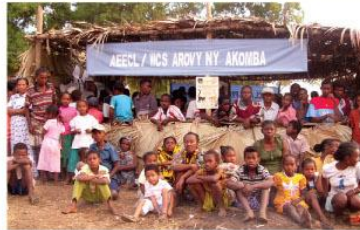


Bristol Conservation and Science Foundation

Launch Symposium

The Clifton Pavilion
Bristol Zoo Gardens



30th October 2008



Bristol, Clifton and West of England Zoological Society Ltd.

INTRODUCTION

The Bristol Conservation and Science Foundation is a new operating unit of the Bristol, Clifton & West of England Zoological Society Ltd that is charged with running the Society's wildlife conservation and research programmes at Bristol Zoo Gardens and in the field

The amount of land around the world that is protected for wildlife, as national parks or wildlife reserves, is very small. In most parts of the world, the 'wild' is no longer an unspoilt wilderness. Many species are threatened and becoming rare due to human activities.

The roles of good Zoos are to provide visitors with amazing experiences for learning about wildlife and biodiversity, to apply our specialist skills to investigate threats to biodiversity, and to support communities in tackling specific pressures that give rise to conservation need.

The Bristol Conservation and Science Foundation, staffed by international conservationists, scientists and enablers of conservation, undertakes original research to provide the critical insights that help fulfil our conservation goals.

Symposium on Evidence Based Conservation

30th October 2008

10:15 Arrival and coffee

Symposium session 1 – Bristol Conservation and Science Foundation

10:45 Jo Gipps Welcome and scene setting

10:50 Bryan Carroll Integrated conservation

11:05 Neil Maddison Field projects; case studies

11:30 Hugh Dalton Community-led approach to conservation in the
Mohamed Moutui Comoro Islands
Ali Said Said Mohamed

12:10 Christoph Schwitzer Conservation science

12:30 Lunch

Symposium session 2 - Evidence based conservation

13:30 Val Kapos Calibrating conservation: tools for measuring
conservation success

14:00 Andrew Pullin Doing more good than harm: building an evidence-
base for conservation and environmental
management

14:20 David Bird Conservation issues for freshwater fish in Indonesia

14:40 Sara Oldfield Plant conservation in a changing world - are we
achieving success?

15:00 Tea

Symposium session 3 - The future

15:30 Peter Barham New technologies in conservation research

15:50 Andy Radford The importance of behavioural ecology to
conservation and management

16:10 Andy Purvis Hotspots of diversity and extinction: identifying
future battlegrounds of mammalian conservation

16:30 Simon Bearder Protecting the unknown: the taxonomic background
to conservation

16:50 Mark O'Connell South West Conservation Science Forum
John Dutton

17:20 Bryan Carroll Summing Up

Bristol Conservation and Science Foundation Team

Dr Jo Gipps - Director



Dr Jo Gipps joined Bristol Zoo Gardens as Director in September 2001. He previously worked at London Zoo for 12 years, eight of those as Director. Jo is a member of the Council of the World Association of Zoos and Aquariums (WAZA) and he chairs its Conservation Committee; in this capacity, he was responsible for producing “Building a Future for Wildlife”, the World Zoo and Aquarium Conservation Strategy, in 2005.

He chairs the Bristol Natural History Consortium, a charity which is responsible for the annual Bristol Festival of Nature and the ‘Communicate’ conference. He also sits on the Board of Destination Bristol and is a member of the steering groups of Science City Bristol and the Bristol Green Capital Momentum Group.

Dr Bryan Carroll - Deputy Director



Dr Bryan Carroll joined Bristol Zoo in August 1995, having come from the Jersey Wildlife Preservation Trust (now Durrell Wildlife Conservation Trust) where he was Curator of Mammals at Jersey Zoo. This background in an establishment that pioneered the idea of the zoo as a conservation organisation has enabled the development of Bristol Zoo’s conservation and scientific programmes.

Bryan is a member of the Council of the European Association of Zoos and Aquaria (EAZA) as well as being a member of the EAZA EEP Committee (which oversees all European co-operatively managed species programmes) and the EAZA Conservation Committee. Bryan is also a member of the World Conservation Union’s Primate Specialist Group, Bat Specialist Group and the Conservation Breeding Specialist Group.

