

The Winston Churchill Memorial Trust of Australia

Report by Kerrie Bennison

2007 Churchill Fellow

The Lamington National Park Churchill Fellowship to study the conservation of small and threatened wildlife populations.

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Abernethy Nature Reserve, Scotland

Introduction

My 2007 Lamington National Park Churchill Fellowship allowed me to travel to Scotland, Jersey States and the United States of America, to study how different governments and non-governmental organisations (NGO's) attempt to conserve wildlife species threatened with extinction.

I met a wide range of skilled and dedicated people, working to protect a wide range of vulnerable species and learned that each project is individual and species –specific. I have come to realise that there is no generic answer to the problem of pending extinction; rather, the solutions are highly dependant on each individual, local situation.

The majority of the species I chose to study resemble those we risk losing here in Australia; either they have similar biological parameters or they are threatened by similar processes. This report summarises my travel and the lessons I learned. Most importantly, *“There are no hopeless cases, only people without hope”* (Michael Soule).

I remain overwhelmed by the opportunity I was given and would again like to thank the Churchill Trust and Mr Tony Groom for the honour that was bestowed upon me. I have returned to Australia with enough optimism to last a lifetime, and have learnt that there is usually a solution, sometimes you just have to look a little harder to find it.

I would also like to thank Jim Clayton, Marnie Crossman and Paul Clarke for their help in many ways and the Queensland Parks and Wildlife Service for their support.



Male Capercaillie

Executive Summary

Kerrie Bennison

78 Bright St, Emu Park, Queensland, 4710

Regional Resource Ranger, Queensland Parks and Wildlife Service, Central Region
07 49360514

kerrie.bennison@epa.qld.gov.au, kerriebennison@yahoo.com.au

Project Details

My Churchill travel involved visiting successful marine and terrestrial threatened species conservation projects in Europe and the USA. These projects were managed by a variety of institutions including federal and state governments, universities and non-governmental organisations. Perhaps reflecting this diversity of organisations, the collection of recovery actions witnessed ranged from the conventional and contemporary to the unusual and imaginative.

Project Highlights

- Witnessing the comprehensive system of experimental management strategies undertaken by the Royal Society for the Protection of Birds to conserve Capercaillie in Abernethy Nature Reserve.
- Sharing opinions, suggestions and ideas with threatened wildlife managers from sixteen different countries at the Durrell Conservation Trust.
- Discussing ideas with, and learning from, Dr Les Chow- biologist- Yosemite National Park.
- Observing the management of the San Joaquin kit fox- Bakersfield, California.

Major Lesson Learnt

Management of threatened species is often paralysed by a lack of critical information regarding the species and therefore an unwillingness to make decisions, as the potential consequences are so high. Whilst overseas I witnessed several examples of experimental management that simultaneously provides critical information and actively influences the fate of a species whilst ensuring a 'safety net' exists, just in case. I believe that threatened species management in Australia will be greatly enhanced by adopting a similar experimental approach in the many cases where data is insufficient.

Fellowship Programme

21st-27th October 2007, Inverness, Scotland

- Abernethy Nature Reserve
- Private property and several state forests containing Capercaillie habitat
- Highland Wildlife Park

28th October -3rd November, Trinity, Jersey

- Durrell Institute Conservation Ecology
- Durrell Conservation Trust
- Intensive Species Conservation Short Course

10th- 24th November, Florida, USA

- University of Florida Veterinary School
- Advanced Fish Medicine- University of Florida
- United States Geological Survey, Sirenia Project
- Crystal Springs National Wildlife Refuge
- Homosassa Wildlife Park
- Florida Fish and Wildlife Service, Marine Mammal Pathology Laboratories
- Lowry Park Zoo and Manatee Rehabilitation Centre
- Sea World, Florida
- Tampa Electric Company's Manatee Viewing Centre
- Parker Manatee Aquarium

25th November- 18th December, California, USA

- US National Parks Service- Yosemite National Park, Kings Canyon National Park, Sequoia National Park
- California State University- San Joaquin Valley Endangered Species Recovery Project- Fresno, Bakersfield and Turlock Projects
- Monterey Bay Aquarium
- US Fish and Wildlife Service- San Joaquin National Wildlife Refuge, St Luis National Wildlife Refuge, Merced National Wildlife Refuge
- Bureau of Land Management- Carrizo Plains National Monument
- California Living Museum
- California Fish and Game Service- Bakersfield Cactus Project
- University of California, Davis Veterinary School
- Sacramento Zoo
- San Diego Zoo
- Sacramento River Partners

SCOTLAND

My visit involved first hand experience with the effort to protect the Capercaillie (*Tetrao urogallus*), the worlds largest grouse species, from extinction. Currently the population is estimated to be 1980 individuals.

Capercaillies need considerable amounts of old growth Caledonian Scots Pine Forest, the largest remnant of which is found on Abernethy Nature Reserve owned by the Royal Society for the Protection of Birds (RSPB) and managed specifically for the conservation of the Capercaillie and the Black Grouse.

