservation," which is part of our Center for Latin American Studies (a reprint enclosed). The students would receive a "Certificate" at the end of their studies. They should have passed the TOEFL exam with a score of 550 (we may be able to adjust this requirement). The current requirements for a foreign graduate student are that they have a guaranteed level of support of $10,000 for a year to cover all costs (so that they don't end up without enough money to support themselves and live in poverty). The actual costs are less. Therefore we could train a minimum of two (and probably a maximum of four) individuals under the grant. I am enclosing a form on foreign graduate students for your information.

We have a pending program in undergraduate Tropical Studies and Conservation (copy of grant application enclosed). Maybe we could incorporate some students into this.

We will do the biological and geological surveys. The most critical ones are the basic biophysical parameters of the parks themselves (Citadelle, La Viste, Formon-Macaya) and the identification of any other "critical" areas to preserve. I propose doing this with a "team" that I will coordinate. The critical elements are: vertebrates (which I will do), invertebrates, botany, and geology. We have the critical personnel, resources, and collections in the Museum to do the study quickly and efficiently, and could prepare the final document. We should also think about preparing a publication on the park, including photographs and well synthesized data. If we imagine that such a finished product was of the same quality as our Bulletin (copy enclosed), then the cost would be about $48.00 per page. I estimate it would be between 100-150 pages, so we would have to plan in $5,000-$7,000 beyond the amount budgeted for the survey. Including secretarial and photographic time, a figure of $8,000 might be best to contemplate. The final product (about 1200 copies) could be used as a text in the training courses, be used in Haiti in the park program, and be distributed to libraries worldwide with the normal Museum Bulletin distribution (± 650 locations).

I hope these ideas help. We can talk further when you have more specific information. I believe the biophysical surveys are an important (and timely) part of the overall project (and its eventual success) so all you can do to get as much AID funding into that category the better.

CAW:prj

Enclosures

13

Totanus flavipes
" *melanoleucus*
Pisobia melanotos
Larus atricilla
Sterna hirundo hirundo
" *dougallii dougallii*
" *fuscata fuscata*
" *albifrons antillarum*
Thalasseus maximus maximus
Chlidonias nigra surinamensis
Chaemepelia passerina insularis
Coccyzus minor teres
Tyrannus dominicensis dominicensis
Hirundo erythrogaster
Corvus leucognaphalus
Phaenicophilus palmarum eurous

BIRDS OF THE SEVEN BROTHERS ISLANDS

The bird life of this group of seven small islets off the north coast between Cap-Haitien and Monte Cristi is known principally from brief investigations made by A. J. Poole and W. M. Perrygo of the United States National Museum who collected there at the end of January and beginning of February, 1929. They did not succeed in landing on the island of Monte Grande which is well wooded and where conditions for small birds are better than on the other islets of the group. Further observations will add considerably to the list of birds that they obtained especially in the way of more migrants since these islands are in a position to attract wandering or lost individuals. The known list of forms follows:

Ardea herodias adoxa
Florida caerulea caerulescens
Pandion haliaëtus carolinensis
Haematopus palliatus prattii
Charadrius melodus
Squatarola squatarola cynosurae
Arenaria interpres morinella
Ereunetes pusillus
" *mauri*
Crocethia alba
Sterna anaetheta melanoptera
" *fuscata fuscata*
Thalasseus maximus maximus
Dendroica petechia albicollis
" *coronata coronata*
" *discolor*

BIRDS OF NAVASSA ISLAND

Finally there may be listed the few birds known from distant Navassa, an American possession that is included in the present account through its geographic position. Our present knowledge of the life of this island comes principally from the work of R. H. Beck who was there in July, 1917, and Dr. E. L. Ekman who visited Navassa in October, 1928. The list at present contains twenty-one forms, one peculiar to the island and two of doubtful status:

Sula leucogastra leucogastra
" *piscator*
Fregata magnificens
Falco peregrinus anatum
Sterna anaetheta melanoptera
Columba leucocephala
Columba squamosa
Chaemepelia passerina navassae
Coccyzus americanus americanus
Crotophaga ani
?*Tyto glaucops*
Megaceryle alcyon alcyon
Tyrannus dominicensis dominicensis
?*Petrochelidon fulva fulva*
Vireo olivaceus olivaceus
Mniotilta varia
Dendroica palmarum palmarum
Seiurus aurocapillus aurocapillus
Geothlypis trichas brachidactyla
Setophaga ruticilla

RECOMMENDATIONS REGARDING FURTHER STUDIES

Attempt has been made in the present paper to make the account for each form complete so far as existing information permits but the many gaps in our knowledge of many birds are readily evident on careful perusal. There are needed especially definite observations on the nests, eggs, and nesting habits of numerous forms, and an economic study of the avifauna remains to be undertaken. The range of the high mountain species remains to be worked out in detail, and there is required much information regarding migrants that come to the island with regard to their arrival, departure, and relative abundance. In a word, the present account with its summary of present information may be taken as a starting point for further detailed studies.

Finally, recommendation is made that definite areas in both republics be set aside as national parks and established as sanctuaries

where original conditions may be preserved for coming generations and the continuance of plants, birds, and other animal life assured. In the present stage of development there remain large areas that as yet have not been commercially exploited where the original xerophytic forests, rain-forests, or stands of pine remain in their primitive condition, but every year sees some curtailment of this condition and some new use proposed for these various types of land. Establishment of park areas and forest reserves, for example in the Quita Espuela district, in the high mountain area about Constanza, on the ridge of La Selle, and in the La Hotte region may now be made without particular difficulty. If delayed too long the timber will be largely destroyed and a condition similar to that in Porto Rico where it has been possible to establish only one reserve of any extent, that on El Yunque, while elsewhere original conditions have been largely destroyed, will result. Such park areas, set aside now and guarded from fire and needless cutting, will prove valuable assets for the future.

ACKNOWLEDGMENTS

The present account of the birds of Hispaniola is due primarily to the interest of Dr. W. L. Abbott, whose untiring energy during his prolonged work in the field assembled the bulk of the specimens upon which our work has been based, giving to the United States National Museum what is unquestionably the finest and most complete collection of the birds of this area extant. In addition to specimens Doctor Abbott has furnished numerous manuscript notes and much oral information on the frequent occasions on which he has been consulted, either in the museum or during visits to his home in Maryland. His assistance has given the greatest addition to knowledge of the avifauna of this region that has come in the present century, and has continued beyond his personal efforts in that he has financed further work on the part of others. The United States National Museum stands deeply indebted to him for his long and continued interest.

In work in the field in 1927 Doctor Wetmore was most hospitably received in both Haiti and the Dominican Republic, and has to acknowledge many courtesies. Through the State Department necessary information and other courtesies were obtained. Col. D. C. McDougal, of the United States Marine Corps, gave much information regarding the island as well as letters that aided most materially in establishing contacts in Haiti. In Port-au-Prince Doctor Wetmore was received with every attention by Gen. John H. Russell, American High Commissioner, and was assisted further by Gen. Julius Turrill, at that time Chief of the Gendarmerie d'Haiti, and

other officers of the Gendarmerie. Thanks are due to the air service of the Marine Corps for transportation to and from Cap-Haïtien by plane, a courtesy that enabled a view of the northern part of the republic not otherwise possible in the time at hand.

Dr. George F. Freeman, Directeur Général of the Service Technique du Departement de l'Agriculture, was deeply interested in the work and afforded every facility to further it, and with Mrs. Freeman extended the hospitality of his home in Port-au-Prince, besides assisting most materially in work throughout the country. To Dr. and Mrs. C. H. Arndt, and Mr. and Mrs. J. E. Boog-Scott thanks are due for hospitable entertainment at Fonds-des-Nègres and Hinche, respectively, while to Dr. William R. Barbour thanks must be returned for the arrangements that permitted work in the north at Poste Charbert. Dr. G. N. Wolcott thoughtfully arranged several local excursions about Port-au-Prince, and other assistance came from Dr. Carl Colvin, Dr. A. E. Vinson, and Mr. M. J. Perry of the Service Technique. Dr. E. L. Ekman, the botanist, was a pleasant companion during an excursion to La Selle, his knowledge of the country and of the people rendering comparatively simple a task otherwise somewhat difficult.