Dr Christoph Schwitzer - Head of Research



A biologist by training, Dr Christoph Schwitzer received his PhD in Zoology from the University of Cologne, Germany, for his work on the nutritional ecology of lemurs, which he conducted in several European zoos. He worked as part of the primatological research group at Cologne Zoo for several years and also coordinated the European Endangered Species Programme for Ruffed lemurs. In 2003 he took on a position as Programme Coordinator for the European Association for the Study and Conservation of Lemurs (AEECL) in northwest Madagascar, where he directed a field research and conservation programme that has recently led to the creation of a new national park. Since August 2006, Christoph has been Head of Research at Bristol Zoo Gardens, and was appointed Executive Secretary of AEECL in May 2007.

Neil Maddison - Head of Conservation Programmes



Neil Maddison gained his first degree in Zoology at the University of Bristol and went on to work for several conservation charities before joining the Bristol, Clifton and West of England Zoological Society in 1997, initially as Development Manager. His experience in field conservation has led him to focus on working with communities to develop sustainable solutions to wildlife conservation, looking for practical ways to support disadvantaged people in their development. This often leads to an examination of the 'business case' for conservation, and finding new sources of revenue for local communities. Neil obtained his MBA from the University of the West of England, with a specialisation in pro-poor ecotourism. He is a Trustee of the Cameroon Wildlife Aid Fund, an NGO working to address the commercial bushmeat trade in Africa and was previously a Trustee of the Hawk and Owl Trust. He is also currently a member of the Conservation Specialist Breeding Group and the Association of MBAs.

Abstracts

Calibrating conservation: tools for measuring conservation success

Valerie Kapos

Cambridge Conservation Forum, Dept of Zoology, University of Cambridge

Evaluating the success of conservation efforts and identifying those approaches that are most effective are major challenges facing conservationists, policy-makers and donors alike. Several recent efforts have sought to develop approaches that would enable standardised evaluation and synthesis of experience from conservation projects. Most recently, the Cambridge Conservation Forum - a consortium of over 30 global to local organisations - has spent three years developing a conceptual framework and a practical scorecard for evaluating major categories of conservation activity. The framework identifies seven broad categories of conservation action and recognises that each leads to conservation impact through distinct pathways of outputs and outcomes. The resulting set of seven conceptual models form the basis for the structure of a questionnaire-based evaluation tool. Applying these tools to sample projects from 10 conservation organisations has shown that standard questions about the links between activity and conservation impact can help project implementers to identify the likely impacts of their actions, even for projects still in progress and for activities such as capacity building or policy-related work where biological impacts are not commonly measured. Using targeted questions about 'key outcomes' in planning and evaluating projects is one way to improve the availability of information that can help to verify conservation impacts. Answers to these questions are much better predictors of conservation success than more commonly reported measures of project implementation effectiveness. While few organisations are good at openly declaring whole projects to be complete failures, or indeed sharing widely their failures, examining projects by their component interventions can help to identify more and less successful approaches. Wider use of these tools along with a simple scoring system can help to synthesise experience from a diverse range of activities and projects and identify semi-quantitatively some important predictors of conservation success.

Doing more good than harm: building an evidence-base for conservation and environmental management

Andrew Pullin

Centre for Evidence-Based Conservation, Bangor University

Numerous policy and management interventions now aim to halt and reverse the decline of biodiversity on a global scale. There is a danger that implementation is regarded as an end in itself and that such well-meaning interventions must be doing more good than harm. There is an urgent need for transparent, critical and objective evaluation of their effectiveness so that we can build on success and learn lessons from failure. This talk describes a practical structure for building an evidence-base to improve the effectiveness of conservation actions. All parties need to engage and collaborate in review and evaluation activity if significant progress is to be made toward more effective conservation.

