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CARIBBEAN

PLANT CONSERVATION PROJECT

PROJECT COMPLETION REPORT
DRAFT C



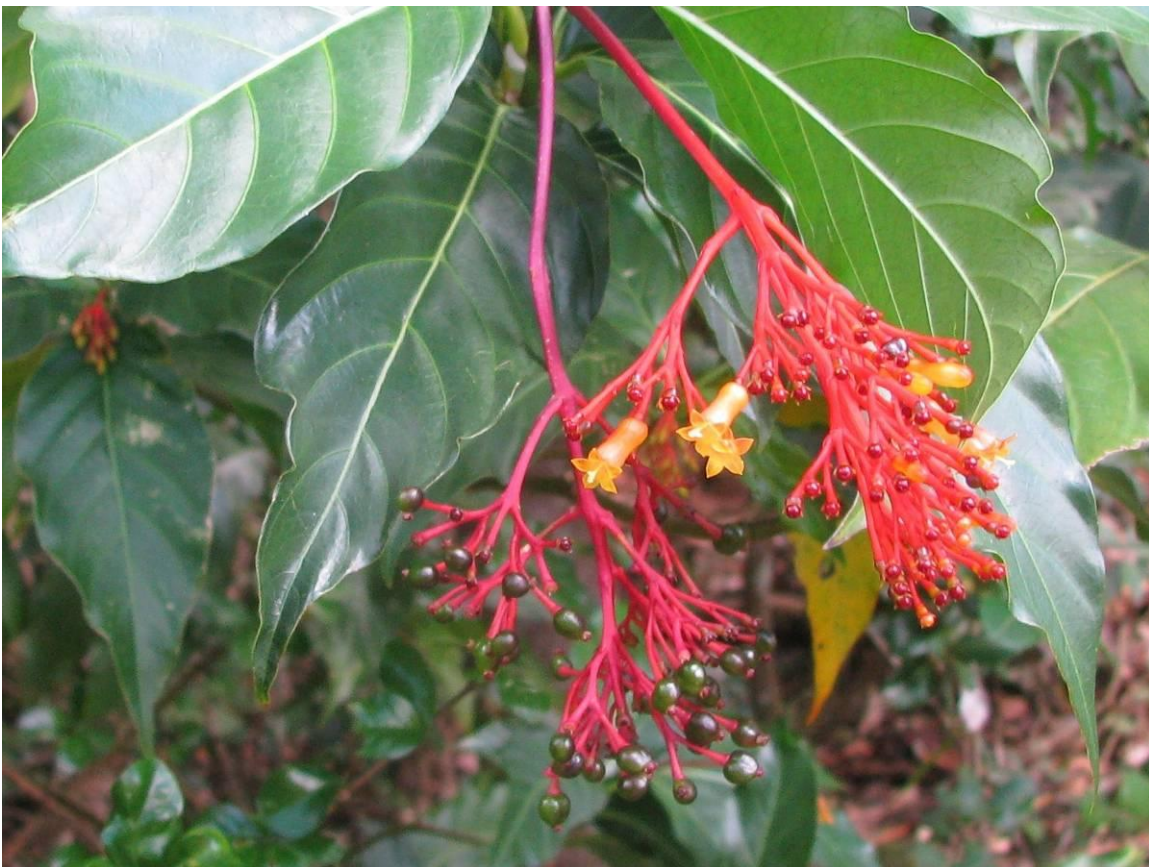
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CONTENTS

Executive Summary	1
Acknowledgements	2
Background to the Project.....	2
Project Goals.....	3
Surveys.....	3
Project Achievements.....	3
Community and Government Feedback	5
Results	5
Next Steps	6
References.....	6
Appendix 1 – The Plant Database	7



EXECUTIVE SUMMARY

The Plant Conservation Project was launched in October 2007 with funding from the USAID Caribbean Open Trade Support Program and has benefitted from expert support from the University of the West Indies.

The project aim has been to address the abuse of our environment by developing a solid scientific base of knowledge about our native plants and natural environments and raising awareness about the environment and the needless destruction and desertification which is going on around us.

A major component of the project has been extensive field surveys of some 50 biologically diverse locations.

The project achievements have been twofold:

- firstly, building a comprehensive scientific foundation and understanding of exactly what species and environments exist in Antigua and Barbuda. This includes an extensive publically available database including data on over 1000 species and 10,000 good quality photographs, a detailed analysis of threatened species and ecosystems and a 400 page draft field guide to the plants of Antigua and Barbuda.
- secondly, producing awareness raising publications including a Guide to the Plants in the National Park, posters and a newsletter and holding awareness raising events including workshops for students and members of the public. We have made presentations to Government including our detailed recommendations for protecting rare species and ecosystems based on an analysis of the data compiled from the surveys.

The Environment Division is still working on the Environmental Protection and Management Bill and we continue to support their efforts and to lobby for our reports to be used in the biodiversity sections of the Bill.