In Santo Domingo City Mr. Evan E. Young, American Minister, was most helpful in giving advice, and in arranging for permits necessary before field work could be begun. These were granted most expeditiously and considerately by Señor Luis Ginebra, at that time Secretario de Estado del Interior, Policía, Guerra y Marina. Earlier assistance in these matters had been courteously rendered by Señor Angel Morales, Minister from the Dominican Republic in Washington, and by Lic. Ramón O. Lovatón, Minister from the Dominican Republic in Port-au-Prince. At La Vega valuable assistance was obtained through the governor of the province, Senor Teófilo Cordero y Bido in arrangements for a trip to Constanza. Finally thanks must be returned to many persons who rendered hospitality during travel in regions not too plentifully supplied with hotel and other accommodations without whose friendly aid the journey would have been difficult or impossible.

In work on collections during the preparation of this report specimens have been examined in the Field Museum in Chicago, the Museum of Comparative Zoölogy in Cambridge, and the American Museum of Natural History in New York City, and necessary material has been received in loan from these institutions, as well as from Mr. J. H. Fleming of Toronto, who further supplied a list of specimens from the Dominican Republic collection secured from the field work of Verrill. Dr. Frank M. Chapman permitted examination of material in the Beck collections, and Dr. Robert Cushman

E.B.: 550 27 janvier 19

Monsieur l'Architecte Albert MANGONES
Directeur Général de l'ISPAN
Avenue John Brown NO 73
B.P. 2484 - Port-au-Prince.-

Monsieur le Directeur Général,

J'ai l'avantage d'accuser réception de votre correspondance du 30 décembre 1982, sous couvert de laquelle vous me transmettez les deux lettres respectivement adressées par le Dr Charles WOODS et M. José Alberto GUTTENWALDER à son prédécesseur, l'Agronome Rémillot LEVEILLE.

Je prends plaisir à vous adresser mes chaleureuses félicitations pour les louables efforts que vos collaborateurs et vous ne cessez de déployer dans la réhabilitation du patrimoine national. Soyez persuadé que, particulièrement, dans le cadre de la préservation et de la conservation des ressources naturelles de notre pays, qui font partie de la mission confiée par le Chef à Vie de la Nation au DARNDR, la plus entière collaboration de ce Ministère vous est acquise.

J'en profite pour vous aviser que, par le biais de son Service des Forêts et de Protection de la Faune, la Direction des Ressources Naturelles du DARNDR continuera à apporter son appui le plus entier au Projet de Création de Zones de Réserve ou de Parcs Nationaux, spécialement au Morne La Vérité et au Pic Macaya. Je vous informe également que j'ai fait appel à l'Agronome Robert Cassagnol, mentionné par vous comme un des défenseurs de ce Projet, à titre de Consultant dans les domaines de la protection de l'environnement et de la conservation des ressources naturelles. Le concours que M. Edmond Mazny, Directeur des Ressources Naturelles et l'Agronome Jean-Baptiste Jean-François pourront vous apporter sera ainsi renforcé.

.../...

81

Je saisis l'occasion pour vous renouveler, Monsieur le Directeur Général, avec l'assurance de la meilleure collaboration de mon Département, l'expression de ma considération distinguée.

HIOCK JULIEN
Secrétaire d'Etat

/sa

S/Sec
Dir.Gén
Cons.Sols
Min.Prés.et Rel.Pblq.

Port au Prince le 16 Février, 1983

AU : SECRETAIRE D'ETAT DE L'AGRICULTURE

DU : CONSEILLER ROBERT CASSAGNOL

SUJET : INSPECTION AU MORNE LA VISITE DANS LE CADRE DE LA CREATION D'UN PARC NATIONAL

Répondant à l'invitation de l'ISPAN qui organisait une expédition du 28 au 30 Janvier dernier au Morne La Visite dans le Massif de la Selle j'ai participé, en compagnie de Mr. Paul Parysky de l'ISPAN, de Messieurs James Talbot et Fred Conway de l'U.S.A.I.D. à une visite des lieux.

