

Topic 4: Implementing management plans

One of the most popular sessions (after widespread initial doubts!) at the Calpe 2000 conference was the one on site management planning, involving field exercises. More was called for then, and in the consultation exercise on the agenda for the present conference. We again ran a set of field exercises which are reported at the end of this topic.

Preceding this, we tried to assemble a set of reports on experience of planned management in a range of different situations. The National Trust (for England, Wales and Northern Island) started off with the built environment, but with many other aspects too of heritage and public inclusion.

A planned presentation on South Georgia to represent uninhabited situations was unfortunately withdrawn. However, the contribution from Tristan da Cunha ably covered both uninhabited islands and small remote communities.

Plans focusing on single species, but thereby having wider benefits, were represented by the Cayman Blue Iguana and the Ouvea parakeet in New Caledonia. Ascension addressed restoration through dealing with invasive species, a project with remarkably rapid initial success, after many years of attempts by the Forum and others to secure funding to start this work. The subject of dealing with invasives is returned to in Topic 6.

All of these plans involve at least some degree of local involvement, and this is a central feature of the presentation from the Turks and Caicos Islands, on a conservation plan of a Ramsar Wetland of International Importance and its surroundings, involving also sustainable development with the local community. An inter-country approach is outlined by the project on marine turtles in Caribbean UKOTs.

That all this is not a new invention is underlined by the presentation from Jersey on management of the ormer, a treasured shellfish, for decades if not centuries.

Leading into the practical exercise and feedback from each site investigated are updates of some relevant current issues under the Ramsar Convention on Wetlands and a general context and introduction to the field exercise.



Chaired by: Andrew Dobson, Bermuda Audubon Society (left); and Joseph Smith-Abbott, British Virgin Islands National Parks Trust (right)

Conserving and managing the built environment - the meaning and value of heritage

Catherine Leonard, The National Trust for England, Wales and Northern Ireland



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The historic environment comprises not only buildings and landscapes and other tangible survivals of our past, but also the history of all the communities who have made their home there. Our physical and cultural heritage is central to how we see ourselves and to our identity as individuals, communities and nations. It reinforces our sense of local and regional distinctiveness. It helps to enhance the quality of our lives, to improve our sense of well being and is a catalyst for social and economic change.

While we in the heritage and environmental sectors understand the significance of the historic environment, its importance is not widely appreciated. This presentation seeks to stimulate discussions about the meaning and value of heritage and to provide an opportunity for sharing experience in protecting and managing the built environment.

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The three central aims of the National Trust today are:

- to show leadership in the regeneration of the countryside;



Bob Scrambler is one of our 2,000 tenant farmers, who we work with to promote sustainable land management, local foods, training and skills and learning about farm food. He farms in Cornwall and specialises in rare breed sheep. And his wife runs a washable nappy business from one of the farm buildings.

- to promote the meaning and value of heritage to the nation

This family (top of next column) are visiting Corfe Castle in Dorset.



- to make education and lifelong learning central to everything that we do.



Here young people are developing heritage craft skills.

This paper focuses on the second of these – the meaning and value of heritage - but it will, I am sure, come as no surprise to you that all three themes are interrelated.

Kedleston Hall



For the reason we are all here today, in such wonderful surroundings, is because heritage - built, natural and cultural - is important and **what we do matters**. You, as stewards of some of the most beautiful places in the world, some built, some natural, and me because

the Trust owns and opens to the public a great many of the same.

After a year in which our Trust recorded record visitor and member numbers, I hope it is fair to say that - in the UK at least, and I hope in your countries too - public interest in our history and heritage is burgeoning. Numbers of visitors to heritage sites, museums and art galleries are rising; interest in family and local history is particularly strong; and history programmes on television and radio are becoming increasingly popular.



A volunteer gardener chatting to a visitor at Chartwell, Kent, South East Region

And while the debate continues about the intellectual quality of TV pop-history there is no denying its appeal – the programmes bring the past to life, they satisfy our thirst for historical accuracy, and they entertain. The ways we acquire our sense of the past and of place may have changed, but the

significance of our historic environment persists.



Hugh Edgar, a National Trust volunteer who appeared as the butler in a TV series 'The Edwardian House'.

Whether we learn about history from a television programme, a monument, a novel or biography, from a family photo album, a personal diary, our own observations and memories or from books, our sense of place and heritage values are acutely personal. Indeed, I am sure this is behind the growing interest in local distinctiveness and local history.

People no longer simply want to come and stare in awe at historic buildings - they seek a more personal interaction.



Family at Polesden Lacey, Surrey

A Mori poll commissioned by English Heritage, our statutory agency for the built environment, in 2000 captured some of these attitudes and found that 96% of adults think that the heritage is important to educate us about the past. And 76% agree that their lives are richer for having the opportunity to visit and see examples of our heritage.

The Trust's recent campaign to save from sale and inevitable dispersal a magnificent Victorian estate near Bristol in the West of England highlighted a number of these points.



This beautiful place, called Tynesfield, came on the market after its owner, Lord Wraxall, died leaving his estate to be split between as many as 19 heirs. The fact that we were able to save Tynesfield intact is thanks to the huge generosity of our supporters who, over just 100 days, enabled us to raise the money required to buy it and to establish the seeds of its endowment.



But perhaps what was most staggering was the quantity of single donations. Although we were helped on our way by two very large gifts, and a huge contribution from the Heritage Lottery Fund, 50,000 people made small (on average around £40) contributions to the appeal fund, which demonstrated a huge – and to a degree, it has to be said, unexpected – public enthusiasm for the historic environment.

And, less than a year after acquisition, I am delighted that we opened to visitors yesterday (24 March 2003).

Perhaps one of the unique things about this project is the way we are going to involve the public in the future repair and restoration of Tynesfield. The house and estate are very much as Lord Wraxall left them - full of the everyday detritus of family life. And we haven't cleared it up or brought in an army of expert conservators or hurriedly inter-

preted its historical context.

We intend to use Tynesfield as a training ground for rare conservation skills and hope to involve local communities with our interpretation work by listening to their stories about the house, the family and estate.

Our challenge at Tynesfield (and indeed for our properties as a whole) is to build on people's interest in the heritage, to engage them more closely in the decisions we take about management and interpretation, to provide tangible public benefit and to generate wider investment in the heritage economy.

These are the issues I am going to address this morning and they will, I hope, lead to a discussion about the meaning and value of heritage to today's society.



Nursery at Tynesfield



NT visitors buying a plant off a stall at a National Trust Spring Fair at Petworth House in Sussex.

For it is true to say that the huge public interest in the heritage has sadly met with widespread political indifference. The historic environment failed to achieve a single reference in the UK's 2002 Spending Review and I'm sure I do not need to tell you how little public money is available for the heritage. And, linked to this, there is a widespread misunderstanding of what we actually mean by heritage – it is often viewed as 'things' rather than for what it really is: a universal value.

At the Trust we do not have all the answers – we also struggle with the concept of 'heritage' and are trying hard to understand the significance of our historic environment. And we are doing this by trying to pose as many questions as we are answering - by developing local partnerships and networks, by cataloguing oral histories, by rethinking the history we portray and by trying to quantify the social and economic benefits of a good quality environment.



Schoolchildren, with arms raised to respond to a question, on an educational visit to Coleshill Farm, Oxon

As far as economic benefits go, I think we would all agree that conservation organisations make a vital contribution to tourism. And in the UK, the recent (and different) impacts of foot-and-mouth



Tourists arriving at the Farne Islands in Northumberland

disease and September 11th have demonstrated the importance of the domestic tourism industry to the UK economy.

Our organisations also create jobs and in research commissioned by the National Trust in several parts of the UK, we have calculated that for each job the Trust creates, between 5 and 9 are created in the local economy, which is a powerful multiplier effect.



The exterior of the General Store, Bay Town, Robin Hood's Bay

I am now going to show you some examples of how we are seeking new and innovative ways of interpreting our built properties and also to show something of the Trust's work as a mini development agency - raising money in more prosperous parts of the country and investing it, often in remote, rural areas, giving a vital boost to their economies as well as delivering major heritage and environmental benefits.



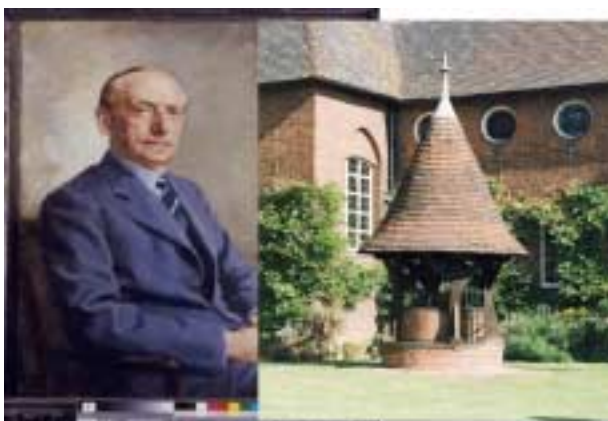
Carpenter and assistant measuring a length of replacement timber in the roof of cattle sheds at Llanerchaeron Farm. The wood will be cut with an adze beforehand and pegged with wooden pegs. The charming C18th Estate Office at Llanerchaeron, set in a field of bluebells. The rough stonework of the cottage is painted pink and white and the windows and doorframe are arched.

At Llanerchaeron in a remote part of mid Wales, we are bringing life back to the estate of a late 18th

century Welsh family. The estate had its own farm and granary as well as large double walled gardens, which have remained largely unaltered (though sadly neglected) since its heyday. Llanerchaeron is currently undergoing an extraordinarily sensitive restoration, returning many of the buildings to their original usage and appearance, using local skills and craftsmen to do the work. The project also involves landscape and nature conservation to encourage greater diversity of wildlife habitats and species such as the red kite, otter, and brown hare.