Whilst at Abernethy I was able to observe a wide and varied range of management tools and management trials. These included:

- A variety of methods to manage heather dominance of the understorey.
- Rehabilitation of plantation pine forests to Capercaillie and Black Grouse suitable habitat.
- Re-forestation of heather moors to increase the amount of habitat available to the two grouse species.
- Management of egg and chick predation levels by the carnivorous predators- red foxes and pine martens
- Population survey and monitoring techniques.

Capercaillies need a large amount of habitat. Each individual male home range (lek) is 300-400 hectares. Many leks are required to support a viable, self sustaining population. Therefore, for conservation of the Capercaillie to be successful, the inclusion of parcels of private land that contain suitable habitat, in the management effort is necessary.

The RSPB has employed a Capercaillie Project Officer to assist private landholders and other government departments (including Forestry Scotland) to manage for Capercaillie conservation. I also spent time with the project officer and observed many tools used to conserve the species on private lands.

JERSEY STATES

My week on the channel island of Jersey involved visiting the Durrell Conservation Trust. The amphibian keepers at Durrell are world leaders in the field of captive breeding and release of threatened frogs as well as wild to wild frog translocations and management of critically endangered wild populations.

Whilst on Jersey I was able to experience all aspects of threatened frog management. This included quarantine protocols, the use of the captive environment to answer critical questions necessary for frog conservation, captive breeding facilities, frog transportation methods and methods of population survey.

A further reason for visiting Jersey was to undertake specialised training in species conservation with the Durrell Institute Conservation Ecology - University of Kent. This training involved a five day intensive course of lectures and practical sessions taught by staff from the university and the Durrell Conservation Trust who, together, has been responsible for the recovery of several endangered species worldwide.

The course included training in a wide variety of topics including managing problems associated with the small gene pools in threatened populations, performing population viability analyses and the design of effective recovery programs.



Participants on the Species Conservation Course- Durrell Conservation Trust

FLORIDA

In Florida I studied the Florida manatee (*Trichechus manatus latirostris*) conservation effort in its many forms, including federal and state government responses and the work of many NGO's. Vast amounts of time and resources are expended on the conservation of this species. The population is approximately 3000 individuals, with a loss rate of 10% each year. The issues and threats faced by the species are extremely complex with manatees being dependant on natural warm water springs which are also highly sought after by canal estate developers and boating enthusiasts.



Orphaned manatees-David A Straz Jnr Manatee Hospital, Lowry Park Zoo

My trip to Florida included:

- Working with federal government staff who conduct targeted manatee research and operate the MIPS (Manatee Individual Photo-identification System), in which individual animals are recognised according to their unique scarring pattern from many boat strikes.
- Experiencing many facets of manatee health and emerging disease investigation and causes of mortality.
- Visiting manatee protection zones and winter congregation sites.
- Viewing a wide range of manatee focused public education campaigns.

CALIFORNIA

My visit to the central valley of California involved working with the California State University's- San Joaquin Valley Endangered Species Recovery Project (ESRP). The San Joaquin Valley of California is home to the most threatened species of any area in the United States. This is due to the vastly altered landscape and disruption of normal hydrological flow associated with the largest agricultural producing region in America and the density of people and development associated with cities like Los Angeles, San Francisco and San Diego.

My visit with ESRP was extremely rewarding and included first hand experience with a range of species and techniques applicable to their conservation. These included an array of trapping techniques, diverse methods for radio tagging and tracking translocated animals, statistical analyses of data and health protocols for captive breeding and animal release.



San Joaquin Kit Fox

Additionally, whilst in California, I was able to visit a number of protected areas and private conservation lands managed by a variety of institutions including state and federal government departments, universities and NGO's. This allowed me to gain experience in the landscape and ecosystem level of biodiversity conservation and included lessons in balancing large-scale eco-tourism with wildlife conservation, the use of sustainable harvest of wildlife and large scale habitat rehabilitation projects.

CONCLUSIONS

My Churchill Fellowship allowed me to visit the conservation projects for some of the world's most threatened species. Further, my Churchill experience provided an instrument to gauge the adequacies of the management of threatened species in Australia, utilising the new perspective gained by experiencing world's best practice. In the vast majority of cases I believe that Australia's response is both adequate and robust. However, there is always room for improvement and I learnt many lessons and observed several patterns and trends emerging in international conservation management, many of which, I believe, are applicable to Australia. These conclusions are outlined below and are in no particular order.