Cette activité se plaçait, comme vous le savez, dans le cadre des démarches entreprises depuis environ deux ans par l'Institut de Sauvegarde du Patrimoine National (ISPAN), avec le concours du Docteur Charles Wood de l'Université de Floride pour créer en Haiti des Parcs Nationaux destinés à préserver les sites naturels de grande valeur du patrimoine national.

— LOCALISATION ET CARACTERISTIQUES DU SITE

L'accès au Morne La Visite par la voie carossable la plus proche est celui de la route de Kenscoff-Seguin, plus spécifiquement en suivant le nouveau tronçon récemment ouvert entre Nouvelle Tourraine et la Scierie de Cassé-Dent (Seguin) par l'organisation ''AFÈ NÈG COUMBITE'' dirigée par le Père Sicot Jean, Curé de Kenscoff. Il s'agit d'une piste voiturable par un véhicule à quatre roues motrices, avec des pentes très raides atteignant près de 45°, des courbes parfois fermées, des talus susceptibles aux éboulements, et une chaussée non consolidée souvent sillonnée de crevasses laissées par le passage des eaux de pluie dévalant ces fortes pentes. Pour parcourir une distance estimée à une trentaine de kilomètres à partir de la jonction Nouvelle Tourraine-Furcy il faut mettre environ deux heures en voiture. Arrivée à Carrefour Ca-Jacques en traversant la ligne de crête entre les versants Nord drainant vers la baie de Port au Prince et le versant Sud drainant vers la cote Sud (Jacmel- Marigot) on interrompt la trajectoire en voiture qui atteint la Scierie de Cassé-Dent pour continuer à pied pendant une heure de temps à travers

83

un sentier et d'anciennes voies de tracteurs à travers une pineraie conduisant jusqu'au site de campement au pied du Pic La Visite (2.187 mètres).

Dès l'arrivée à Ca-Jacques, on est frappé pour le contraste entre la topographie extrêmment abrupte et escarpée du versant Nord des montagnes élevées traversées et celle ondulant et graduelle du versant Sud atteint dans la zone avoisinant Ca-Jacques.

La reproduction cartographique présentée en annexe (Figure No. 1) est formée de section des quadrilatères Pic Cabaio 5771 III S.E., Macary 5770 IV N.E., et Inviter 5771 II S.W. du Service de Géodésie où sont indiqués les principaux points de repère et caractéristiques importantes du site.

Les limites indiquées constituent seulement une tentative préliminaire de l'ISPAN, avec le concours du Service des Ressources Forestières du DARNDR, de définir plus ou moins l'aire en question qui doit faire l'objet de considération pour la création d'un Parc National. Elles incluent seulement un millier d'hectares, ce qui ne signifie nullement que le Parc ne puisse être plus étendu.

Selon les observations conduites par le Docteur Wood, au cours de ses nombreuses randonnées, les habitats à conserver, pour protéger les nombreuses espèces animales de haute valeur scientifique, sont localisées à l'est du tronçon de route indiqué sur la carte et incluent particulièrement le Morne La Visite. Le Pic Cabaio et le Morne Bois Pin à l'Est. Une section du peuplement de pins de Cassé-Dent au Sud-Est, attenante au Morne La Visite, est inclue dans l'aire envisagée à cause de ses nombreux traits d'un intéret particulier tels que grottes et caves, Source de la Rivière Blanche captée pour alimenter Seguin, Cascade spectaculaire. Il semble même que cette section de la Rivière Blanche serait le cours d'eau le plus haut non seulement de l'ile mais de toute la région des Antilles.

Selon les informations obtenues du garde forestier installé dans la zone Mr. Cerné FRANCOIS, la forêt de Seguin ne s'étendrait pas au delà de la ligne de crête du Morne La Visite. Très probablement toute la région de hautes falaises donnant face au nord et longeant la ligne de crête de cette section de la chaine de La Selle ne fait pas partie du peuplement de pins intégré au périmètre officiel de la forêt de Seguin.