And from remote rural Wales, to the London suburbs, where the Trust has just this year acquired the home of artist/designer, William Morris, in Bexleyheath, South East London. William Morris shared with the founders of the National Trust a belief in the power of beauty to enhance the quality of our lives and this principle is as relevant today as it was 150 years ago. Through opening Red House and its garden as a community resource we hope to play an important part in boosting the role our heritage can play in Bexley's future.



William Morris portrait from Wightwick Manor in the West Midlands

And from the 1850s we jump forward in time to the 1950s and Mendips in Liverpool. John Lennon's childhood home, where he lived with his Aunt Mimi from the age of 5 until he left home at



23, which has been kindly donated to the Trust by Yoko Ono Lennon, and which we will open to the public on Saturday 29 March.



Paul McCartney lived a short walk away at number 20 Forthlin Road in a 1940s semi also cared for by the National Trust. And through these two Beatles properties, together with the home and collection of Liverpool society photographer, Edward Chambré Hardman, recently secured by the Trust, we are beginning to play our part in Liverpool's cultural renaissance, and are very supportive of its recent nomination for World Heritage Site status.



We are constantly thinking of new and innovative ways to interpret our properties and here (below) at Dolaucothi in Carmarthenshire, where visitors can already explore the site above and below ground, a new exhibition explains how to measure the value



of gold, how different techniques have been used to mine for gold, from the Romans to the Victorians, and how gold was used both in the past and modern times.

Alongside exhibitions, we use drama and live interpretation to tell our properties' stories or to explore issues. This year we are launching a new touring theatre workshop called *'What's the real deal?'* which tells the story of a supermarket, called Real Deal, where the supermarket manager, the owner of a local farm shop, a shopper and an eco-warrior engage the children (who are acting in role as journalists) in debate about the issues of food, farming and sustainability. This workshop was



piloted last year as part of *'Your Wake up Call'* - a youth project aimed at involving young people in the World Summit on Sustainable Development. It is touring schools this spring alongside our existing theatre programmes, *Whose land is it anyway?* and *Mud, Mulch and Marigolds*.

Last year we opened the Workhouse in Southwell, Nottinghamshire. Here the Trust aims to create a better understanding of the poor and destitute, and to explain the development of a system which was the foundation of social welfare today.

We were determined not to sanitise the experience



and visitors will not find gardens, shops or tearooms but are confronted instead with bare rooms, which they are encouraged to furnish with their imagination; and an exhibition about poverty and how we deal with it today.

And next year we will take on the running of the Back to Backs in Birmingham, where we are currently working with the Birmingham Conservation Trust to restore this complete and unique courtyard of back-to-back housing – a rare survival of British social history. At the heart of the Back to Backs are the stories of the people who lived and worked in these houses from the time they were built to the present day. They, unlike the back-to-backs of the northern mill cities, were artisan's houses, in their time proud and relatively luxurious compared to the rural poverty whence their occupants came.



We will be using the stories of real people and the memories of recent occupants to trace the decline of these homes from the birthplace of Birmingham's wealth to condemnation as slums in the 1960s.

These ideas draw on the experience of the truly inspiring Tenement Museum in the Lower East Side of New York. The museum, at 97 Orchard Street, tells the stories of the people who lived in the tenement over the years –Nathalie Gumpertz who turned her apartment into a dressmaking shop when her husband left her; Abram and Zipe Heller who immigrated from Lithuania in 1901; Abraham and Fannie Rogarshevsky, and other families. It captures the atmosphere, spirit and collective memory of the East Coast immigrants from which something like a third of the entire American population owes its origins today.



The new visitor centre at Sutton Hoo, an important archaeological site in East Anglia

All of these examples demonstrate the ever-widening concept of the meaning of 'heritage' itself. Organisations like all of ours can help to redefine the very nature of what is historically significant. We are making a small step towards this through our acquisition of semis, workhouses and industrial sites.

Attingham Park in Shropshire



However, simply broadening the definition of the heritage portfolio is still to miss the point. The historic environ-

ment is far more than what stands before us. It is an integral part of the wider environment and includes landscape, culture and nature as well as buildings.

You understand, instinctively I am sure, what I mean.

Our heritage is all around us. It may be above or below the ground. It includes cultural and intangible elements as well as physical ones; and decay and decline, as well as wonder and splendour. It is atmosphere and mood as well as bricks and mortar.



This is the Cobham Memorial in Kent which the Trust has recently acquired.



Castlerigg Stone Circle in the Lake District, a free standing megalithic circle of 38 stones with a further 10 inner stones forming an inner rectangle

And yet the significance of our heritage goes even



further – to play a role in memory, in forging identity and in contributing to our quality of life. It is people as well as place. This, I suggest, is what is behind the current surge of interest in heritage. A growing awareness of how historic landscapes and buildings enrich the lives of whole communities – and how their loss will impoverish us.



The part of the Giant's Causeway World Heritage Site (in Northern Ireland) protected by the Trust.



And this shows a listed property at the entrance to the site, which has been partly demolished by its owner to make way for a Arts Crafts and Cultural Centre, which we feel would seriously compromise the context of the World Heritage Site.

The impact in the wider countryside and around our towns and cities of sprawling or insensitive development, rising traffic levels and new infrastructure are all contributing to a loss of local character and distinctiveness, leaving often anonymous, indistinguishable towns, villages and countryside.

It is clear that heritage has the capacity to contribute that indefinable 'glue' which holds places and groups of people together. Perhaps the next challenge is to ensure that between us we also offer an accessible and meaningful interpretation of

heritage to communities that are not yet persuaded of its importance. For us in the UK these include those living in the poorest areas, from minority backgrounds, or those who simply feel excluded from notions of heritage.



The Asian Women's Project – Hardwick Hall, Chesterfield, Derbyshire

The Trust is not, of course, in a position to lecture anyone on social inclusion, and I know that many of you are ahead of us in reaching out to new audiences and we look forward to hearing about your experiences.



A project in a London property where we have been working with homeless people exploring the idea of home through photography and creative writing.

We are doing our best to approach this challenge intelligently and thoughtfully, including the involvement of local people in the development of 'Statements of Significance' which provide the bedrock of our Property Management Plans.

These statements try to capture what matters about these places – to everyone – and what we must strive to retain through sensitive management, and explain through excellent interpretation.

Like you, our commitment to providing involvement and access allows people the chance to directly and intimately experience places of historic interest and natural beauty, and often, quite



Stourhead

simply, access to an inspirational experience.

So the final thread to my talk is how we can capture and build on this sense of engaging people's emotions and enriching their lives. We hope that everyone who visits a National Trust property goes away enriched. With some – especially children – this can be a formal learning experience.



The Butler inspects the children's home-made butter at Ham House.

But over time we are finding that more and more of our visitors want the same chance; not only to enjoy but to learn, through the interpretation we provide, but also by using our properties as a source of inspiration and instruction.



A painting course at Petworth House



These youngsters are refugees and they are using the story of the Murray family of Ham House near London, who fled to exile in France during the English Civil War, as a way of reflecting on their own circumstances.

So I hope I have explained how, in addition to its importance for its own sake, heritage brings huge public benefit through education, training, community involvement and economic and social benefits to local communities.

And when heritage trusts like ours decide to invest in an area, we invest for ever – the investment we make supports sustainable development, which not only respects, but in many ways 'is' the very sense of place which people increasingly seek.

I realise that I am speaking to the converted, but hope I have excited your curiosity to learn more about some of the more unconventional approaches we are taking, which complements the activity that you are probably more familiar with.

And I hope it goes without saying that we claim no monopoly of wisdom on the management of the built heritage or how it is interpreted and we deeply value our relationships and the chance to exchange experiences and ideas with you.



Conservation challenges in small communities: conservation management in the Tristan islands

James P. Glass & Peter G. Ryan



Peter Ryan

Glass, J.P. & Ryan, P.G.. 2003. Conservation challenges in small communities: conservation management in the Tristan islands. pp 139-147 in *A Sense of Direction: a conference on conservation in UK Overseas Territories and other small island communities* (ed. M. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Tristan da Cunha is a globally important biodiversity hotspot, with large numbers of endemic taxa, including 11 birds, at least 60 invertebrates, 29 flowering plants and 17 ferns found nowhere else. Endemism among other taxa is less well known because of limited sampling, but it is not restricted to the terrestrial biota, with at least 1 fish, 40 marine invertebrates and perhaps as many as 50 seaweeds endemic to the islands. With the exception of the main island of Tristan, the impacts of humans and introduced organisms have been relatively limited. The uninhabited islands, especially Inaccessible and Nightingale, are among the least disturbed temperate islands. This importance has been recognised by the people of Tristan who have declared Inaccessible and Gough Islands nature reserves, and placed significant restrictions on activities at Nightingale Island. Currently more than 44% of the land area of Tristan is formally protected. Management plans have been produced for both island reserves, and are being implemented to the extent that available funding permits.

Unfortunately, it is not all good news. Despite this significant commitment to conservation, many of the endemic taxa are threatened. Among birds, the best known group, 11 are listed as Threatened and a further 3 Near Threatened, including 10 of the 11 endemic species. The picture for invertebrates is equally bleak, at least at Gough and Tristan. The major threats to biodiversity are introduced organisms, uncontrolled fishing activity and climate change. Species already introduced to the islands pose a significant threat to a wide range of biodiversity. Where feasible, introduced species have been identified for eradication programmes, but for many species we lack the capacity to eradicate or even control their populations. In addition, the ever present spectre of new introductions has to be guarded against vigilantly. Evidence from Gough Island suggests that control measures have been unable to halt the arrival of new species at the island. Unregulated fishing poses a significant threat to several seabirds breeding on the islands, including three endemic species. In the longer term, climatic warming also poses a significant threat, in part through facilitating the invasiveness of introduced species.

