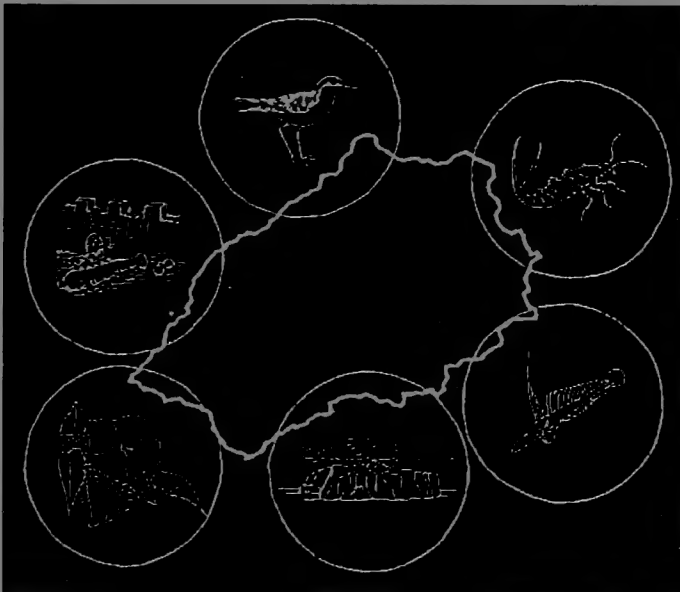


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# *ST. HELENA* *AN ISLAND BIOSPHERE*

Promotion of the island and surrounding waters  
as an internationally recognised site  
of natural and cultural heritage

## EXECUTIVE SUMMARY



Draft document  
prepared by the St. Helena Working Group  
with the support of the NGO Forum for Nature Conservation in the UK Dependent  
Territories

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## INTRODUCTION

This document has been produced in response to a request from His Excellency the Governor of St Helena for a summarised version of the draft technical report entitled *St Helena An Island Biosphere Reserve*. The executive summary is compiled from the latest December 1992 version and has been distilled down to approximately 30% of the original material in the full document. All subject headings have been retained to ensure coverage in summarised form.

As is the case with the full text report, this summary has been structured in the manner suitable to aid compiling a formal nomination for Biosphere Reserve status. It is hoped that this approach will both serve to familiarise the reader with the standard procedures and moreover help to demonstrate that St Helena, if it so wishes, is strongly placed to meet the requirements for meriting Biosphere Reserve status, helping to receive the degree of international recognition it so richly deserves.

P.E. Pearce-Kelly (Zoological Society of London, Chair St Helena Working Group)  
G.R.F. Drucker (World Conservation Monitoring Centre, Biosphere Reserve Advisor St Helena Working Group)

Joint Editors  
(On behalf of the St Helena Working Group)

St. Helena Working Group  
c/o World Conservation Monitoring Centre  
219 Huntingdon Road, Cambridge, CB3 0DL, United Kingdom  
Tel: (44) 223 277314  
Fax: (44) 223 277136  
Tlx: 817036 SCMU G

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**ST HELENA AN ISLAND BIOSPHERE  
EXECUTIVE SUMMARY**

**CONTENTS**

**BACKGROUND**

**An international mechanism for realising a conservation and development strategy for St Helena**

**What are Biosphere Reserves?**

**Why a biosphere reserve for St Helena?**

**Implementation of the Biosphere Reserve concept**

**Selection for Biosphere Reserve status**

**ST. HELENA: THE ISLAND PROFILE**

1	Conservation Value .....	5
2	Geographical Location .....	5
3	Date and History of Establishment .....	5
4	Size of Areas of Ecological Importance .....	6
5	Land Tenure .....	6
6	Physical Features .....	6
7	Climate .....	7
8	Vegetation .....	7
9	Fauna .....	7
10	Historical and Cultural Heritage .....	8
11	Local Human Population .....	8
12	Visitor and Visitor Facilities .....	9
13	Scientific Research .....	9
14	Conservation Management .....	10
15	Management Constraints .....	13
16	Staff .....	14
17	Budget .....	14

## ST HELENA AN ISLAND BIOSPHERE EXECUTIVE SUMMARY

### BACKGROUND

The Government of St Helena has set out in detail a plan of action for putting the National Development Plan (1989-94) into action.