84

Cependant ces terrains plutot occupés par des peuplements de feuillus (Raque Bois) font également partie du domaine public et sont l'objet depuis peu de temps seulement des déprédations d'agriculteurs itinérants. Il s'agit en fait de pentes si fortes qu'on peut les assimiler à une zone de falaises n'ayant aucun potentiel d'utilisation économique même pour la forêt commerciale. On peut du reste constater que l'exploitation de la pineraie au Sud, par les anciens concessionnaires, s'était effectivement arrêtée au sommet du Morne La Visite, malgré la présence de pin épars, au haut du versant Nord où commencent ces falaises.

Plusieurs petites parcelles cultivées en maïs et autres denrées de subsistence ont été observées à l'intérieur du périmètre de la végétation de feuillus, mais la superficie totale n'atteint peut être pas, pour le moment, une dizaine d'hectares. Cependant, vers le Sud, à l'intérieur des pineraies, de vastes champs de maïs et de légumes occupant plusieurs dizaines d'hectares semblent indiquer un phénomène d'expansion de l'agriculture et de l'élevage dans ce périmètre de forêts, même si seulement deux établissements permanents, dont celui du garde forestier, ont pu être observés.

En résumé il s'agit donc d'un site où les conditions extrêmes d'éloignement par rapport aux centres urbains, d'altitude (2,000 m en moyenne), de topographie (falaises sur tout le versant nord) de climat (températures très basses, vents forts et constants) ont contribué pendant très longtemps à le préserver et le tenir hors des aires d'exploitation continue de l'homme.

Malheureusement la forte pression démographique des zones rurales avoisinantes, l'exploitation abusive des pineraies de Seguin, et dans une certaine mesure la création de nouvelles voies de communication routière (Tronçon Nouvelle Tourraine-Seguin) ont étendu à cette région jusque là sanctuaire naturel pour notre faune, l'influence dévastatrice de l'agriculture itinérante et de l'élevage libre.

— PERSPECTIVES DE PROTECTION ET DE CONSERVATION DE LA FAUNE ET AUTRES VALEURS NATURELLES

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85

Il existe donc un danger réel, si des mesures strictes de contrôle et de redressement ne sont prises immédiatement, que les forces de destruction du milieu ambiant déjà à l'oeuvre s'étendent outre mesure et anéantissent les valeurs biologiques naturelles (espèces animales rares, uniques et en voie d'extinction), en même temps que des dommages sérieux soient causés au milieu physique (érosion accélérée des falaises, tarissement des sources et modification du régime hydrique).

Le DARNDR dans sa structure actuelle et à travers son Service des Ressources Forestières et de la Protection de Faune n'est vraiment pas en mesure d'arrêter ce processus au Morne ''La Visite'', et dans bien d'autres régions du Pays où une protection spéciale est requise pour protéger et conserver dans notre patrimoine national les espèces animales et végétales, et les sites présentant des caractéristiques particuliers de grande valeur sur le plan écologique.

Sur le plan légal, en plus de la législation abondante sur les zones réservées et les forêts, un décret-loi du 18 Mars 1968 denommant ''Parcs Nationaux'',''Sites Naturels'', toute étendue de terres boisées ou pas sur lesquelles sont établis des monuments historiques ou naturels a été publie au Moniteur No.23. La publication de ce décret constitue, en principe, une contribution importante qui pourait être mise à profit en déclarant ''Parc National'' ou ''Site Naturel'', la zone de Morne ''La Visite'' et d'autres sites naturels déjà identifies pour leur valeur écologique exceptionnelle. Cependant, il faut avouer que rien n'a été fait malgré tout pour proteger et travailler à la conservation des dix autres sites mentionnés à l'Article 14 de ce Décret. La possibilite existe donc que le même sort soit réservé aux autres zones déclarées tels sous l'égide du même Décret.

A la vérité il faudrait revoir les termes de ce décret, les renforcer sur la base des nouvelles donnees scientifiques dont on dispose et soumettre à l'autorité compétente un nouveau Projet de Décret non seulement créant les Parcs Nationaux mais prévoyant également le cadre institutionnel adéquat ayant la responsabilité légale et administrative de mettre en application les mesures de protection et de conservation nécessaires en l'occurence.