Conservation issues for freshwater fish in Indonesia

David J Bird

School of Life Sciences, University of the West of England

Fish conservation has mainly focused on exploited marine species and our knowledge of the status of freshwater and estuarine fish populations in many parts of the world is poorly understood. Using electrofishing and seine netting, a survey of the fish fauna of two islands off the coast of Sulawesi, Indonesia was carried out. A total of 91 freshwater and estuarine sites were surveyed and more than 100 different species identified. While some species were widespread and abundant, others were restricted to just a few sites. The eel, *Anguilla celebesensis*, was present in every sample and this species contributes the greatest proportion of the fish biomass in most rivers. The variety and distribution of the Gobiidae suggested that an adaptive radiation of this family has occurred on the islands. Approximately 15 different species of goby were collected; some of which may be new to science. The greatest diversity was found in the lower reaches of rivers and in estuarine conditions, with species abundance and diversity decreasing with altitude and distance upstream. In relatively undisturbed rainforest surface feeding species of halfbeak (Hemiramphidae) were often common. Several rivers contained introduced species that included tilapia (*Oreochromis*), catfish (*Clarias*) and the predatory snakehead (*Channa*). Statistical analysis, using ordination techniques, suggested that the variation in species composition between sites can be explained mainly by the size of the river, the nature of the substratum and the conductivity of the water. It was clear that seasonal effects influence the species composition and this fact has important implications for biodiversity monitoring programmes. The analysis also indicated that some species may prove useful indicators of disturbance and therefore of value in managing conservation with rainforest reserves.

Plant conservation in a changing world - are we achieving success?

Sara Oldfield

Botanic Gardens Conservation International

The Global Strategy for Plant Conservation (GSPC) of the Convention on Biological Diversity was agreed in 2002 with 16 ambitious targets to be met by 2010. The GSPC overall has provided a co-ordinating mechanism and framework for action that has been embraced to a varying extent by governments, the botanic garden community, zoos and other NGOs. Botanic Gardens Conservation International (BGCI) and individual gardens have used the Strategy for planning their own conservation programmes. In the UK, *Plant Diversity Challenge* was developed by Plantlife, Joint Nature Conservation Council and Royal Botanic Gardens, Kew as the UK response to the GSPC. Progress towards meeting the GSPC targets at local, national, regional and global levels has been variable. This presentation will review progress of the GSPC highlighting where conservation gains have been made and which factors have influenced success in relation to different targets. The collection and use of scientific information and application of this in practical conservation targets will be considered. Building on the GSPC framework, plans for developing a coordinated approach to plant conservation post 2010, taking into account the impact of global climate change, will be discussed.

New technologies in conservation research

Peter Barham¹, Tilo Burghardt¹, Innes Cuthill², Neill Campbell³ and Richard Sherley¹

¹ Department of Physics, University of Bristol

² School of Biological Sciences, University of Bristol

³ Department of Computer Science, University of Bristol

Sensible conservation interventions rely on the existence of reliable data concerning, amongst others, detailed population sizes and their changes over time. It is also important that any conservation efforts are followed up with long term monitoring so that the actual impact can be determined and thus the effectiveness assessed.

In most species, population demographics are found through one of a variety of mark-recapture techniques. Such methods can themselves have impacts on the species under investigation – not only can the initial capture and marking process stress the animal in ways that may affect subsequent behaviour, but also, in some cases, the cost of carrying a device (such as a radio collar, or a wing band) can be significant.

We are developing new systems that can be used in a completely non-invasive fashion to acquire reliable data on the population dynamics of near full populations.

The initial system, using computer vision techniques and remote cameras to recognise individual penguins is now nearing completion and commissioning. It should soon be capable of recording the movements of more than 90% of the individual African penguins in the third largest colony on at least a monthly basis, provide precise measurements of total population as well as estimates of annual (and monthly) survival rates. We intend, in the next two to three years to expand the system to cover all the colonies and thus provide data on overall population as well as details of movements of individuals between colonies. These data will be used both to monitor the impact of ongoing conservation interventions and to inform new initiatives.

The technology being developed is applicable to a very wide and diverse range of species – we hope to acquire the funding in the near future to permit us to develop simple easily deployable systems that can be used wherever the need arises.