The main aims of the National Development Plan for St. Helena are identified as:

- \* better use of national resources;
- \* sustainable improvement in living standards and quality of life;
- \* reduced dependence on the UK;
- \* creation of meaningful employment;
- \* reduced isolation.

To help realise the aspirations laid out in the National Development Plan St Helena's Legislative Council ratified the *St. Helena Environmental Conservation Policy* (1991) "to develop a sustainable island biosphere in which human influences play a symbiotic role"

### AN INTERNATIONAL MECHANISM FOR REALISING A CONSERVATION AND DEVELOPMENT STRATEGY FOR ST HELENA

In order to help apply the Environmental Conservation Policy, a proven international mechanism, the Biosphere Reserve, is suggested as being particularly appropriate for St Helena.

- \* The Biosphere Reserve mechanism is highly appropriate for ensuring the integration of development and a sustainable environment on St Helena. Moreover, the international recognition conferred by receiving Biosphere Reserve status would also have the invaluable benefit of raising the profile of St Helena worldwide, serving to reduce its current state of isolation.

### WHAT ARE BIOSPHERE RESERVES?

A Biosphere Reserve is an international designation made by the United Nations on the basis of nominations submitted by countries and their dependencies participating in the Man and Biosphere Programme (MAB), of which the United Kingdom is an established member. The Biosphere Reserve concept combines conservation and development with the sustainable use of natural resources and has at its centre the economic requirements and well-being of the human community.

- \* Biosphere Reserve guidelines are intended to generate an environment where government, local people, land managers and scientists cooperate in developing a model programme to manage land, and water resources to meet the whole island's needs while conserving natural processes and biological resources of local and global importance.
- \* *Biosphere Reserves consist of land and/or marine areas in which people are an integral component, with management objectives ranging from complete protection to intensive yet sustainable production;*
- \* *Biosphere Reserves are intended to conserve examples of important natural and cultural heritage;*

- \* *Biosphere Reserves serve to increase education, training, monitoring and research;*
- \* *Biosphere Reserves provide a working model for uniting the community in managing its human needs and natural resources;*
- \* *Each Biosphere Reserve is a symbol of voluntary cooperation to conserve and use resources for the well-being of people.*

Because Biosphere Reserves form part of an international scientific and educational programme, as opposed to being designated under a specific convention, they impose no legally binding obligations or development constraints.

### **WHY A BIOSPHERE RESERVE FOR ST HELENA?**

Biosphere Reserves have numerous beneficial applications to help communities: to conserve biological resources; to set up mechanisms to monitor both natural- and human- induced changes, such as erosion; to improve management of natural and cultural resources; to share knowledge through results and application of Biosphere Reserve research worldwide, and to cooperate in solving natural resource problems.

Biosphere Reserves are intended to become models for efficient resource-use practises. The practical benefits for St. Helena are many and varied for Local people, Government administrators and resource managers alike.

Were St. Helena to win Biosphere Reserve status the island's profile in the international community would be raised dramatically, greatly enhancing the island's ability to attract outside recognition and resources. Not only would this have implications on the volume of trade (through increased tourism, for example), but it would also attract increased cooperation from the global community through attracting research and development, whilst helping to address St. Helena's prime constraint of extreme isolation.

Biosphere Reserve management guidelines are intended to provide Government decision makers with improved resource information, leading to increased technical and institutional capabilities and enhancing access to technical and possible financial support from agencies within the United Nations and European Community as well as non government organisations.

Research and training in Biosphere Reserve models for efficient resource managers to better assess current land and management strategies, enabling available natural, human and financial resources to be used to maximum effect.

Benefits to the local community can include the protection of basic resources; improved land management skills; a more productive and diverse economic base; additional employment; a cleaner, healthier environment; more influence in land-use decisions; reduced conflict with protected area administrators; increased pride in traditions and enhanced opportunities to maintain and improve existing lifestyles.