- Beware of 'paralysis by analysis' (RSPB- Abernethy Nature Reserve). Some species cannot wait for the results of long term monitoring and trials. If unsure, proceed with active management in an experimental manner by ensuring equal amounts of managed and unmanaged (control) insurance areas to allow for before and after comparisons over time.
- Most threatened species will have locality specific threats which need discovery, investigation and amelioration on a local level. Generic responses and responses developed by people remote from the situation may overlook these impacts and ultimately lead to inefficient allocation of resources.
- Reliance on pest control as a panacea for threatened species management can reduce the potential for lateral thinking and the ability to analyse and ameliorate other threats.
- The creation of 'dead wood' centres and other habitat manipulation tools in rehabilitating plantation forests will increase biodiversity more quickly than allowing natural regeneration.
- A range of instruments are necessary for threatened species protection and may include: ongoing payments to private landholders for maintaining habitat for threatened species, legislative protection and enforcement, partnerships with industry and tax relief incentives.
- Legislation is a toothless tiger without adequate checks and balances and enforcement when necessary.

- Wildlife health assessments are important to all aspects of threatened species conservation. This includes health screening of wild populations, captive breeding and re-introduction programs, species living in polluted/impacted areas or downstream from these activities and in situations where wildlife and domestic animals are in close proximity.
- Sustainable harvest and utilisation of threatened species is sometimes the best way to promote stewardship and ensure species conservation.
- Heavy metal concentrations in Sirenia (manatees and dugongs) should be analysed (from skin samples) to assess effects of coastal industry and development.
- The use of dual-entry *Tomahawk* traps may increase the rate of success in projects requiring the capture of individuals.
- The use of trained dogs in some conservation projects increases effectiveness and efficiency of resource use.
- Welfare considerations and stress levels of animals trapped overnight may be decreased by providing novel objects to chew.
- Bats are a useful indicator species for riparian and freshwater habitats.
- Many methods exist for manipulation of ground cover including controlled cattle grazing, grazing with other herbivores (both native and exotic), burning, mechanical manipulation and re-vegetation.
- Specific and recognisable pathology will be associated with conditions commonly causing mortality in Sirenians. Widely disseminated knowledge of what to look for will help assign mortality explanations for necropsied individuals.
- Surrogate common species can be used to test suitability of captive breeding facilities and pre-release site management before reintroduction of threatened species, to increase the rate of success.
- Expertise exists worldwide to advance the management of threatened frog species in Queensland.
- A compulsory education course for all new boat licensees may reduce boat-induced dugong and turtle mortality in south-east Queensland.

- Multi- species recovery planning for the range of threatened species in an area may be more beneficial for identifying common threats and interactions between species, leading to more efficient and effective resource allocation.
- The large range of scent lures available in the USA should be tested for effectiveness in Australia.
- If sufficient data is available, a population viability analysis is a useful method to gauge success of recovery actions employed to manage threatened species.
- Introducing an element of wild exposure into reintroduction programs will often improve success. This may include pairing hand reared neonates with ‘wild’ captives or pairing animals to be reintroduced with wild caught cohorts before reintroduction of both animals together.
- Delegating responsibility to small experienced and well trained on-ground teams will increase the success of wildlife management projects, especially in remote areas.
- Targeting predators within strategic time frames and in strategic locations may greatly reduce the burden of year round control.
- Genetic bottlenecks in threatened species management are a concern. However, there are many examples where populations have recovered and therefore management should proceed regardless, especially if symptoms of reduced reproductive fitness are absent.
- Successful reintroduction programs throughout the world share a set of common characteristics and these should be used as a basis for planning reintroduction programs in the future.

These conclusions will be disseminated using a variety of mediums. The most important will be direct implementation in the management of threatened species in Queensland and the Northern Territory. Other activities will include seminars and publications in internal newsletters and journals.

RECOMMENDATIONS

To incorporate these new ideas into Australian threatened species conservation I hope to:

- Introduce experimental management in the conservation projects of the species I will be involved with including the Great Desert Skink, Mulgara and Marsupial Mole.
- Increase health screening in the threatened species projects I will be involved with in order to identify and treat emerging diseases before they have the ability to impact a population.
- Produce a pictorial atlas of common Sirenian organ pathology for rangers throughout the Central Queensland coast to use when performing necropsies on dugong. Increased accuracy associated with cause of death will help manage these threats for the rest of the population.
- Investigate the potential for using bat diversity as an indicator of riparian environmental health.
- Disseminate information regarding manatee education resources for boat enthusiasts to institutions involved with boat regulation in Australia. This will be in the hope that a similar education method will be adopted here and lead to a reduced mortality rate of dugong and turtles from boat strike on the Queensland coast.
- Organise a study in Uluru-Kata Tjuta National Park, similar to that undertaken by Les Chow in Yosemite National Park, where high visitor numbers result in a continual rate of wildlife road mortality. If this mortality is significantly impacting populations of threatened species living adjacent to the road, this information will be used as evidence for reduced speed limits.
- Investigate the effectiveness of dual entry traps and fatty acid scent lures in wildlife management and predator control programs in Queensland and the Northern Territory.
- Consult with key personnel involved with threatened frog management in Queensland in order to disseminate knowledge of threatened frog management overseas.
- Trial the use of providing chewing objects to decrease the stress for animals involved in capture programs.