86

Or si l'ISPAN a eu l'initiative du mouvement de la création des Parcs Nationaux, ses démarches spécifiques sont plutôt orientés vers la création et l'administration des parcs historiques tels que ceux de la Citadelle et du Palais de Sans Souci qui sont liés aux monuments et Sites historiques. L'ISPAN s'est adressé au DARNDR, Secteur spécialisé du Gouvernement en tout ce qui touche la préservation et la conservation des ressources naturelles de notre patrimoine nationale dans le cas du Morne ''La Visite'' et autres Sites Naturels.

Si donc, dans sa structure actuelle le DARNDR malgré cette mission qui lui échet, n'est pas encore en mesure de remplir la fonction protectrice convenable en l'occurence, il convient d'adopter les mesures nécessaires permettant d'aboutir à ce résultat.

Dans le cadre du Projet de Décret revisant celui du 18 Mars 1968 un organisme autonome tel qu'une Direction Nationale des Parcs et Sites Naturels'' pourrait être créée avec les attributions mentionnées précédemment d'avoir la responsabilité légale et administrative de mettre en application les mesures de protection et de conservation nécessaires en la circonstance.

— <u>DEMARCHES ADDITIONNELLES DESTINEES A LA PRESERVATION DU SITE</u>

En renforcement des activités, études et observations entreprises par le Docteur Charles Wood dont les résultats sont présentés en résumé dans les annexes I, II et III du présent rapport, il convient de mentionner le volume important de correspondance reçu de la communauté internationale qui s'intéresse grandement au sort réservé à ces quelques zones très limitées du Massif de la Selle et du Massif de la Hotte dont l'intérêt scientifique constitue un sujet valable non seulement pour nos futures générations d'haitiens mais aussi pour les chercheurs et hommes de science de tous les pays.

Copie de cette correspondance est présentée à l'annexe IV du Rapport. En créant ces Parcs Nationaux et en avisant au moyen de les faire fonctionner, on contribuera sans aucun doute à créer en faveur de notre pays un courant favorable à l'instauration d'une vraie Politique de Préservation et de Conservation de nos Ressources Renouvelables, et à changer l'image du Cauchemar Ecologique qu'on se fait généralement d'HAITI.

Décret du 18 Mars 1968 dénommant "Parcs Nationaux", "Sites Naturels", toutes étendues de terres boisées ou pas sur lesquelles sont établis des monuments historiques ou naturels.

Réf: Moniteur no. 23 du Lundi 18 Mars 1968

DECRET

Dr FRANCOIS DUVALIER
Président à Vie de la République

Vu les articles 22, 48, 66 et 90 de la Constitution;

Vu la loi du 21 janvier 1926 sur la Reconnaissance d'Utilité Publique;

Vu la loi du 3 Février 1921 sur les Forêts Nationales Réservées;

Vu les articles 182, 183, 184, 185, 186, 187, 188, 189 et 190 du Code Rural François DUVALIER;

Vu la loi du 7 mai 1936 constituant en zone réservée le bassin d'alimentation des sources de Plaisance et Cerisier et déclarant la dite zone d'utilité Publique;

Vu le Décret de la Chambre Législative en date du 19 septembre 1967, suspendant les garanties prévues aux articles 17, 18, 19, 20, 25, 31, 34, 48, 70, 71, 72, 93 (7ème alinéa), 126, 147, 148, 151, 152, 190, 195 de la Constitution; et accordant Pleins Pouvoirs au Chef du Pouvoir Exécutif pour lui permettre de prendre jusqu'à la rentrée de la Chambre Législative le deuxième Lundi d'avril 1968, par Décrets ayant force de Lois toutes les mesures qu'Il aura jugées nécessaires à la sauvegarde de l'intégrité du Territoire National et de la Souveraineté de l'Etat, à la consolidation de l'ordre et de la Paix, au maintien de la stabilité politique, financière et économique de la Nation, à l'approfondissement du bien-être des populations, à la défense des intérêts généraux de la République;