Of the world wide total of 300 Biosphere Reserves only a tiny number are islands. The most famous of these island Biosphere Reserves are the Galapagos Islands, the US Virgin Islands and Hawaii. St Helena would be unique in being the only island Biosphere Reserve in the South Atlantic and could represent this important region and receive its deserved international recognition.

## IMPLEMENTATION OF THE BIOSPHERE RESERVE CONCEPT

The Biosphere Reserve working structure is designed to carry out the complementary activities of resource conservation and the development of sustainable resource uses. To this end, Biosphere Reserves consist of three integrated zones: a core area, a buffer zone and a transition area.

- \* **CORE AREAS** consist of a number of types. The first includes examples of minimal disturbed ecosystems characteristic of communities of terrestrial and/or marine habitats of global significance. The second type may include cultural sites characteristic of the human communities which they serve. In the case of St. Helena, the core areas could incorporate the historic centre of Jamestown, the endemic rich Peaks and important marine sites such as the dolphin runs off the northwest coast of the island.
- \* **BUFFER ZONES** adjoin or surround the core areas. Uses and activities are managed in ways that help protect the core. The boundaries of this demarcated zone often coincide with those of national parks or with multiple use areas such as the Economic Fishing Zone surrounding the island, and the rehabilitation areas of the plant propagation programme.

The buffer zone, and the surrounding transition area, includes areas where management, including habitat restoration, is practised. Experimental Research Areas are used for developing ways to manage vegetation, wildlife, agriculture, forests, fisheries, and other natural resources in order to enhance production while conserving natural processes.

- \* **TRANSITION ZONES** are the outermost parts of a Biosphere Reserve which typically surrounds the core area and buffer zone. This is usually an unmarked interactive zone where conservation knowledge and management skills are applied. Such zones contain settlements, agricultural land, managed forests, reforestation areas, areas for intensive use, such as tourism or recreation, and other economic uses required for sustainable development of the island.

## SELECTION FOR BIOSPHERE RESERVE STATUS

To ensure effective cooperation and integration of the Biosphere Reserve on land and in the sea, management and technical committees need to be established to provide a framework for cooperation between fisheries, forestry, education and other managers, government agencies, local people and scientific community.

The MAB Secretariat in UNESCO encourage each Biosphere Reserve administration to prepare a management plan that indicates specific steps to be taken to develop and coordinate the Biosphere Reserve. The management plan may be a separate undertaking or may use an existing integrated process incorporating existing land and sea planning strategies. In the case of St. Helena the action could be built around the National Development Plan, the St. Helena Environmental Conservation Policy and other such initiatives currently underway.

In agreeing to nominate an area as a Biosphere Reserve, the managing authorities acknowledge a responsibility to cooperate with local and regional institutions in planning and managing the area for environmental and human benefit.

National MAB Committees are responsible for preparing Biosphere Reserve nominations and for involving appropriate institutions and individuals in preparing the supporting documentation. In the case of St. Helena, the Government of St. Helena, and its counterparts in the UK, have such responsibility.

Each nomination form is evaluated by a small independent group of experts, who recommend nominations believed to satisfy selection criteria for review by the Bureau, Executive Committee, of the MAB International Coordinating Council. If the Bureau approves the site, the National MAB Committee receives the certificate of designation from UNESCO.

There is every reason to believe that St Helena stands the highest chance of obtaining Biosphere Reserve status.

## **ST. HELENA: THE ISLAND PROFILE**

### **1. CONSERVATION VALUE**

It is clear that the marine and terrestrial environment, flora and fauna, as well as the human culture and history of St. Helena, all present unique aspects of both national and global importance and that its conservation value is widely acknowledged, meriting a place amongst islands of the first rank in biological and cultural importance as Biosphere Reserves.

- \* There are at least 10 endemic plant genera and 40 endemic species of flowering plants; a phenomenally rich invertebrate fauna, with over 150 endemic insect species (including the world's largest earwig) and unique land snails potentially important for genetic research; the endemic wirebird, 10 endemic species of marine fish and a variety of endemic marine invertebrates.
- \* St Helena's coastal waters possess perhaps the finest dolphin run in the world.
- \* Important palaeontological remains are found in the rich sediment areas of the island.
- \* The island has outstanding physical features with a unique erosional landscape, with what are probably the highest seacliffs in the Southern Hemisphere.
- \* Much of the endemic flora and fauna is now severely threatened.
- \* By virtue of its strategic position and extreme isolation, St Helena is of enormous historical and cultural importance. The island's historical connections with the East India Company, Napoleon, whaling, as well as a continuous chronology of globally important scientific research, from 1676 through to the present day, is further justification for receiving high international recognition.