Tristan has limited capacity to address these threats to its globally important biodiversity. With a community of only some 300 people, there are insufficient personnel and infrastructure to address the island's conservation needs. The shortfall of skilled personnel is partly addressed through an informal body of conservation 'advisors' that provide advice to Tristan's Natural Resources Department. However, there is a pressing need for greater skills and awareness development among the island community. The long-term conservation of the islands' wealth of biodiversity depends on sustainable, well-managed fisheries throughout Tristan's Exclusive Economic Zone (EEZ). Well regulated fisheries have limited impacts on natural resources (including seabirds) and also ensure financial security for the island community, reducing pressure on natural systems through harvesting and agriculture. Although problematic, policing fishing activities within Tristan's EEZ is an immediate conservation priority.

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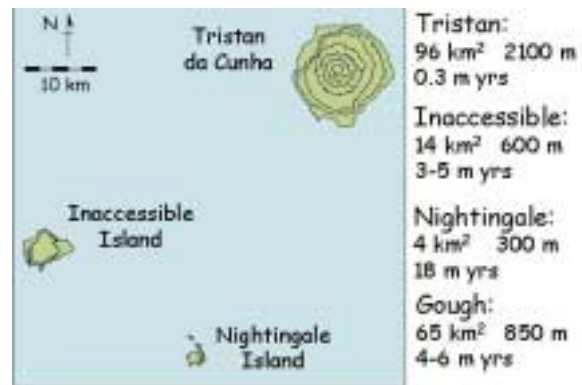
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Introduction



Tristan da Cunha lies in the mid-South Atlantic, roughly mid-way between Cape Town and South America. It comprises three main islands: Tristan (96 km²), Inaccessible (14 km²) and Nightingale (4 km²), with the much smaller Stoltenhoff and Middle (or Alex) Islands lying off Nightingale. Gough Island (65 km²) lies some 350 km SSE of the Tristan archipelago, but is administered from Tristan. The islands are all volcanic in origin, ranging from 18 to 0.2 million years old, and from some 300 m to more than 2000 m in elevation. Because they have never been connected to a continental land-mass, the terrestrial biota is disharmonic, lacking many organisms that have been unable to disperse across the almost 2500 km from the nearest landmass. Like many oceanic islands, the biota contains many endemic forms, including several adaptive radiations that have resulted from rapid evolutionary events.

The settlement of Edinburgh on the main island of Tristan is home to some 300 islanders, and is famous as the most isolated community in the world. Tristan has been inhabited since the early 1800s, apart from a brief period in the early 1960s, when the community was evacuated to the United Kingdom following a volcanic eruption adjacent to the settlement. The other islands are uninhabited, apart from a South African weather station on



remote Gough Island, which has a team of six personnel on one-year contract appointments. Tristan is a United Kingdom Overseas Territory. Although it has its own Island Council and an Administrator appointed from the UK, some aspects are treated by UK Government as forming part of the St Helena Overseas Territory. This rather convoluted, dual administrative structure leads to some unhappiness, because it is perceived as an impediment to accessing funding for conservation and other initiatives directly from the UK. For example, Tristan is dependent on inclusion in St Helena's single application to the European Union for funding.

A biodiversity hotspot

The Tristan islands are the only temperate oceanic islands in the South Atlantic. They support a large number of endemic species, including 11 birds, at least 60 invertebrates, 29 flowering plants and 17 ferns found nowhere else. Endemism among other taxa is less well known because of limited sampling, but it is not restricted to the terrestrial biota, with at least 1 fish, 40 marine invertebrates and perhaps as many as 50 seaweeds endemic to the islands. Among the flagship endemic species are the Inaccessible Rail *Atlantisia rogersi*, which is the smallest flightless bird in the world, five other endemic landbirds, and five seabirds that are confined as breeding species to the islands. Many other seabird species have globally important breeding populations at the islands, with Gough Island being the



single most important UK site for seabirds. There are also significant populations of Subantarctic Fur Seals *Arctocephalus tropicalis* as well as the most northerly breeding site for Southern Elephant Seals *Mirounga leonina*. Tristan is the only archipelago in the oceanic South Atlantic, and is thus the only site of an adaptive radiation among landbirds (island birds apparently require multiple islands to speciate).

Trouble in paradise



The main island of Tristan has been quite severely affected by humans and their commensals. Grazing by livestock and introduction of grasses and other plants have completely transformed the lowland areas into alien pastures. Currently alien species outnumber native flowering plants by almost 3:1. Direct exploitation and predation by introduced rats and cats have severely reduced numbers of breeding birds, causing local extinction of some



species, including the endemic bunting *Nesospiza acunhae* and moorhen *Gallinula nesiotis*. This is not to say that the main island has little value for conservation. The steep cliffs and upland areas still support significant areas of natural vegetation, and the island is the only known site for several endemic plants. The island also offers several opportunities for habitat and species restoration programmes.

By comparison, the uninhabited islands are among the best preserved temperate oceanic islands in the

world. They have few introduced animals and plants, and at least to the casual eye they appear virtually pristine. Both Inaccessible and Nightingale lack any introduced vertebrates (although both had live-stock on them



in the past), and have relatively few introduced plants (23 and 5, respectively). Fortunately, few of these alien plants are widespread, and most are restricted to disturbed sites such as the coast, stream margins and areas disturbed by birds and seals. Gough Island also has few introduced plants, of which only a couple are widespread. However, it does have introduced House Mice *Mus musculus*, which are cause for grave concern because of their likely impacts on native invertebrates and, increasingly, on seabirds. Recent work suggests that the mice, which have evolved large body size on Gough, are killing significant numbers of seabird chicks, including the threatened Tristan Albatross *Diomedea dabbenena* and Atlantic Petrel *Pterodroma incerta*, both of which are virtually confined to Gough Island.

Perhaps even more worrying are the findings of a recent Darwin Initiative-funded study of the macro-invertebrates on Gough Island.



This found that 72% of macro-invertebrate species are likely to have been introduced, and that introduced species are distributed throughout the island, completely dominating the invertebrate fauna in terms of abundance and biomass (Jones *et al.* in press). Although no native species recorded by Martin Holdgate during the Gough Expedition in 1956/57 has gone extinct, some are now extremely rare, apparently as a result of displacement by closely related introduced species. Also, there is a real concern that the introduced invertebrates could alter ecosystem functioning at Gough Island. Several groups of invertebrates, such as earthworms, slugs and millipedes, are represented solely

by aliens. Earthworms now dominate the biomass of invertebrates, and may well alter peat formation dynamics, which is essential for the entire functioning of the terrestrial ecosystem. Less is known about invertebrates on Inaccessible and Nightingale, but similar problems almost certainly occur there.

Threats to the islands' biota are not restricted to the land. All the albatrosses and most of the larger petrels that breed on the islands are killed accidentally by longline fisheries, and this is listed as the primary threat facing three of the five threatened seabird species that breed at the islands (BirdLife International 2000). Recent analysis of demographic data for two albatross species from Gough Island indicate that their populations are decreasing even faster than previously thought, and proposals have been drafted to upgrade their threat status, including the first listing of Atlantic Yellow-nosed Albatross *Thalassarche chlororhynchos*. The limited data on sanctioned demersal longline fishing within Tristan's EEZ suggests that this fishery has relatively minor impacts on breeding seabirds (Glass et al. 2000). Pelagic fisheries probably kill more birds, and control of these fisheries is more problematic (Glass et al. 2000). However, the greatest threat is posed by illegal, unregulated and unreported (IUU) fishing, because these pirate vessels make little if any attempt to limit bird bycatch.

Conservation legislation

The islands were at the forefront of the development of modern conservation thinking, thanks to the insightful *Man and nature in the Tristan da Cunha islands* (1976) written by Nigel Wace and Martin Holdgate, both members of the original Gough Island expedition. This booklet resulted in the drafting of the Tristan da Cunha Conservation Ordinance, 1976, which provided a sound framework for modern conservation legislation and action. *Inter alia*, the 1976 ordinance placed controls on the importation of plants and animals, limited the use of pesticides and herbicides and put in place broad protection measures for the native vegetation and soil. It also declared Gough Island a wildlife reserve and placed restrictions on direct exploitation of seabird and marine mammal populations.

The protection afforded the natural environment at Tristan has been extended by subsequent amend-

ments to this legislation, which have increased the extent of protected areas and further limited the range of birds that can be exploited by islanders. The most significant amendment was the Tristan da Cunha Conservation (Amendment) Ordinance, 1997 which declared Inaccessible and Gough Island to be nature reserves, and extended the boundaries of the marine reserves around these islands from 3 to 12 nautical miles. This resulted in 44% of the islands' land area being formally conserved, and afforded protection to most of the islands' endemic species.

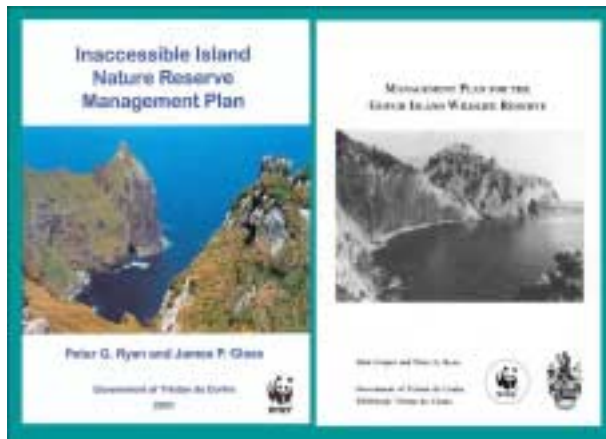
The conservation ordinance is augmented in the marine environment by the Tristan da Cunha Fishery Limits Ordinance, 1983 (and amendments in 1991, 1992 and 1997). This act provides strict controls on fishing activities within the Exclusive Economic Zone that extends 200 nm around Tristan and Gough.