Considérant que la forêt joue un rôle de premier plan dans l'équilibre social et physique du milieu et constitue une richesse inestimable parmi les ressources appelées à contribuer au bien-être des populations urbaines et rurales;

Considérant qu'il convient de la protéger afin de préserver les rapports entre le milieu vivant et le milieu physique;

Considérant qu'à cette fin il y a lieu de mettre l'accent sur les engagements internationaux et notamment de la 26ème résolution de la VIème Session de la Conférence de la FAO de novembre 1951 relative aux principes d'économie et de politique forestière;

Considérant qu'il est du devoir de l'Etat de prendre toutes mesures [illegible] pour favoriser cette politique et faciliter le reboisement des zones érodées ou la réhabilitation des sites touristiques et historiques;

Sur le rapport des Secrétaires d'Etat de l'Agriculture, des Ressources Naturelles et du Développement Rural, des Finances et des Affaires Economiques, de la Justice;

Et après délibération en Conseil des Secrétaires d'Etat;

Decrète:

Article 1er.- Sont dénommés (PARCS NATIONAUX), (SITE NATURELS) toutes étendues de terres boisées ou pas sur lesquelles sont établis des monuments historiques ou naturels, qui, par leur situation ou pour des raisons de convenances ou d'utilité publique, doivent demeurer intactes et, en aucun cas ou aucune circonstance, ne doivent être soumises à une exploitation agricole ou forestière quelconque.

Article 2.- Les Parcs Nationaux et sites naturels font partie du domaine public et possèdent, en conséquence, un caractère inaliénable et insaisissable.

Article 3.- Les parcs nationaux et les sites naturels seront aménagés par le Département de l'Agriculture, des Ressources Naturelles et du Développement Rural et administrés conjointement avec l'Office National du Tourisme.

Article 4.- Peut devenir (Parc National) ou (Site Naturel):

a) Toute étendue de terre sur une superficie d'au moins 5 has. autour des cascades, des chutes d'eau, des sources d'alimentation en eau potable, des sources thermales ou sulfureuses, des grottes ou des monuments naturels;

b) Toute étendue de terre autour des lacs et étangs, sur un rayon d'au moins 200 mètres à partir de leur pourtour:

c) Toute étendue de terre destinée à protéger et à conserver la faune et la flore nationales, ainsi que des objets d'intérêt historique, géologique, scientifique, touristique

Article 5.- Il est institué dans chaque Département une commission chargée de la protection des monuments et sites naturels chaque commission départementale établit la liste des monuments et sites naturels dont la conservation ou la préservation présente un intérêt général au point de vue artistique, historique, scientifique, légendaire ou pittoresque. Les monuments et sites naturels ainsi inventoriés seront classés. La liste comprendra les lieux et les immeubles.

Article 6.- Si la zone decrétée (Parc National) ou (Site Naturel) appartient en partie ou en totalité à des particuliers, l'expropriation est, de fait, reconnue d'utilité publique. Les particuliers qui auront des terres enclavées seront expropriées moyennant le paiement ou la consignation à leurs ordres d'une juste et préalable indemnité.

Article 7.- Il sera procédé aussitôt après le classement de la zone décrétée (Parc National), à la reconnaissance, à la délimitation et au bornage de ces terres intégrées désormais au domaine public.

Article 8.- Lorsqu'il y aura lieu de commencer les opérations prescrites à l'article 7, elles seront annoncées 2 mois à l'avance au plus par un communiqué conjoint des Secrétaires d'Etat de l'Agriculture, des Ressources Naturelles et du Développement Rural, des Finances et des Affaires Economiques et de la Justice, ce Communiqué indiquera le jour fixé pour le commencement des opérations.

Article 9.- Un délai de 90 jours francs est accordé aux propriétaires riverains des terres soumises au régime de Parcs Nationaux et des Sites Naturels, de terres enclavées, pour déposer à l'Administration Générale des Contributions contre récépissé, les plans, titres et

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documents quelconques établissant leurs droits de propriété.