### **2. GEOGRAPHICAL LOCATION**

St. Helena is a British Dependent Territory situated in the South Atlantic Ocean, 1,960km from the nearest point on the southwest coast of Africa and is one of the most isolated tropical islands in the world.

### **3. DATE AND HISTORY OF ESTABLISHMENT**

Management tools within Biosphere Reserves may include the establishment of various levels of protection to safeguard natural resources and wildlife.

- \* Some of the earliest environmental legislation for St Helena dates from 1709 for the protection of forests.

- \* The basis of the current protected area legislation is the Forestry Ordinance, No. 9 of 25 October 1954 which empowers the Agricultural and Natural Resources Committee, to declare three categories of protected area: national forest, dedicated forest, and protected private forest.
- \* The Forestry Indigenous Trees and Plants Preservation Rules of 1959 details plants to be protected wherever they grow on the island, and annexed amendments include all major endemic species.
- \* The Crown Wastes, which are Crown Property, and so protected from private development, are protected by ordinance against grazing animals of all kinds.

Other relevant legislation includes the Wildlife (Protection) Ordinance of 1984 and the Game and Wild Birds (Protection) Ordinance 1950.

#### **4. SIZE OF AREAS OF ECOLOGICAL IMPORTANCE**

There is no size limit for Biosphere Reserves but the most ideal situation is to include the entire biosphere, in the case of St Helena this would include the entire island and surrounding waters.

- \* Total area of St Helena is approximately 122 sq. km (47 sq. miles). Total productive forest approximates to 1,000ha and conservation forest area is approximately 200ha.
- \* The marine territory of St. Helena is the 200 mile Exclusive Fishing Zone (EFZ).

#### **5. LAND TENURE**

Biosphere Reserves around the world vary in ownership and there is no obligation for land to be under any single landowner, they range from those entirely established by the local community, through those set up by universities to those established by central Government.

- \* In St Helena land ownership is divided into crown, freehold and private. A portion of High Peak is privately owned. Crown land and commonages are also represented.

#### **6. PHYSICAL FEATURES**

Biosphere Reserves under their representation of the interaction of man and the environment can be used as a tool to address various integrated environmental problems, the most renowned on St. Helena is of course the all pervading concerns of land erosion (however St Helena also has enormous value for its physical beauty and landscape).

- \* St Helena is the deeply eroded summit of a composite volcano. The island is approximately 16km long, 10km at its widest point, and is elongated in a NE/SW direction. The highest inland point on St Helena is 823m (Diana's Peak), and on the coast some of the sea cliffs can attain 570m.
- \* The physical environment of St Helena outlines the island's unique position in understanding the geological history of the South Atlantic. The island's physical history is important, because it represents the results of local conditions which can be studied in isolation from larger, regional, geomorphological processes.



## 7. CLIMATE

- \* St Helena climate is typically sub-tropical and influenced by the SE Trade Wind Belt. Temperatures and rainfall vary, ranging from 22°C and 300mm at Jamestown to 16°C and 900mm at Hutt's Gate. Sea temperatures at St Helena average 23°C with only small annual variation.

## 8. VEGETATION

- \* There are at least 10 endemic plant genera and 40 endemic species of flowering plant on the island.
- \* Over 60% of the island is now covered by eroded areas of rock or introduced plant species. Semi-natural forest covers less than 10% of the country in isolated remnants of the central mountain ridge. These remnants are of immense botanical and biogeographical importance consisting of St. Helena's plant endemics in their natural associations.
- \* The lower plants, although impoverished and little studied, also include endemic species, particularly so in the case of lichens. More work is required before it will be possible to ascertain the true number of endemics.
- \* The fern flora of St. Helena, with 14 endemics, is a notably diverse one. There are no endemic genera, but some of the species are remarkable. The tree fern, *Dicksonia*, is the main constituent of the endemic rich tree fern thicket of the Central Ridge.
- \* St. Helena is famous for its 'bizarre' plants notably Cabbage trees which have been commented on by naturalists since before Darwin. The figure of 10 endemic genera for such a small island is remarkably high.