Management plans and management capacity

Although sound legislation was in place, Tristan lacked the institutional capacity to translate the legislation into conservation management plans. In the early 1990s, then Administrator Bernard Pouncefort obtained funding from WWF-UK for the drafting of a management plan for the Gough Island Wildlife Reserve. It was Bernard's vision that the UK apply for World Heritage Status for Gough Island, and a management plan for the island was an important prerequisite for this application process. The management plan was duly published in 1994 using the expertise of scientists based in Cape Town but who had considerable research experience of the island (Cooper & Ryan 1994). A key aspect of the management plan was setting up the Gough Island Wildlife Reserve Advisory Committee, an informal group of special-



Limited domestic capacity



ists that could be called on to provide advice on specific management issues. Gough Island was duly inscribed as the UK's second natural World Heritage Site in 1995, and this proved so popular with the island community that it provided the impetus to have Inaccessible Island declared a nature reserve in 1997.

Two other significant developments took place in the mid-1990s. First was the formation of Tristan's Natural Resources Department. This was set up under the leadership of James Glass, primarily to manage the sustainable use of the territory's marine resources. The department is small, and struggles to meet its fishery observer obligations, but it also provides a mechanism for conservation management at the islands. Second, the island took delivery of a small fisheries patrol vessel as well as a police/customs rigid inflatable, which greatly increased the ability of the Natural Resources Department to patrol the waters around the northern islands, and land on the uninhabited islands.

Managing threats to biodiversity



Finally, in 1999, WWF-UK agreed to fund the drafting of a management plan for the newly declared Inaccessible Island Nature Reserve (Ryan & Glass 2001). This was written jointly by Peter Ryan and James Glass during a six-month visit to

Other threats



the islands in 1999/2000 by PGR, and accepted by the Island Council in early 2001. Implementation of the plan was the responsibility of Tristan's Natural Resources Department, although there remains a body of off-island expertise that can be called on for advice. Once again the management plan was a precursor towards applying for Inaccessible to be awarded World Heritage Status as part of the Gough Island site. The decision on this application is pending, following its submission in 2002.

Risk of new aliens arriving



Managing threats

The management plans interpret the Conservation Ordinance to provide practical management guidelines and protocols for each of the island reserves.

Limit risky imports



Prevent accidental introductions



Managing access



The issues included are:

- protection of the biota
- control of introduced (alien) organisms
- preventing the introduction of new alien species
- setting policy for local extinctions and *ex situ* conservation measures
- preserving historical sites
- controlling access to the islands
- zoning of the islands and defining allowable activities in each zone
- placing restrictions on use of hazardous materials
- waste management and pollution prevention (including light pollution)
- fire prevention

Detect new arrivals early,



contain them & tackle swiftly

Of these, the main issues are managing alien species and preventing the arrival of new alien species. We shall not report on specific protocols in any detail here, because they are dealt with in considerable detail in the management plans for Gough and Inaccessible Island (Cooper & Ryan 1994, Ryan & Glass 2001). The management plans also require record keeping of visits, and set guidelines for revision to management plans on a regular basis.

Have the management plans been successful?

It is too early to assess whether the Inaccessible Island plan has been effective; indeed there have been only a couple of day visits to the island since the plan was published. However, it is almost 10 years since the Gough Island Management Plan was adopted. Its success can be measured from the reports of environmental inspectors who accompany the annual re-supply visit to the weather station on Gough Island, as well as scientific surveys of the island's birds, larger plants and macro-invertebrates that have taken place in the last few years.

The management plan for Gough Island has greatly improved the logistic operations surrounding the weather station on the island. Major advances include careful screening of all materials taken to the island, inspection of all warehousing facilities and vessels prior to sailing for Gough, and banning of materials deemed to carry an unacceptably high risk of introducing alien organisms (e.g. fresh fruit and vegetables, building sand, etc.). Other issues also were addressed, such as improved waste management, appropriate controls on light pollution and limits on routes walked. The South African Department of Environment Affairs & Tourism's Antarctic Division has to be congratulated for the progress made, although in some instances it took several years before measures were adopted. For example, the ban on the re-use of storage containers previously used on Marion Island, the other South African sub-Antarctic station, only came into force after these containers were almost certainly responsible for carrying a particularly aggressive invasive plant from Marion to Gough.

Despite the improvements in logistic activities, new species are still reaching Gough Island. During the late 1990s, one alien plant *Sagina*



procumbens and several new invertebrates were introduced to the island. Fortunately the insects did not establish populations, but *Sagina* was already well established within an area of approximately 1 ha around the landing area when it was spotted by the

environmental inspector in 1998. Funds were made available for rapid action to deal with this species, which has the potential to overrun the highland areas of the island. Niek Gremmen initiated a control and eradication programme that initially had marked success, but it requires ongoing support if the programme is to be ultimately successful.

Another problem that has emerged since the management plan was implemented at Gough Island is dieback of the island trees *Phylica arborea*. This appears to be the result of a novel plant pathogen. It is unknown how or when this pathogen arrived on the island, but it highlights the problems of halting the introduction of micro-organisms to the islands. These failures of the management plan to halt introductions emphasise the need for continued vigilance. The Gough management plan is overdue for review, and it is hoped that funds for this process will be awarded in 2003. This review will take on board lessons learned during the last 10 years, as well as updating the conservation status of the island, based on recent surveys of especially breeding birds and macro-invertebrates. One alarming result to emerge from recent studies is the apparent impact introduced mice are having on populations of threatened, endemic seabirds through direct predation of chicks. This finding places even greater pressure on finding ways to tackle the island's mouse population.

Off-island problems

The management plans deal primarily with land-based activities at Gough and Inaccessible Island Nature Reserves, but the boundaries of these reserves include adjacent waters out to 12 nautical



miles, which include commercial fishing grounds for Tristan rock lobster *Jasus tristani*. Although most of the controls placed on this fishery are set by Tristan's Natural Resources Department under the Tristan da Cunha Fishery Limits Ordinance, the management plans provide guidelines for controlling solid wastes and light pollution from fishing vessels. However, the seals and most of the seabirds breeding at the islands range well outside the marine limits of the reserves, and thus are not protected during much of their lives.

A lot of ocean to police...



IUU fishing activity takes place inside Tristan's EEZ, but there is virtually no capacity to assess, let alone control, this activity. Tristan's Fishery Limits

...and limited patrol facilities





Ordinance provides for punitive fines for fishery transgressions, and there is urgent need for deep-water patrols (aerial or ship-based) to provide at least some deterrence to IUU fishing. Unfortunately to date repeated appeals to the Royal Navy to conduct patrols when vessels pass Tristan en route to and from the Falklands have failed to result in any action. In the longer term, the UK Overseas Territories and other small island states need to lobby for legislation requiring satellite-tracking vessel monitoring systems (VMS) on all vessels, so that Tristan can track vessels operating in or close to its waters. However, most seabird species that breed at the Tristan islands range well outside the 200 nautical mile EEZ, extending throughout the South Atlantic, or in the case of Great Shearwaters *Puffinus gravis*, throughout both the North and South Atlantic. The effective long-term conservation of these species depends on control of longline fishing mortality throughout international waters as well as the EEZs of nations bordering the Atlantic Ocean.



The ability of Tristan to police its waters effectively has conservation importance that extends beyond the need to limit seabird bycatch. Tristan's economy is based largely on revenues derived from fishing and fishing concessions. Recent sound management of fishery resources has resulted in significant increases in income for the island's community, which has had positive benefits for the environment. There is now less reliance on harvest-



ing seabird products from Nightingale Island, and reduced pressure for access to grazing on the offshore islands. Every effort should be made to ensure that Tristan's fishery resources are secure and continue to be managed relatively conservatively.

Priorities for action and the challenges ahead

There is a need for more conservation management capacity on Tristan, but very few people enter the workforce on the island each year, limiting the pool of available candidates. Greater emphasis on conservation as a potential career track is needed, and it is hoped that the forthcoming Darwin Initiative-funded programme based on Tristan will stimulate such interest. The production of a simple guide to the islands' fauna and flora, designed for tourists and residents alike, will also help to raise awareness of the islands' unique diversity.

Throughout we have emphasised that the greatest threats to the islands' biodiversity are posed by alien species, and the risk of new aliens arriving at the islands. The dangers of alien species already on the islands are likely to be exacerbated due to ongoing climate change. Mean air temperatures at Gough Island have increased significantly over the last three decades (Jones *et al.* in press), and experience elsewhere indicates that climate change has the potential to alter the invasiveness of naturalised species.

In a sense, the management plans for Gough and Inaccessible Island have started with the 'easy' conservation issues in the Tristan islands, because of limited overlap with the activities of the island community. There is a need for management plans for Nightingale and ultimately the main island of Tristan. These are more sensitive and complex issues, with activities such as exploitation of

seabirds and guano at Nightingale and agriculture at Tristan not included in the Gough and Inaccessible Island management plans. However, plans for the conservation of these islands will be a valuable tool for long-term planning and management of the islands, and go a long way to meeting Tristan's international obligations to conserve its biodiversity.

Acknowledgements

We thank the conference organisers for the opportunity to attend the meeting in Bermuda; it is unfortunate that James was unable to attend due to commitments on Tristan.

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Species Action Plan for the Ouvéa parakeet *Eunymphicus uvaeensis* in New Caledonia, 1997-2002

Alison Duncan, Ligue pour la Protection des Oiseaux/BirdLife Partner for France and Olivier Robinet, French Ministry of Foreign Affairs



Duncan, A. & Robinet, O. 2003. Species Action Plan for the Ouvéa parakeet *Eunymphicus uvaeensis* in New Caledonia, 1997-2002. pp 148-154 in *A Sense of Direction: a conference on conservation in UK Overseas Territories and other small island communities* (ed. M. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The Ouvéa parakeet *Eunymphicus uvaeensis* is endemic to the small raised-coral atoll of Ouvéa, east of the main island of New Caledonia, a French overseas territory in the South Pacific. This island has never suffered from European domination, and so is still run in the traditional Melanesian way, with tribes owning land, sometimes resulting in local conflict. The local people live essentially off fishing, and cut and burn cultivation; and an important supplementary income is from the selling of parakeets for the pet trade. In 1992 a NGO for the protection of the parakeet was set up by the chiefs of the island tribes together with members of the CIRAD, a French research and development institution. The study and protection of this bird were included in 1993 in the work plan of this institution. The vet of the Loyauté Islands worked on this species for his PhD, work which culminated in the writing of an action plan at the end of 1996 as the outcome of an international seminar. The first five years of the plan have been completed very successfully with the Ouvéa parakeet well established as the symbol of the island. It is now recognised as a species and classified as Endangered under the IUCN criteria, and was put on Appendix 1 of CITES in order to reduce the illegal trade.