The importance of behavioural ecology to conservation and management

Andy Radford

School of Biological Sciences, University of Bristol

Conservation biology is an inherently multidisciplinary endeavour, drawing on many fields from both the natural and social sciences. Behavioural ecology, for example, has the potential to provide important guidance to biodiversity conservation efforts by contributing valuable theories, approaches, data and scientific expertise; 10 years ago, there was a flurry of publications emphasising how behavioural research could inform conservation efforts and calling for increased overlap between the two fields. Here, I briefly outline some key components of my own behavioural studies, including the use of long-term data sets and replicated experimental manipulations, as well as the benefits of working on habituated populations. I then discuss whether conservation biologists can indeed benefit from such approaches given their frequent need for quick solutions. Such discussion is timely in light of recent suggestions that the integration of behaviour and conservation has progressed little in the last decade.

Hotspots of diversity and extinction: identifying future battlegrounds of mammalian conservation

Andy Purvis

Division of Biology, Imperial College London

Global conservation prioritisation usually emphasises areas with the highest species-richness or where many species are thought to be in imminent risk of extinction. However, this is a reactive approach to conservation planning, which may not be optimal given the scale of ongoing global changes. In this talk I outline how we can identify species that are not yet declining rapidly but whose biological attributes make them likely to decline if human impacts increase. Large-scale comparative analyses of risk patterns and correlates make it possible to see how the levels of extinction risk in a region depend on the intensity of human effects, which varies greatly across the globe. This spatial variation in levels of damage makes it possible, in principle, to predict how extinction risk patterns will change as impacts increase. The framework could help to highlight the consequences of choosing among different future climatic and socio-economic scenarios, and could help conservation efforts to get ahead of the curve, rather than reacting to declines that are already underway.

Protecting the unknown: the taxonomic background to conservation

Simon K Bearder

Professor of Anthropology, Oxford Brookes University

Cryptic species present a problem for conservation initiatives since the division of a species that was once thought to be widespread, into two or more separate species with more limited distributions, can have a profound effect on estimations of their status. The extent of parallel and convergent evolution among nocturnal primates, for example, made distantly related species appear very similar when compared in the museum, resulting in a gross underestimation of the extent of speciation. With the application of more rigorous new techniques that compare the communication systems, habitat specialisation and genetics of populations, the number of species that are now recognised has increased exponentially, with several new forms waiting in the wings. Particularly striking increases have been documented among the galagos and the nocturnal lemurs, but the same upward trend is becoming obvious among other nocturnal primates - lorises, pottos, tarsiers and owl monkeys. This presentation explores the importance of taxonomic studies in the modern context, with an overview of where subspecies stop and good species begin. This leads to a different perspective on biodiversity in general and the actions that are required to protect it. When faced with an explosion of new names for species and genera two responses are common. The first is to shoot the messenger; to categorise the perpetrators as 'splitters' and overlook the merits of their case. But this can lead to overlooking species that are genetically far more distant from one another than chimpanzees are from humans. An alternative response is to see this newly discovered diversity as an opportunity to learn more about previously unknown species and discover their significance within the ecosystem before they become extinct. The rewards of this second approach are considerable and will be elucidated during this talk.

South West Conservation Science Forum: linking researchers and practitioners

Mark O'Connell¹, John Dutton² and Christoph Schwitzer³

¹ Dept of Biology & Biochemistry, University of Bath

² Hartpury College, University of the West of England

³ Bristol Conservation and Science Foundation, Bristol Zoo Gardens

In the ecological, countryside, environmental and conservation sectors, there is widespread acknowledgement that interactions and knowledge transfer between researchers and practitioners needs to be greatly improved. The recognition of this need has given rise to a number of initiatives, particularly in relation to evidence-based conservation. Surprisingly however, there is a lack of research-based knowledge of the 'barriers' that impede knowledge transfer within and between different organisations. As a result there remains an ongoing need to tackle the problem of *ad hoc* contact between researchers and practitioners. To address this issue, the establishment of a regional forum is proposed. The forum would have the specific aims of: (1) raising awareness of the diverse information needs within different sectors, (2) providing information about the region's skills base, (3) facilitating increased contact and exchange between people and organisations, (4) disseminating information about funding and other opportunities, and (5) fostering collaborative actions and initiatives. A number of models and recommendations are presented.

To find out more about Bristol Conservation and Science Foundation's important work, please contact:

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