## 9. FAUNA

St. Helena's indigenous terrestrial fauna is dominated by birds and invertebrates. Both groups gave rise to unique and diverse forms due to the island's remote situation and lack of competition from other animal groups. There are a great many introduced animal species.

- \* The fossil record of St. Helena is of high importance, especially in the case of birds and land snails, which were studied by Darwin.
- \* Over 200 endemic invertebrate have been recorded, and approximately 70% of these species are insects (including the world's largest earwig). All three species of simuliid blackfly known in St. Helena are endemic and are of significant scientific interest.
- \* The island is the only possible breeding place for seabirds in the eastern South Atlantic between Ascension and the Tristan-Gough group.
- \* The most notable endemic bird species is the St. Helena Wirebird *Charadrius sanctaehelena*. An endemic gadfly petrel *Pterodroma rupinarum* related to a little-known Indo-Pacific group is of particular interest, and may possibly still survive in the sea cliffs or offshore islets.

- \* The Marine fauna of St. Helena has been subject to considerable study, with particular attention to fish, molluscs, echinoderms and crustaceans. Of the island's 80 known shore fishes 10 species are endemic to St. Helena. A further 16 are found only at St. Helena and Ascension Island.
- \* St. Helena's coastal waters support a notable Cetacean fauna. Large numbers of Pantropical spotted dolphins constitute one of the finest dolphin runs in the world.

## 10 HISTORICAL AND CULTURAL HERITAGE

Central to the Biosphere Reserve concept is the cultural and historical aspect, for which St Helena is world renowned.

- \* St. Helena was discovered in 1502 and was administered by the English East India Company from 1659 until it was ceded to the British Crown in 1834.
- \* During the East India Company time the island had a vital role in trade with the East. Maritime connections are the basis for St. Helena's international historical importance. Important wrecks of Dutch East Indiamen are situated in the area of James Bay.
- \* St Helena featured prominently in the suppression of the West African slave trade and also provided a major port of call for whaling fleets. The island was also used as a secure prison for Napoleon, Zulu chiefs, Boer prisoners and Bahreini emirs.
- \* St Helena's scientific history is extremely rich and varied. Notable naturalists to work on the island include Banks, Bligh, Burchell, Darwin and Hooker.
- \* The architecture of St Helena is rich in East India Company civil and military buildings, 18th century country houses and Victorian fortifications as well as industrial remains of the islands flax industry.
- \* The island has extensive archive collections which urgently require attention reflecting their priceless importance.
- \* Age-old fishing skills and country crafts still survive on the island. Traditional handicrafts include woven baskets, banana-leaf hats and candle-lantern making. Dialects resulting from St Helena's cosmopolitan past have been noted but poorly studied.

## 11. LOCAL HUMAN POPULATION

Since the first colonisation of the island in the 1600s the local community has evolved into a unique and harmonious multi-cultural society, a population dependent upon its island biosphere now for almost five centuries. Man has greatly affected this largely man-made environment basing his economy to a dependence on the UK and rural industries such as agriculture, livestock rearing and fishing.

- \* The estimated size of the population of the island was 5,443 in 1990. The main population of St. Helena is centred in Jamestown.
- \* Agricultural land is concentrated in the central part of the island between the Forest Reserve of the Peaks and the Crown Wastes. Until 1966, the manufacture of flax and allied products were the mainstay of the economy.

- \* In 1989-1990 total imports amounted to £4.97 million and exports £0.13 million (mainly from fish and coffee etc). Agriculture, livestock rearing and fishing are now the chief economic activities. The island is principally maintained by public revenue from the UK.
- \* There is a groundswell of active interest in heritage issues on the island. The Prince Andrew (High) School has a curriculum reflects local needs and aspirations, and constitutes a major educational/research facility for all ages and for the whole community.