Although the project is complete, we intend soon to publish the field guide developed as part of this project. The field guide will be the basis for public education and awareness about our plants and the threats to them. It will be used for field trips, guided tours and workshops.

The EAG will also build on the achievements of this project with media presentations to increase public support for plant conservation measures, and lobbying Government for action, including legislation to protect rare species and threatened biologically diverse areas.



ACKNOWLEDGEMENTS

The Environmental Awareness Group wishes to acknowledge the support given by many people and organisations during this project.

In particular, the EAG project manager, Christopher Pratt, wishes to thank the project team - Kevel Lindsay, Carolyn Thomas, Melanie Pearson and Joan Knight for working way beyond our requirements and expectations.

We would like to thank the United States Agency for International Development (USAID) through its Caribbean Open Trade Support programme (COTS) for financial assistance, without which, this project could not have been undertaken.

We would also like to thank Yasmin S. Baksh-Comeau of the National Herbarium of Trinidad and Tobago, the University of the West Indies, St Augustine, Trinidad, West Indies for providing botanical and herbarium support for the project.

The project team would like to thank Dr Brian Cooper and Kim Derrick of the EAG for their invaluable championing of, and support for, the Plant Conservation Project. We would also like to thank John Mussington who provided great assistance with our surveys of Barbuda, Roberta Williams of the GARD Centre, who helped with the training of those involved in the project, Dr Janil Gore-Francis and Adriel Thibou of the Ministry of Agriculture and Anne Marie Martin and Dr Reg Murphy of the National Parks Authority.

BACKGROUND TO THE PROJECT

The EAG has long recognized that many people, young and old, from all walks of life, including Government agencies, think that our countryside is just waste land fit only for grazing goats and for clearing for building on. There is even a commonly held belief that fire setting which destroys so much forest land is a normal activity. There is almost no understanding of the devastating effects, both short and long-term, of our actions resulting from these ill-founded beliefs.

The facts are very different from the myths: once away from habitation, we have some wonderful and diverse natural areas:

- the wooded hillsides and mountain forests, many with 95% native vegetation, that is plants that were here before colonial times;
- our wetlands and brackish marshlands, with 5 native mangrove species, mangrove ferns and other rare species;
- our coastal forests with unique and endangered dry forest species;
- shady, rocky ghauts covered with ferns and other plants unique to this moist environment, and



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- epiphytic vegetation - ferns, cacti, orchids, bromeliads and other species which live up in the canopy, adorning our trees.

Not only are we losing these beautiful and endangered areas, so important for recreation and tourism, but we are destroying our watersheds and fertile land so important for the economy and for future generations. The threats come from many man-made causes, but notably from goat damage, fire setting, uncontrolled and unnecessary clearing of land, the needless clearing of ghauts and the removal of sand and soil from important areas.

PROJECT GOALS

The project aim has been to address the abuse of our environment by developing a solid scientific base of knowledge about our native plants and natural environments and raising awareness about the environment and the needless destruction and desertification which is going on around us.

FIELD SURVEYS

One of the most important aspects of the project has been some 50 field surveys by the project team with occasional participation of students and Government people. All major ecozones of Antigua and Barbuda have been surveyed in detail, except for the off-shore islands. Survey material collected included: plant specimens which have been sent to the herbarium at the University of the West Indies in Trinidad, plant descriptions, gps locations of important plants, photographs and site data.

PROJECT ACHIEVEMENTS

The project achievements have essentially been twofold – firstly building a scientific foundation for future conservation work and secondly awareness raising publications and events. These two achievements are described below:

1. Building a scientific foundation and understanding of the species and environments that exist in Antigua and Barbuda

Publicly Available Plant Database

A database was developed at the start of this project which has been populated with botanical data and data and photographs from our surveys. It is now available for public use at the EAG office. Appendix 1 describes the data collected and held in the database.

Plant Conservation Status and Red List of Threatened Species

Plant data from our surveys has been analysed and each species given a "conservation status" using IUCN guidelines. From this, we developed a list



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which we have proposed to the Government for inclusion in environmental legislation. This is summarized in the Red List report ^[3].

Biodiversity Data and Protected Area Recommendations

The biodiversity and bioquality of survey locations has been quantified based on our survey data and on other information in the database such as endemism. This enabled us to identify the most biologically important sites. This is summarized in our recommendations to Government on areas which should be protected ^[4].

Draft Field Guide

This is the first serious work on plant identification in A&B since Richard A. Howard wrote the Flora of the Lesser Antilles between 1974 and 1989. The field guide is aimed at local people and also tourists. It has photographs and descriptions of 495 species with textual descriptions of around 15 more. The field guide also contains over 80 keys to assist with identification and other botanical information for the layman.

The field guide includes 41 taxa not previously published for Antigua and Barbuda. Eight of these are quite rare and endemic to the West Indies and two have not been described before. A further 16 are native to the Caribbean basin.

Skills Development

The project has provided in-depth training to local persons in plant identification and preservation, as well as involving them in writing sections of the Field Guide. This is not only important for Antigua and Barbuda, but also for the region. Skills developed on this project have been put to good use on Nevis – the team are providing expert support to a project to develop Nevis Peak as a Protected Park.