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Olivier Robinet, French Ministry of Foreign Affairs.

Introduction

This talk is about one of only two species action plans for birds prepared in the French overseas territories (*territoires outre-mer* TOM), none has yet been prepared in an overseas *département* (DOM) of France. For biodiversity action plans the situation is similar. There is one for metropolitan France, but none in any of the DOM-TOMs.

The Species Action Plan for the Ouvéa Parakeet does not fit into an official protocol within France or the European Union. Those who initiated it should therefore be commended, and full recognition should also be given for the

considerable support that has come from local Melanesian provincial government. This Action Plan has been validated by experts in bird conservation from the South Pacific and Europe.

The table below on avian biodiversity in the French DOM-TOMs is a reminder of the impor-

Avian importance of French DOM-TOMs
(CT + *collectivité territoriale*, a third category)

	GUADELOUPE	MARTINIQUE	REUNION	FRENCH GUIANA	MAYOTTE	NEW CALEDONIA	FRENCH POLYNESIA	FRENCH SOUTHERN TERRITORIES
STATUS	DOM	DOM	DOM	DOM	CT	TOM	TOM	TOM
Biological criteria								
Endemic family	0	0	0	0	0	1	0	0
Endemic genera	0	0	0	0	0	3	0	0
Endemic species	1	1	10	0	3	25	26	3



Location of some of the French DOM-TOMs

tance of these areas for biodiversity and endemism. The Territories are particularly important.

The French DOM-TOMs are almost all islands, with the exception of French Guiana and Terre d'Adélie (the latter in the Antarctic), and essentially in the tropical or sub tropical zone. Their insularity is one of the reasons for their species richness. French Polynesia has 23 world endangered bird species, 15 of which have such small populations they could go extinct in the next few decades.

This action plan is for a species in New Caledonia, in the South Pacific, the jewel in the crown of French biodiversity with 25 endemic bird species, 40 endemic reptiles and over 2500 endemic plant species. The species occurs on Ouvéa Island, a raised atoll of 132 km² which lies 80 km NE of La Grande Terre and is one of the Loyalty Islands.

Inhabited by Melanesian people, this island was never occupied by Europeans, and suffered badly in the violent political troubles of 1988. The population density, with 27 inhabitants/km², is three times as high as the neighbouring islands. Responsibility for the environment is devolved to the territories, and within New Caledonia down to the Province level of which there are 3, the Loyalty Islands being one.

The species concerned is the Ouvéa parakeet, once considered a sub-species. Since 1999, it has been recognised as a species in its own right. It is endemic to Ouvéa, and once occurred all over the island, but is now essentially restricted to the north of the island, with a small population in the south.



Throughout the 20th century this species has been perceived to be in decline, but there had never been an accurate census until 1993. In 1947, Warner published an estimate of 1000, more recently Hahn published in 1993 an estimate as low as 70-90.

What are the reasons for the species decline?

1. Loss of forest habitat



In 1930s large areas of forest were lost due to fire. Since then there has been continual clearance of the forest for subsistence agriculture on this coral atoll where soils are thin. This activity complements the income from fishing. It is estimated that half of the remaining forest has disappeared between 1950 and 1990.

2. Illegal pet trade



These birds are easy to tame, and would seem predestined for the pet trade ! There has always been a tradition on the island to have them as pets, and today there is also a major market in Nouméa, capital of New Caledonia, and

a small number go overseas, estimated at 50 in France. The birds are worth 200 US\$/bird, which is a third of monthly salary. Legislation was passed in 1972 to forbid this trade; however the fines are small, and have little dissuasive impact.

Key Events

Human activities are commonly the cause of declines in wildlife populations. The conservation of a species is also frequently dependent on the

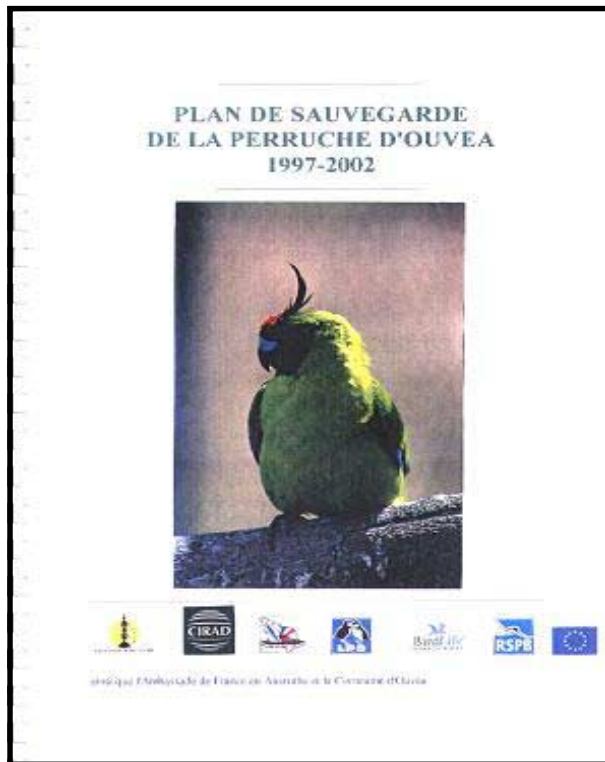
vision of one or two people; this was the case for the Ouvéa parakeet. Olivier Robinet was the vet on the Loyalty Islands in 1993, salaried by the Province. Not only did he recognised the plight of the Ouvéa parakeet, but also that the conservation of the species had to begin by convincing the influential people of the island. The Province were prepared for him and his technician to work on this species.

The creation of the Association for the Conservation of the Ouvéa Parakeet made it possible to bring on board the owners and managers of the land, i.e. the chiefs of the tribes, particularly the traditional high chief who became the chairman, without whom no conservation could be done. Local politicians who could finance the plan and scientists who could provide the methods on how to gather the necessary information about the species were also included. The scientists were part of the French agricultural development organisation (CIRAD). These scientists were interested in wildlife, even though it was not the number one priority of their work. They were able to put on their work plan the study of several world endangered species found in New Caledonia, including the Ouvéa parakeet. With their support, Olivier Robinet began his PhD on the species. Towards the end of three years work it became clear that one means of extending the work on the parakeet would be through the preparation of a species action plan.

Species action plans in France generally have this procedure. The species selected, at the request of the Ministry of Environment, are those on the French Red Data list. The choice is validated by the national committee for nature protection, and the Plan is funded by the Ministry, with a yearly evaluation by experts.

At a European level the species for which plans have been written are the globally threatened species on Annex 1 of the European Union's Wild Birds Directive. They are validated by the EU's Ornithology Committee, and actions are often funded by the European Commission's budget line LIFE.

The action plan for the Ouvéa parakeet was launched by the conviction of a small group of people who considered it was essential to start some conservation action for this endemic species. Getting Melanesians and metropolitan French to work together on such an issue after the serious political troubles in 1988 was no mean feat.



The starting point was the creation of the association for the conservation of the parakeet. Its aims turned out to be essentially the basis for the objectives for the species action plan.

After working on his PhD for 3 years, it became clear to Olivier Robinet that it was necessary to have a species action plan written by international experts, in order to give it credibility and accept-

ance by the chiefs and politicians of the Islands Province.

In 1996, a 3-day seminar was organised by Olivier and the CIRAD, bringing in international experts in bird conservation, particularly on psittacidae, from the South Pacific, Europe and New Caledonia. Various sources of funding were found.

Organisations present:

- New Zealand Department of Conservation (experience on parrots)
- Wildlife Branch Tasmanian Parks and Wildlife Service (orange-bellied parrot)
- Vogelpark Walsrode, Germany (bird park in Tonga)
- BirdLife International
- Ligue pour la Protection des Oiseaux/ BirdLife France
- Environment Service Province Sud, New Caledonia Province des Iles Loyauté
- CIRAD Wildlife Programme

Recovery Plan

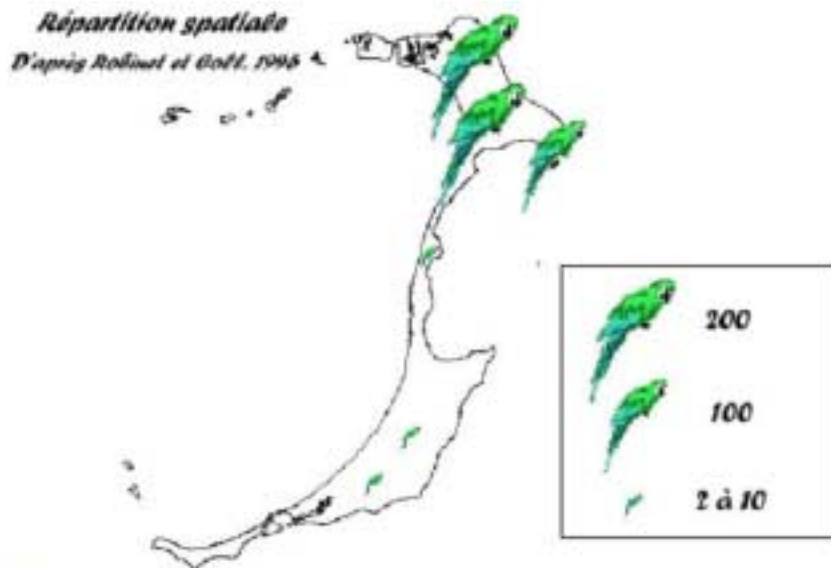
Main objectives

1. Taxonomy (We Ming Boon, Auckland University, New Zealand + Victoria University, Australia)
2. Illegal trade – CITES meeting 1999
3. Captive breeding

4. Habitat protection and enhancement
5. Translocation
6. Predator control and prevention
7. Legislation
8. Population assessment and monitoring: 1993, 1998, 2000
9. Nest site management
10. Public Awareness



Répartition spatiale
D'après Robinet et Goff, 1995



A survey of nest sites uses GPS, in order to locate nest sites to monitor breeding success.