## **12. VISITORS AND VISITOR FACILITIES**

Biosphere Reserves around the world have often acted as magnets to attract sustainable forms of tourism, even in isolated island communities such as the Galapagos. The same situation could apply to St Helena.

- \* Currently tourism for St Helena is reportedly restricted due to the isolation of the island.
- \* In addition to visitors from RMS St Helena, occasional cruise ships and significant number of yachts bring several hundred extra visitors to the island annually.
- \* The Heritage Society was founded in 1980 and its Museum attracted 500 visitors in 1987. There are town tours and well-supported exhibitions. The potential for increased tourism is currently being investigated by various bodies.
- \* Quality tourism may well have significant potential for St Helena, embracing the island's rich history and culture, its countryside by hiking or walking, sales of handicrafts and wildlife safaris such as to see the dolphin runs and endemic plants which are ideal opportunities to establish a very attractive tourist market.

## **13 SCIENTIFIC RESEARCH AND FACILITIES**

An important aspect of any Biosphere Reserve involves ongoing research to learn how natural and cultural systems work, to improve management of the resource, to share knowledge and cooperate in solving resource problems. St Helena is almost unique, certainly for a small isolated island community, in its chronology of continuous scientific events of global importance ever since the 17th century to the present day.

- \* It is obvious from the roll of renowned scientists and explorers who have called at St. Helena that the island must have played an important part in the global history of ideas.
- \* Halley visited the island to track the transept of Venus. After his visit to the island Darwin developed his theory of natural selection in *Origin of Species*.
- \* St. Helena itself has the first recorded example of plant species conservation to prevent biological extinction. In the 18th century various schemes were set in motion by the Island Council to protect timber supplies from grazing destruction.
- \* The early realisation for conservation measures resulted in St. Helena endemics contributing to the transformation that led from exploitation of the environment to its protection. Similarly, such ideas as management of biological natural resources and conservation legislation were in many instances pioneered on St Helena.

- \* Current and recent research has involved study of St Helena's endemic flora leading to comprehensive conservation initiatives for such plants as the St Helena Ebony.
- \* Other research and conservation work has included palaeontological reconnaissance of the island, large-scale invertebrate species inventories, geomorphological surveys and mapmaking projects, major field observations of the St. Helena Wirebird and invertebrate conservation field work for endemic invertebrates.
- \* The ODA has been involved in numerous environmental research programmes on land and sea around St. Helena, its current activities are centring on Environmental Planning to address concerns such as the devastating erosion problems of the island.
- \* An Endemic Plants Propagation Programme to protect a number of the threatened flowering plant species of St. Helena has been established on the island, is coordinated by the Agriculture and Forestry Officer and the Royal Botanic Gardens Kew. Large scale replanting has taken place and many of the plants which were literally on the verge of extinction have been rescued.
- \* In 1988 the first ever international symposium on St Helena was convened to evaluate the island's immense geological, botanical, zoological, historical and cultural wealth, resulting in the first interdisciplinary overview of these diverse fields relating to St. Helena.

#### **14. CONSERVATION MANAGEMENT**

The National Development Plan (1989-94) of the Government of St Helena aims to include cultural and natural elements based on sustainable improvement in living standards and quality of life and better use of national resources, key elements of Biosphere Reserves. This was followed by the legislative council ratifying the *St Helena Environmental Conservation Policy* (1991) to develop a sustainable island biosphere in which human influences play a symbiotic role. The Biosphere Reserve mechanism is highly appropriate for ensuring the integration of development and a sustainable environment on St Helena.