Article 10.- Le procès-verbal de reconnaissance et de délimitation sera immédiatement cadastré par l'Administration Générale des Contributions et déposé au Département de l'Agriculture, des Ressources Naturelles et du Développement Rural. Il en sera donné avis par communiqué des Secrétaires d'Etat de l'Agriculture, des Ressources Naturelles et du Développement Rural, des Finances et des Affaires Economiques. Les intéressés pourront en prendre connaissance et formuler leur opposition dans un délai de 6 mois à partir de la promulgation de ce communiqué.

Article 11.- Si, à l'expiration du délai de 6 mois, il n'a été produit aucune réclamation par les propriétaires contre le procès-verbal de reconnaissance et de délimitation, l'opération sera définitive.

Article 12.- L'Administration Générale des Contributions procèdera dans les trois (3) mois suivants au bornage et à la délimitation des aires, en présence ou en l'absence des intéressés qui seront avisés par communiqué et par citation par les tribunaux de Paix de la Juridiction.

Article 13.- La séparation ou la délimitation sera effectuée par des bornes en béton de 2 mètres de haut, distancées au plus de 20 mètres. Le Département des Finances, le Département de l'Agriculture, des Ressources Naturelles et du Développement Rural et la Direction de l'Office National du Tourisme, supporteront conjointement les frais de bornage et de délimitation.

Article 14.- Sont d'ores et déjà déclarés (Parcs Nationaux et Sites Naturels) les aires ci-dessous désignées:

a) la superficie minimum de 10 has entourant les sources Puantes, commune de Port-au-Prince.

b) la superficie minimum de 20 has entourant les Sources Chaudes, commune de Anse-Rouge.

c) la portion minimum de 10 has entourant les sources Cerisier, Plaisance, commune de Pétion-Ville.

d) la portion minimum de 5 has entourant le Fort Mercredi, commune de Port-au-Prince.

e) la superficie minimum de 9 has entourant les Forts Jacques et Alexandre, commune de Pétion-Ville.

f) la portion de 250 has au minimum entourant la Citadelle, commune de Milot.

g) la portion de terre autour du lac de Péligre, sur un rayon de 200 mètres, commune de Mirebalais.

Article 15.- En vue de préserver dans leur état les parcs, monuments et sites, il est créé une Caisse Nationale alimentée par les crédits budgétaires, les dons, les produits des tarifs établis pour les visites ou les excursions.

Article 16.- Le présent décret abroge toutes Lois ou dispositions de Lois, tous Décrets-Lois ou dispositions de Décrets-Lois, tous Décrets ou dispositions de Décrets qui lui sont contraires et sera publié et exécuté à la diligence des Secrétaires d'Etat de l'Agriculture, des Ressources Naturelles et du Développement Rural, des Finances et des Affaires Economiques et de la Justice,

-90

chacun en ce qui le concerne.

Donné au Palais National, à Port-au-Prince, le 18 Mars 1968, An 165ème de l'Indépendance.

Par le Président: Dr. FRANCOIS DUVALIER

Le Secrétaire d'Etat de l'Agriculture, des Ressources Naturelles et du Développement Rural: LOUIS BLANCHET

Le Secrétaire d'Etat des Finances et des Affaires Economiques: CLOVIS M.DESINOR

Le Secrétaire d'Etat de la Justice: S. MOI DESVARIEUX

Le Secrétaire d'Etat du Commerce et de l'Industrie: LEBERT JEAN-PIERRE

Le Secrétaire d'Etat de la Santé Publique et de la Population: Dr. FRITZ AUDOUIN

Le Secrétaire d'Etat de l'Education Nationale: LEONCE VIAUD

Le Secrétaire d'Etat de la Coordination et de l'Information: PAUL BLANCHET

Le Secrétaire d'Etat des Affaires Etrangères et des Cultes: RENE CHARLMERS

Le Secrétaire d'Etat des Affaires Sociales: MAX A. ANTOINE

Le Secrétaire d'Etat de l'Intérieur et de la Défense Nationale Dr. AURELE A. JOSEPH

Le Secrétaire d'Etat des Travaux Publics, des Transports et Communications: RAOUL LESPINASSE

91