Population Assessment and Monitoring

Objective: To determine population trends by developing a repeatable census method which incorporates local knowledge and baseline data gathered to date.

Methods will be:

- Annual monitoring during the breeding season – December.
- Fixed line transects established at 2-3 representative sites.
- Monitoring to be conducted by local people able to identify the species by sight and call, this will be co-ordinated by the project officer.

Surveys conducted:

- 1993 – estimated 500 birds (+/- 200); few individuals in the south part of the island.
- 1997 - problems of access to the main areas due to conflict with tribes, survey postponed.
- 1998 – second survey estimated 800 birds (increase due to change in observers, not a real increase in numbers), population increasing in the southern part of the island
- 2000 – population stable in north, small increase in the south.

Local people in the surveys were paid for their time.

The young birds are ringed.

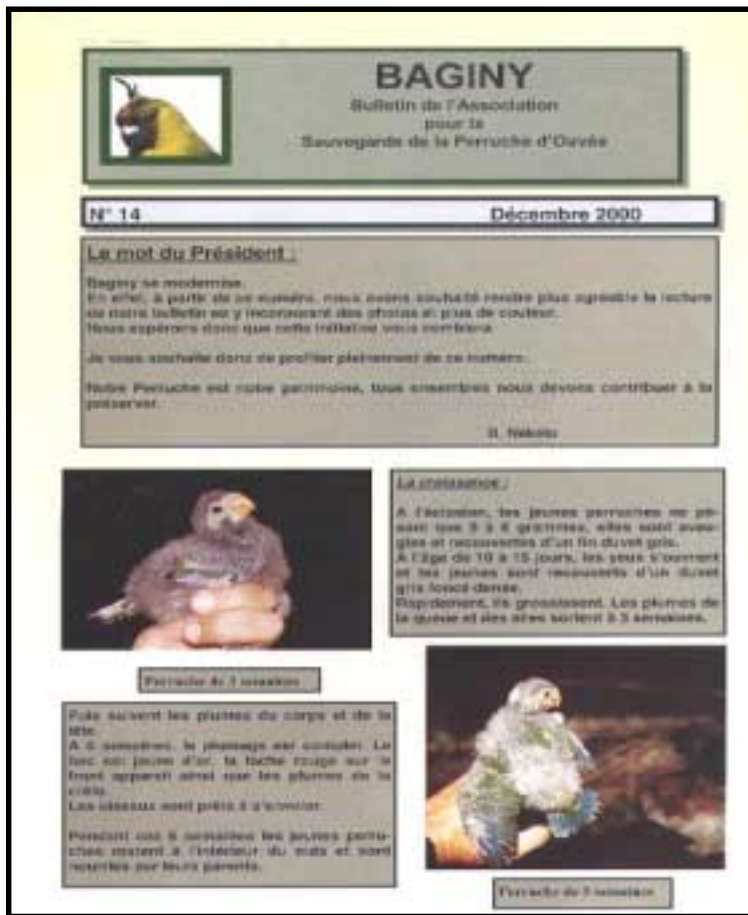
There is a spreading of introduced bees into trees being used as nest sites for parakeets. Attempts are being made to control them when they interfere with parakeet nesting holes.



Public Awareness

Major investment has been put into raising the awareness of the local people since 1994 about the plight of the parakeet, providing information about the biology of the species and efforts that could be made for the conservation of its habitats.

In 1997 the conservation society started a newsletter called *Baginy* (next page), with as wide a distribution as possible. Each year the society mans a stand at the fair on the island where T-shirts, postcards etc are sold and information



Evaluation of the species action plan

In November 2002, a meeting was planned to bring together the experts who had contributed to the preparation of the action plan, in order to evaluate the work done over the past 6 years.

There was a change over in personnel and a new vet joined; so this meeting has been postponed until autumn 2003

Here is an evaluation of *before* and *after* the action plan.

Before: Endemic genus to New Caledonia, subspecies *Eunymphicus cornutus uvaeensis*

After: Endemic species *Eunymphicus uvaeensis*. Work on the taxonomy of the species resulted in it being recognised as a species.

Before: IUCN category – subspecies

After: IUCN category – Endangered

After being defined as a species, it has

been categorised as Endangered using the IUCN criteria.

Before: CITES Appendix II

After: CITES appendix I. To stop the illegal trading in the species it was moved on to Appendix 1 of CITES.

Before: 1993 : estimated numbers c.500

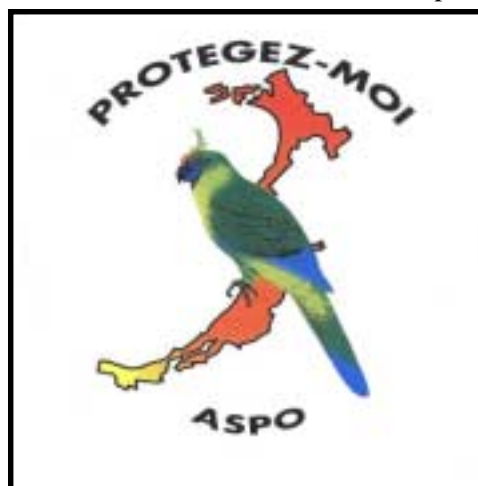
After: 1998, 2000 : estimated numbers c.600-800. The surveys have shown that the numbers have stabilised around 6-800. There has not been an increase except in the small population in the southern part of the island

provided about the species. French national TV came to prepare a programme on the parakeet, and made cassettes of the programme available for schools. It was recognised that there was a need to employ someone to devote his time to the work of awareness raising.

In 1998 a website was created www.netaces.com/aspo. An article was written in National Geographic Magazine. A second person was taken on for the awareness raising work.

In 1999, information panels on the species were prepared and first placed in the Province administrative buildings and then transferred to the airport, together with a statue of Ouvéa parakeet. A coloured brochure on the species was published.

In 2000, carstickers were prepared (right). Increasing numbers of tourists were requesting the Conservation Society for guides to show them the parakeet; these guides were receiving payment.



Before: Money through illegal trade

After: Money through conservation and tourism
The illegal trade has not completely stopped, but increasingly opportunities are arising of earning money through the conservation of the parakeet. The Province is putting an increasing amount of money into the conserva-

tion of the parakeet.

Before: Little awareness of the value of the species

After: Increased awareness of the plight of the species. Symbol of the island – airport, inflight magazine

The effort of co-operation between French, foreign conservationists and Melanesians has been a success. Most importantly credit should be given to the island authorities, *Province des Iles Loyautés*, who have been far sighted in the financing of these conservation actions.

Ascension – focus on dealing with invasive species

Tara George and Richard White, Conservation Officers, Ascension Island



George, T. & White, R. 2003. Ascension – focus on dealing with invasive species. pp 155-160 in *A Sense of Direction: a conference on conservation in UK Overseas Territories and other small island communities* (ed. M. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org



Ascension Island was discovered a little over 500 years ago, at which time it was home to millions of seabirds, ten species of endemic plant and two species of endemic land-bird. The island has been permanently settled since 1815. With the arrival of humans came many non-native species of animal and plant. The impact of some of these non-native species on native plants and animals has been dramatic, and today the two endemic species of land-bird are extinct, four species of endemic plant are extinct and seabirds number less than a quarter of a million pairs. The impact on less well known taxa, such as invertebrates, is unknown. The Ascension Island Management Plan (AIMP) was produced by the Royal Society for the Protection of Birds for the Island Administrator in 1999. One of the main aims of the management plan was the control or eradication of non-native species, such as feral cats, rats, donkeys, sheep and Mexican thorn. In 2002, with a grant from the Foreign and Commonwealth Office, two of the key recommendations of the AIMP were implemented. Firstly, two Conservation Officers were appointed to look after the wildlife interests of the island and second, a team of specialists was contracted to undertake feral cat eradication on the island.

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Introduction

Ascension Island is one of the lesser known UK Overseas Territories. It is situated in the South Atlantic Ocean Latitude 7°57' S Longitude 14° 22' W, and consists of a single island with a few tiny off-shore stacks. The nearest island is St Helena, situated some 1,300 km to the south, and the nearest large land-mass is the continent of Africa, situated some 1000 miles east. Ascension was discovered in 1501. However it remained uninhabited until 1815, when a garrison was stationed there as a result of the imprisonment



of Napoleon on St Helena that same year.



Ascension remained an island without a people, developing a role as a military and communications post in the South Atlantic. Last year saw the first attempts to change this status, with the election of an island council – an advisory body representing those who live on Ascension. These embryonic stages of democracy spearhead the initiation of private land ownership and permanent residency on the island.

Ascension is, geologically, a relatively young island, with estimates that the most recent volcanic eruption occurred a mere 1000 years ago. Because of Ascension's geological youth, it does not boast high levels of biodiversity. However its geographical isolation inevitably has led to endemism. Ascension's endemics include: 10 plant species (4 of which are now extinct); 8 inshore fish species; 26 invertebrate species; and 1 species of bird.

Non-endemic flagship species also find refuge in this isolated territory. Ascension's beaches provide the second largest nesting site for green turtles in the South Atlantic, and its terrain host large numbers of the native land crab. Its shoreline and offshore stacks similarly provide a welcome home for 11 species of seabirds.