The key Objectives of the Conservation Strategy include:

- \* *To stabilise the deteriorating environment by providing for rehabilitation of natural ecosystems and minimising detrimental land use or management practices.*
- \* *Establish a comprehensive conservation zoning with detailed criteria for selection and management.*
- \* *Develop a monitoring system which provides first order indicators of environmental change.*
- \* *increase biological diversity through improved habitat management and application of conservation techniques.*
- \* *Limit mans' impact on the island's biosphere, particularly where it encroaches on important ecosystems and habitats.*
- \* *to minimise environmental pollution by developing attitude to its control.*
- \* *Foster and encourage wider understanding of the natural environment and the issues which are associated with it through improved public education, public access and interpretation facilities.*

- **Administrative structure and management**

- \* In St Helena conservation matters come under the administration of the Agricultural and Natural Resources Committee of the Legislative Council, which oversees agricultural, forestry and fisheries activities.
- \* In 1991 a new position was created, that of Conservation Officer who has responsibility under the Director of Agriculture and Natural Resources. Activities are to include: the coordination and implementation of the environmental Conservation Policy
- \* Other bodies involved in St Helena include the Agricultural Development Authority, the Fisheries Corporation, the Department of Public Works and Department of Education.
- \* The St. Helena Heritage Society is the main voluntary organisation on the island, and is taking an increasing interest in natural history.
- \* Conservation awareness is increasing in schools on the island. Practical conservation work has included planting of endemic trees by Boy Scouts.
- \* Non-Government Organisations based in the UK have taken a strong interest in conserving St. Helena's unique wildlife, the Fauna and Flora Preservation Society and WWF-UK have been active in promoting and instigating plant conservation on St. Helena, together with the Royal Botanic Gardens at Kew and the British Section of ICBP. The Zoological Society of London is involved in invertebrate conservation efforts. The St. Helena Working Group, with the support of the NGO Forum for Nature Conservation in the UK Territories, was set up in 1991 to provide assistance to the island of St. Helena in its objectives of "developing a sustainable island biosphere in which human influences play a symbiotic role".

**Management objectives**

- \* At present, conservation policy has been drafted by the Director of Agriculture and Natural Resources (January, 1991). The objectives of this include: the criteria for selection and management as well as improved habitat management and application of conservation techniques to increase biological diversity.
- \* At present 10% of St. Helena is protected as forest. This is zoned into total productive forest for timber and fuel and conservation forest area which includes areas of well established natural woodland and of 'productive' woodland. They are maintained and established to prevent erosion and soil degradation on the very steep slopes existing on the island.
- \* Four National Forest sites are managed as nature reserves and fenced off from adjacent pasture grazing and have had small scale conservation programmes in place since 1977.
- \* The combined programme of *in situ* and *ex situ* conservation of the endemic plants of St. Helena is incorporated into a five-year Forestry Project of the Agriculture and Forestry Department. The project consists of four mutually supporting components:
  - \* management of existing endemic forest
  - \* re-establishment of discrete areas of endemic forest
  - \* endemic nursery development
  - \* arboretum development

**- activities (e.g. controlled burning and archaeological restoration)**

- \* Some flowering plant species have been saved by the St. Helena Endemic Plants Propagation Programme, coordinated by the Agriculture and Forestry Officer and the Royal Botanic Garden, Kew.
- \* Four main sites are under effective conservation management regimes, with attempts to maintain integrity and maintenance of long-term viability. Currently at one site management involves periodically cutting flax, and other exotics, and the propagation and re-introduction of the cabbage tree.
- \* The Agriculture and Forestry Department has undertaken large scale replantings, particularly in the barren areas.
- \* Since 1858, with the creation of La Domaine francaise de Ste. Helene the French have been meticulously restoring places of Napoleonic interest and publicising the Napoleonic legend.
- \* South Africans are concerned at the maintenance of the Boer prisoner-of-war cemetery at Knollcombes. Other South African activities include surveying the wrecks of one Dutch (1625) and two Portuguese (1604 & 1623) East Indiamen of prime archaeological significance.
- \* The St. Helena Government is attempting to save High Knoll Fort, dominating the island's northern skyline, an unstudied masterpiece of late Victorian military engineering.

**- Any system of zonation, including function and size of zones**

To carry out the complementary activities of resource conservation and development of sustainable resource uses, Biosphere Reserves consists of interrelated zoned areas.

- Currently St Helena has elements of the classic Biosphere Reserve zonation, being divided into forest zones, slope erosion restoration areas, fishing zones, recreational areas, grazing areas, populated areas and two discrete conservation units, surrounded by managed forest land which acts as a buffer zone.