2. Awareness Raising Publications and Events

Publications we have produced

- a guide to the trails and plants in the Nelson's Dockyard National Park.
- an EAG newsletter which includes much information about our project, as well as other EAG projects.
- a set of 10 posters about our native plants and the threats to them.

Events we have organised

- a plant identification workshop to enable people to identify our native species with the help of our field guide.
- a botany workshop to train people in surveying ecosystems and in collecting, pressing and preserving plants.
- community consultations.



- presentations to Government on threatened species and ecosystems and recommended legislation.
- working with State College – field trips, talks and a radio program.
- a stand at Arbor Day with posters about the environment and the threats to it.

COMMUNITY AND GOVERNMENT FEEDBACK

We have had very positive feedback from attendees at all our workshops and presentations described above. For example, the Plant Identification Workshop was significantly oversubscribed and consequently it is planned to hold further workshops directed specifically at students and community groups.

Government feedback has been very positive especially in assisting them with the development of environmental legislation.

The setting up of Protected Areas, as described in our report, is perhaps the most important step that we are looking to the Government to implement. We are disappointed with the lack of Government progress on this crucial issue and we will continue to lobby on this topic.

RESULTS

We believe that the project has succeeded in building a solid foundation for future conservation work. The extensive surveys, the database, the Red List and the recommendations for Protected Areas, the Guide to the Plants in the National Park and the Draft Field Guide provide a baseline which can be used by students and Government as well as communities and concerned individuals.

The Environment Division is still working on the Environmental Protection and Management Bill and we continue to support this work. We expect that our reports will be used in the biodiversity sections of the Bill.

Attitudes are changing and people are waking up to the need to act to prevent serious further degradation and to conserve our biodiversity. We would very much like to see these attitudes change much more rapidly and we recognize that much more time and effort is needed in awareness raising events, presentations to Government and working with educational establishments. We have made a start on this as described above and it is abundantly clear that this aspect of the project needs to be ramped up to achieve significant changes in attitudes and behaviour.



NEXT STEPS

Although the project is complete, we intend to publish the field guide in the very near future and organize guided tours, educational events and further workshops using the field guide as the basis. We will continue to press for Government action including legislation to protect rare species and threatened biologically diverse areas.

We also hope to use the current COTS funded Goat project to address some of the public education needs highlighted herein.

REFERENCES

1. Guide to Plants and Historic Sites in Nelson's Dockyard National Park, Environmental Awareness Group.
2. Checklist of Native and Naturalised Plants of Antigua & Barbuda, USAID Report, Issue 02, 20 December 2007, Environmental Awareness Group.
3. Red List of Vascular Plants of Antigua and Barbuda, USAID Report, Issue 05, 20 November 2008, Environmental Awareness Group.
4. Recommendations for Protected Areas in Antigua and Barbuda , Issue 02, 10 November 2008.
5. Field Guide to the Native and Naturalised Plants of Antigua and Barbuda, Draft



APPENDIX 1 – SPECIES DATA

This Appendix provides some more details on the database and the species found during this project. The database consists of 4 components as follows:

- **Species Information**

This includes details of 1190 species of vascular plants ¹. These 1190 species include 1140 species recorded by botanists over the past 40 years and about 50 additional species that we have recorded in our surveys ². Of these 1190 species, our primary focus has been on the 648 trees, shrubs, monocots and ferns as these are seriously threatened. The number of species of different types in the database is as follows:

Trees, shrubs, monocots, vines, ferns	Other Species not studied				Total
	Small herbs	Cultivated plants	Grasses & sedges	Submerged aquatics	
648	268	129	135	10	1190

Of the 648 species studied in this project, the results of our surveys are as follows:

Species in the Database	Species found & included in the Field Guide	New species found and added	Species not identified
648	495	41	153

We have photographs and specimens of many species that we have not been able to identify as yet, often because no fertile material was present. However, it is likely that some of the 153 species not found are now extremely rare or have been extirpated since the original observations.

It is not possible to say how many species are native to Antigua and Barbuda. However, the following table gives an indication of where the species originate from. Of the 495 species in the field guide, the proportions of neotropical species, species endemic to the West Indies and species either introduced or pantropical is as follows:

¹ The database is a living entity so the numbers may change in due course.

² Each species record in the database includes scientific name, synonyms, common name, distribution, conservation status, habitat, form, references and source data.



	Neotropical Species exc. Regional Endemics	Regional Endemics	Pantropical or Introduced Species
Number	286	102	106
Percentage	58	21	21

- **Specimen Data**

This includes records of specimens collected ³.

- **Location Biodiversity Data**

This includes a list of all the species found at survey locations.

- **Photographic Database**

The photograph database includes about 10,000 good quality photographs, indexed by family, scientific name, location, date and time, and other attributes.

³ Each specimen record in the database includes species identity, location, habitat, description, collectors and date and is also used to print labels for pressed specimens.