This presentation focuses on the effect of two of Ascension's alien invasive species – *Prosopis juliflora* (Mexican Thorn) and feral cats.

Alien invasive species and their effect on the Green Turtle *Chelonia mydas*

Background

The 32 beaches that surround Ascension's coast host one of the most important breeding populations of the Green Turtle in the world. There has been a Darwin Initiative project run from University of Wales, Swansea to study these turtles over the past 4 years. This has included the implementation of a long term monitoring programme. Figures show that last year as many as 5,000 turtles laid up to 17,000 nests in total. Green turtles spend the majority of time feeding in coastal sea grass off the coast of South America and return to Ascension as adults to nest once they have attained sexual maturity (around 20-30 years).

Ascension Goby – one of Ascension's endemic fish



Green Turtle – *Chelonia mydas*



Outline of main threats – highlighting Mexican Thorn

Threats to turtles from alien invasive species	Dealing with these threats.
Mexican Thorn - <i>Prosopis juliflora</i> – invading beaches <ul style="list-style-type: none"> Alters insolation and consequently incubation temperature of sand Alters sand hydrology and oxygen availability Vegetation line will reduce the area available for nesting 	Programme to keep turtle nesting beaches free of Mexican thorn
Humans <ul style="list-style-type: none"> Artificial lights near turtle beaches may cause failure to lay Disorientation of emerging hatchlings Uncontrolled viewing and photographs can cause turtles to abort nesting attempts Sand removal from beaches lowers height of beach Uncovered pipes etc. can trap nesting turtles 	<ul style="list-style-type: none"> Most of the lighting has been changed to sodium vapour lights. Conservation Centre runs turtle tours twice a week Leaflets contain information about viewing turtles issued at airhead Sand removal still an issue being debated Pipes removed by organisations – e.g. USAF Establishment of protected areas.
Feral Cats Patrol beaches and eat hatchlings	<ul style="list-style-type: none"> Seabird Restoration Project – eradication of feral cats.

Clearing pipes from Turtle nesting beaches



Euphorbia organoides – Ascension’s only flowering endemic



Outline of main threats – highlighting Mexican Thorn

Alien invasive species and their effect on endemic plants

Before man settled Ascension, there were very few species established. At the time of discovery there were probably only about 25 indigenous species, 10 of which were endemic. Of the 25 indigenous species, only 21 are found on Ascension, and 4 of the endemic plants have become extinct. The vegetation of Ascension is now dominated by plants that have been introduced by man. Some of these plants have become invasive, and

Threats to endemic plants from alien invasive species	Dealing with these threats.
<p>Introduced plant species</p> <ul style="list-style-type: none"> •Compete with endemic plants •Eg (1) introduced Greasy grass <i>Melinis minutiflora</i> was responsible for out competing the endemic grass, <i>Sporobolus durus</i> (now feared extinct) •Increased rainfall – alters climate. •Mexican Thorn – grows in conditions similar to that of Euphorbia 	<ul style="list-style-type: none"> •Lack of information about species •Long term monitoring initiated •Study of Ascension spurge by USAF •Attempts at propagation •Creation of seed banks •Mexican thorn controlled in known locations of endemic plants.
<p>Humans</p> <ul style="list-style-type: none"> •Introduce feral animals •Introduce competitive plant species •Building roads through Euphorbia colony 	<ul style="list-style-type: none"> •Public awareness programme in place •Spurge plants being grown in nursery for sale. •USAF commissioned study pre-road. •Establishment of protected areas
<p>Feral animals</p> <p>Grazing by feral sheep, goats and donkeys.</p>	<ul style="list-style-type: none"> •Also potentially beneficial in limiting the growth of invasive species, and thus limiting competition. •Goats eradicated decades ago



the most recently introduced Mexican thorn poses the largest threat.

Alan Gray – commissioned to study Euphorbia organoides on Ascension

Alien invasive species and their effects on invertebrates

Until recently, very little was known about the native terrestrial invertebrate fauna of Ascension. In 1995, a study by Phillip and Myrtle Ashmole revealed that there are 298 species in total of which 26 are endemic and 147 introduced.

Endemic pseudoscorpion from Boatswainbird Island



Outline of main threats – highlighting Mexican Thorn

Threats to invertebrates from alien invasive species	Dealing with these threats.
<p>Introduced plant species</p> <ul style="list-style-type: none"> •Increase shading and thus ground temperatures •Increase rate of soil formation •Increase populations of non-native invertebrates <p>•Mexican Thorn – growth rate so fast it poses the largest threat of all introduced plant species.</p>	<ul style="list-style-type: none"> •Lack of information still about the invertebrates •Only species identification information exists •Small scale Mexican Thorn control in place.
<p>Humans</p> <ul style="list-style-type: none"> •Destruction or disturbance of habitat •Chemical poisoning 	<ul style="list-style-type: none"> •All new land development will have EIA. •Organisations responsible for appropriate methods of disposing of chemicals.

Lava flow from Sisters Peak – site of the most recent volcanic eruption on Ascension



Alien invasive species and their effects on important geological features

Ascension is the tip of a volcano about 60km in diameter. The oldest rocks are around 1.5 million years and the youngest around 1,000 years. It is host to a number of volcanic features including scoria cones, erosion caves, dykes, and obsidian. All of these and more make the island a geologists paradise.

Threats to geological features from alien invasive species	Dealing with these threats.
<p>Introduced plant species</p> <ul style="list-style-type: none"> •Obscure physical form of the feature •Alter the typical landscape <p>•Mexican Thorn – growth rate so fast it poses the largest threat of all introduced plant species.</p>	<ul style="list-style-type: none"> •Removal of invasive plant species from geological features designated as protected areas. •Further studies needed.
<p>Humans</p> <ul style="list-style-type: none"> •Destruction by recreation activities 	<ul style="list-style-type: none"> •Establishment of protected areas

Ascension Management Plan

All of the issues mentioned in this document are dealt with cohesively in an Ascension Management Plan which was drawn up in 1999 by the RSPB.

Due to numerous political and structural changes in the way that Ascension is run, the document is due up for review this year, however its role in formalizing and prioritizing conservation issues on Ascension is invaluable.



Seabird Restoration Project

The RSPB went on to manage a FCO funded Seabird Restoration Project which began in the latter months of 2001. The focus of the project was the eradication of cats, in an attempt to restore seabirds to the mainland.



Cats were introduced to Ascension in 1815. They quickly established a feral population and predated the vast seabird colonies found on the mainland at that time. Two landbirds, a night heron and a flightless rail, are

known only from sub-fossil remains and a sighting by a 17th century visitor. It is not known when these species became extinct, but cats most likely contributed to or caused their decline. Evidence of the impact of feral cats on seabird populations can be seen in the numerous middens of bones and feathers that litter the landscape of Ascension (photo to right).

The breeding seabirds of Ascension Island

	Ascension population	% breeding on Boatswainbird	% Atlantic population	% world population
Ascension frigatebird	3,000 pairs	100	100	100
Masked booby	4,000 pairs	99	50	Not known
Brown booby	900 pairs	40	30	<1
Red-footed booby	15 pairs	80	10	<1
Brown noddy	400 pairs	0	30	<1
Black noddy	10,000 pairs	75	50	3
Fairy tern	2,000 pairs	80	50	1
Sooty tern	200,000 pairs	0	70	<1
Red-billed tropicbird	500 pairs	95	20	5
Yellow-billed tropicbird	1,000 pairs	90	35	3
Madeira storm-petrel	1,500 pairs	100	Not known	Not known

As a result of the presence of cats, seabirds have withdrawn from nesting on mainland Ascension (with the exception of the Sooty Tern) and are limited to offshore stacks, the largest being Boatswainbird Island. The table below shows the number of birds that nest around Ascension today, and demonstrates their global significance.



In 2001, with funding from the Foreign and Commonwealth Office, a feral cat eradication programme started. The main aim of this programme is to create suitable conditions to allow seabirds to recolonise the mainland of Ascension Island. The feral cat eradication programme employed a team of seven personnel for one year. During that year:

- 350 cat traps were deployed for a total of 40,500 trap nights
- 4,000 bait stations were deployed
- Over 70,000 poison baits were placed
- An estimated total of 750 feral cats have been killed by the programme

The programme was ambitious in that it attempted to keep pet cats on the island. To do this, all domestic cats were registered, neutered and microchipped. All cats trapped were scanned for the presence



Seabird ghost colony at Sisters Peak



Boatswainbird Island



Ascension Frigatebird



Poison bait station on coast near Boatswainbird Island

of a microchip to distinguish between feral and domestic animals; and poison bait was only used beyond 1 km from settlements, where all cats were assumed to be feral.

The successes of the project came earlier than initially anticipated in that before total eradication



Sooty tern colony

of cats, seabirds were already starting to nest on the mainland. Four of a possible nine seabird species have recolonised the mainland in the first year of the project. This is the first time in over a century that these species have bred successfully on the mainland. The figures to date stand at:

- 20 brown booby territories, seven of which have fledged young
- 3 masked booby territories, two of which fledged young
- 5 yellow-billed tropicbird territories, three of which fledged young
- 1 brown noddy territory



Masked booby chick on the mainland at Coconut Bay

In addition, sooty terns had a very successful breeding season in 2002, with low adult mortality and high productivity.

It looks as if the Seabird Restoration Project will be able to be viewed as a successful eradication of an invasive species. There are still sightings of cats being recorded however; so we will wait in anticipation for the declaration of a feral cat free island, and observe with vigilance the consequences that has on seabird populations on Ascension.



Cayman Blue Iguana Management Plan

Fred Burton



Burton, F. 2003. Cayman Blue Iguana Management Plan. pp 161-166 in *A Sense of Direction: a conference on conservation in UK Overseas Territories and other small island communities* (ed. M. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

In November 2001 the IUCN Iguana Specialist Group met in Grand Cayman, and worked with the National Trust for the Cayman Islands and other local stakeholders to create a Species Recovery Plan for the critically endangered Cayman Blue Iguana.