**- Significant training, interpretative and extension programmes**

Training is an important element of Biosphere Reserves, aiding local communities to understand better their environment and potential benefits of resource protection as well as improved land management skill, and for the resource manager training aids them to use limited human and financial resources to maximum benefit.

- \* Notable initiatives in St. Helena such as the Endemic Plants Propagation Programme and associated training, e.g., foresters of the Agriculture and Forestry Department have undertaken four month training programmes with the Royal Botanic Gardens at Kew. The new post of Conservation Officer involved study and training visits to the Zoological Society of London, World Conservation Monitoring Centre and the Royal Botanic Gardens.
- \* Increased awareness by the studies of the endemic plants propagation programme and enhanced by the islanders' school children has meant that conservation and endemic plant field studies are now part of the curriculum. Publication of further educational material is envisaged.

- **Recommendations for future conservation and management of the territory**

The 'St. Helena: Natural Treasury' meeting at the Zoological Society of London in 1988 made a number of recommendations after reviewing the material presented, it was clear that the marine environment, geology, landscape, plants and animals, as well as the culture and history of St. Helena, all present aspects of importance and uniqueness when considered both locally and globally. Recommendations made included:

- \* A full survey of the lower plants (algae, mosses, lichens and fungi).
- \* A survey of the present status of the endemic invertebrates.
- \* A detailed study of the wirebird, and the present status of the seabirds.
- \* A study of erosion and its biological and agricultural consequences.

Essential Action identified included:

- \* Planting and fencing of scrubwood and other endemic plants on the Crown Wastes to restore natural cover and check erosion.
- \* Control of introduced animals on the Crown Wastes, particularly grazing animals (which destroy endemic plant cover) and mice (which predate endemic invertebrates).
- \* Environmental protection of Horse Point Plain, important for its endemic invertebrates.
- \* Provision by Government for education, training and the publication of educational material, to promote conservation and to encourage co-operation between all interested persons, from research scientists abroad to school children in St. Helena.
- \* Appointment of a biologist with natural history interests to go to St. Helena, possibly under the VSO scheme, to initiate a programme of conservation education, in association with the High School.

## **15. MANAGEMENT CONSTRAINTS**

An important element of the Biosphere Reserve is to cooperate in solving natural resource problems, which sums up the key purpose of Biosphere Reserves and of the MAB programme itself.

- \* St. Helena has been described as 'the most devastated of all the tropical islands in the South Atlantic'. Since the introduction of goats in 1513, the natural forest has become reduced to its present remnants, which themselves are being invaded by exotics.
- \* Major problems are erosion, caused by vegetation clearance for fuel, timber and agriculture, as well as a result of overgrazing, leading to changes in climate (loss of forest cover leading to reduced precipitation and a decrease in mist interception).
- \* The reported greatest single biological threat is from the spread of exotic species of plant, primarily the encroachment of acacia and eucalyptus.
- \* Since 1875 authors have noted the declining populations and extinctions of endemic species. Many species and habitats unique to the island have vanished and many others are under threat of extinction in particular: St. Helena olive, St. Helena giant earwig, the St. Helena dragonfly and the St. Helena ground beetle.
- \* Age-old fishing skills, rural crafts, and dialects, are under threat.
- \* It is widely regarded that too little has been done in the past to maintain the architectural treasures, crumbling fortifications, barrack quarters, archives or to renovate decaying town buildings.

## **16. STAFF**

In 1990 the classification of waged workers on St Helena was divided into 318 professional and technical staff, 451 management, administration and clerical staff, 212 sales workers, 32 agriculture, forestry and fishing, 188 crafts and production workers, and 1,639 others.

- \* The Forestry Section of the Agriculture and Forestry Department have on average 10 forest guards who each patrol and carry out routine silvicultural activities in their respective districts. The recently trained supervisor has a staff of 10 specifically allocated to the maintenance and re-establishment of endemic flora.

## **17. BUDGET**

- \* Revenue in 1989-1990 was £4.17 million, approved budgetary aid £3.95 million and recurrent expenditure is £8.34 million

## **REFERENCES**

A full list of of references are listed in the technical report.