A little over a year later, grant income to the Blue Iguana Recovery Program has increased from *ca* \$6,200 per annum to \$40,000 in 2002, and human resources applied to the programme locally have increased tenfold. Technical support from overseas has increased dramatically, and the Blue Iguana has gained a high profile among US zoos and conservation groups.

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endemic to Grand Cayman. The Blue Iguana is a stunning creature. It is a giant blue lizard, growing to 5 ft (1.5 m) long or more, with red eyes, and a colour which varies from dark grey to denim blue depending on temperature and arousal.

It is the most critically endangered of all the West Indian rock iguanas. It is a classic story of an island endemic fallen

The Cayman Islands are three very small islands, strung out along a couple of hundred kilometres of submarine ridge, on the southern edge of the N. American tectonic plate. The Brac is 200 km from Cuba and Jamaica. Grand Cayman is even more isolated at 280 km from Cuba and 300 km from Jamaica. There were no past “land bridge” connections to larger islands or the mainland.

For the last 12 years, the National Trust for the Cayman Islands has been running a conservation programme for the Grand Cayman Blue Iguana *Cyclura nubila lewisi*, a subspecies





captive breeding programme



Back then I was directing all the Trust's environmental programmes, and could spend at most 8% of my time on the Blue Iguanas. We had half a dozen programme volunteers, and we were paying 1 hour a day to a Botanic Park employee to feed the captives. It just was not enough.

What we needed was to pull in a lot more human and financial resources, and to

victim to non-native predators, land-use changes, hunting, trapping, and fast cars. There are only about a dozen individuals left from the original wild population.

Conservation actions began in 1990, led by NTCI. When we started this programme, information about the wild Blue Iguana population was almost non-existent. It took us years to get a handle on where they were, and how many were left. Meanwhile we developed captive breeding techniques, and began trial releases into protected areas. We started with a single pair returned to Cayman from the USA, and bred 6 young the very first year. By the year 2000, we had restored a small breeding population in the QE II Botanic Park, but at the same time we had worrying indications of ongoing decline in the wild population.

develop a much more ambitious strategy, which could actually make a serious difference. So, with a grant from the FCO's former Environment Fund for Overseas Territories (EFOT), we offered to host the 2001 annual meeting of the World Conservation Union's (IUCN) Iguana Specialist Group. We persuaded the participants to stay on an extra two days to help develop a formal Species Recovery Plan for the Blue Iguana.

That exercise cost US\$ 17,500 - which was a lot cheaper than it could have been because most of the participants had budgeted to attend the ISG meeting anyway, so we didn't have to pay. We should also consider that the exercise cost several days time from over 30 busy professional people, local and from overseas. These planning exercises are expensive in more ways than one.

A year and four months has passed. I now want to take a look at what return we have seen from that



Blue Iguanas mate in April and May. This is a pair of released captive: the smaller female subsequently laid 8 fertile eggs.





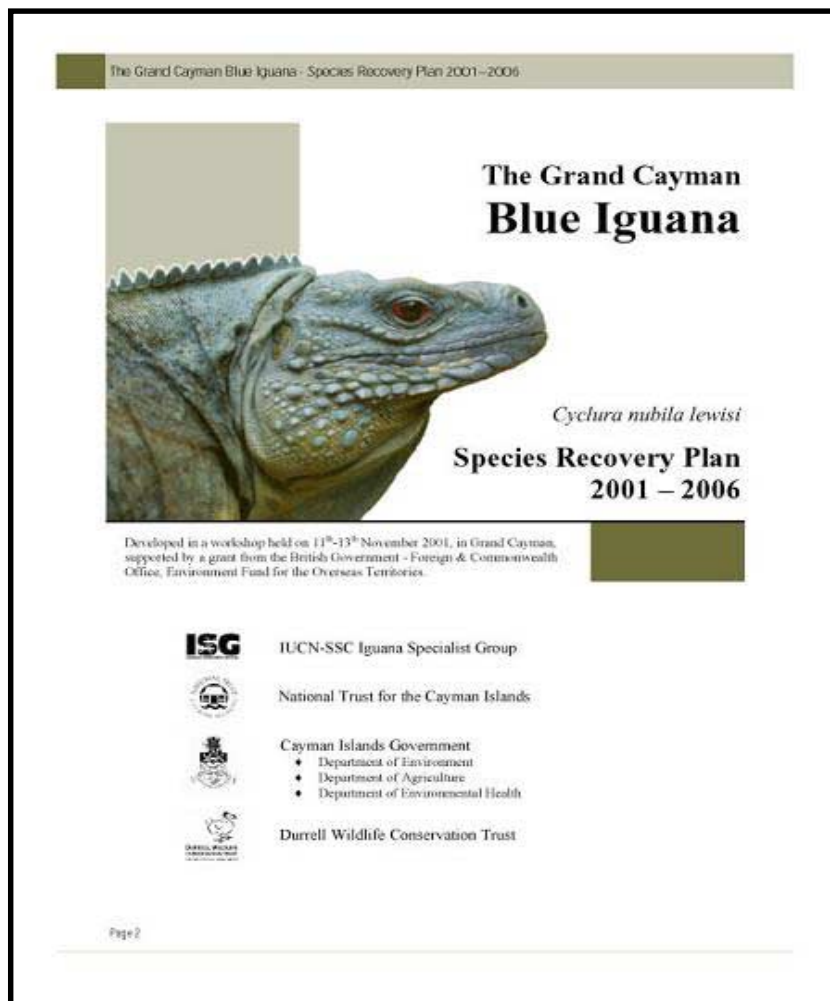
effort and expenditure.

First up, we have a plan. It says we are going to restore a wild population of the Grand Cayman

Blue Iguana sufficiently to remain viable in the long term. And it lays out how we are going to do that, down to the specifics of who will do what, by when. So now we are implementing that plan.

It is impossible to present in this short time frame the details of the plan, and the itemized degrees to which we have achieved the tasks set. I have brought a few copies of the SRP if anyone wants to take a closer look at the detailed plan itself. Instead of the detail, I want to give you a feel for how the entire program has been transformed in the wake of that planning workshop.

One way of looking at it is to look at the money. From 1991 to 2000, the average program income was \$6,200 per year. From 2001 to the present, the average income has been \$40,000 per year. That is more than a five-fold increase. Mind you, saving





Searching: Quentin Bloxam, Durrell Wildlife Conservation Trust

the Blue Iguana is ultimately going to cost about \$8 million, so we still have a way to go! I can say with confidence, we could not have accessed more than a fraction of that increased grant income, without the backing of an internationally endorsed Species Recovery Plan.

Another measure is the staffing level. I am now working on the programme full time, albeit as a volunteer for now. My successor at the Trust, Dr Mat Cottam is now giving the program the 8% or so of his time that I used to be able to spare. We also have a part-time Blue Iguana Warden taking care of the captive facility. That is more than a tenfold increase in local human resources dedicated to the programme.



Monitoring: Rachel Goodman, University of Tennessee



Maintaining: Desiree Ebanks, Iguana Warden

Harder to quantify is the hive of activity in a whole network of overseas partners and supporters, which has grown enormously since the meeting.

This has all translated into a surge of programme activity. We gathered an international volunteer crew to re-survey the remnant wild population, coming up with the shock result I gave you at the start, 10-25 left in the wild. We hosted a master's student who came up with a rich vein of information relevant to managing released populations. We doubled the capacity of the captive breeding facility for juveniles, and quadrupled the capacity for breeding adults. We have an all-time record of 30 hatchlings being head-started from last year alone. This year is "the year of the Blue Iguana" in the Cayman Islands, with a wave of public education and awareness initiatives (see picture on next page).

Obviously, \$17,500 spent on a species recovery plan workshop has paid off handsomely.

Will it save the species? Well, the Recovery Plan has set the stage. We have some momentum now,





but have to keep pushing harder and growing faster until we really do have the capacity to save a species. Still ahead, somehow we have to fund purchase of some 450 acres of privately owned land, to protect and manage enough area to restore and support 1,000 wild Blue Iguanas. We have to set up sustained income systems to support a core project staff for the long haul. The costs are going to make \$40,000 a year look pretty inadequate.

Of course, saving the Blue Iguana for 8 million dollars will also save a host of other equally important wildlife. The same habitat we need to protect for the flagship Blue Iguana, will protect all the biodiversity of Cayman's xerophytic shrubland communities, which is very poorly represented in protected areas at the moment. The conservation awareness generated will resonate through the local community. The international attention will influence govern-



ment environmental policy. Working to save a species is, in reality, much more than that.



To close, I just want to generalize a bit about Species Recovery Plans and their implementation, based on my own experiences with several of these.

Successful implementation of any strategic

plan depends hugely on the quality of that plan, and that depends critically on the selection of participants and the preparation for the originating workshop. The seeds to success or failure of implementation are usually sown very early in the planning process.

Species Recovery Plan workshops can be tremendously effective, as I have found for the Blue Iguana, but conversely they can sometimes be a waste of precious resources. Because international workshops are expensive and conservation funding and staff time are scarce resources, it pays to be careful and selective in their use, to pick the subjects where absence of formal planning can be seen to be a real obstacle to progress. Strategic planning is a tool, and like any tool it is only useful when it is applied to the right material, in the right way.

One of the hardest things in small island situations where conservation workers are often few and far between, is to bring all the relevant local players to the table for two or more days at a time. If it is really impossible to involve all the key players, and senior decision-makers from all the relevant stakeholder groups, it is almost impossible to generate a complete and authoritative plan. And trying to implement an incomplete plan can be a frustrating experience!



To survive, this beast is going to have to become a major conservation symbol. It's got the looks, it's got the charisma, and sadly it's got the crisis appeal.

Now it needs the promotion, the serious funding, and a lot more hard work.