

ZSL SCIENCE AND CONSERVATION EVENT

Madagascar's missing megafauna: life after lemurs, hippos and elephant birds

Tuesday 12 November 2019

Huxley Lecture Theatre, Zoological Society of London,
Regent's Park, London NW1 4RY

AGENDA

Chaired by Professor Danielle Schreve,
Royal Holloway, University of London

Receive the following communications

**Dr James Hansford, Institute of Zoology, ZSL and
Northern Illinois University**

*The Elephant birds in the room: Madagascar's avian giants and their
ecology*

Associate Professor Karen Samonds, Northern Illinois University

*In the footsteps of giants: deciphering the details and demise of
Madagascar's subfossil communities*

Dr Richard Young, Durrell Wildlife Conservation Trust

The Madagascar pochard: a cautionary tale of near extinction

ABSTRACTS

The Elephant birds in the room: Madagascar's avian giants and their ecology

Dr James Hansford, Institute of Zoology, ZSL and Northern Illinois University

The elephant birds of Madagascar include the largest birds to have ever existed and have captured the imagination of scientists and writers for at least 150 years. Despite their incredible size and extraordinary history of early scientific reporting, they have been subject to remarkably little modern research in comparison to other charismatic megafauna and other animals from Madagascar. For over 80 years they have been the unmentioned component of Madagascar's recent past and have been sat, gathering dust, in museum collections around the world. Following his PhD research into the "Diversity and extinction of Aepyornithidae" (the elephant birds), ZSL researcher Dr James Hansford discovered that there are more species than is commonly thought, and that they provide a unique lens into understanding both the undisturbed landscape and the record of humans in Madagascar. But what ecosystem services did these animals contribute to Madagascar's landscapes and what are the consequences of their extinction?

James Hansford is an early career Research Fellow at the ZSL's Institute of Zoology and Northern Illinois University. His work focuses on how we can use the subfossil record of recently extinct animals to understand the natural composition and function of ecosystems, highlighting keystone species. His recent work on the elephant birds of Madagascar has become the foundation of understanding some of the world's largest ever birds, more than doubled the island's archaeological record and promises to grant unique insights into Madagascar's pre-human ecosystems.

In the footsteps of giants: deciphering the details and demise of Madagascar's subfossil communities

Associate Professor Karen Samonds, Northern Illinois University

Naturalists have been drawn to Madagascar for centuries due to its bizarre plants and animals. However, the islands living groups pale in comparison to the diversity of the recent past. The island's subfossil (Late Pleistocene and Holocene) record has contributed greatly to our understanding of Madagascar's recent ecological evolution, and aided interpretations of recent environmental change; this record includes large-bodied lemurs, elephant birds, pygmy hippos, crocodyliforms, turtles, bats, carnivorans, rodents and the aardvark-like Plesiorcyteropus. These groups suffered a megafaunal extinction episode beginning approximately 2000 years ago, widely believed to have been induced by humans, either directly (via hunting) or indirectly (via landscape transformation), aided by Late Pleistocene and Holocene climatic change. Primates were hardest hit, with three families disappearing

entirely, and two other groups losing members. Not all habitats that suffered species loss also suffered drought, which does not support island-wide drought as the primary trigger of this extinction. The arrival of humans pre-dated the decline and extinction of many groups, and the megafaunal “crash” did not occur until sometime during the past two millennia. Extinction rates far exceed what is expected through background extinction. As Madagascar is currently recognised as one of the world’s highest-priority “hotspots” for biodiversity, the unsustainable pace of these extinctions is of very high concern.

Karen Samonds’ research integrates comparative anatomy, systematics, and biogeography with field paleontology to address topics in vertebrate evolution. Her field research aims to shed light on the origin and evolutionary history of Madagascar’s modern groups, some of the most unique and endemic on the planet. How, when, and from where they originated has remained unknown due to a 65-million-year gap in the fossil record that occurs during the time the modern animals are thought to have arrived. By travelling to remote and unexplored regions, she has started to elucidate this period by collecting and describing new fossils from this time.

The Madagascar pochard: a cautionary tale of near extinction

Dr Richard Young, Durrell Wildlife Conservation Trust

This talk will explore the hidden decline of the Madagascar pochard to the point it was believed gone forever. After a chance rediscovery, I outline the intensive efforts over the past 15 years to save this species from extinction in the face of challenging socio-economic, ecological, political and logistical barriers. I conclude by discussing the future for the Madagascar pochard and what it will take to recover it from the brink.

Richard Young is the Head of Conservation Knowledge at Durrell Wildlife Conservation Trust, leading the Science, Effectiveness, Training and Learning teams. They enable the delivery of evidenced-based field and zoo-based conservation interventions, and lead on impact measurement across the Trust. They run an international conservation training programme from their Academies in Jersey and Mauritius and in-country, plus nature connection and conservation education programmes in Jersey Zoo. Richard’s research interests lie in biodiversity assessment and monitoring, and conservation impact evaluation. As part of Durrell’s Senior Management Team, Richard shapes Durrell’s vision, designs organisational strategy and oversees delivery of its conservation mission. He is Co-Chair of the IUCN SSC Small Mammal Specialist Group and a member of the IUCN Green List Technical Working Group.

Join us at our next event

Can surveillance technology and social science address rule-breaking and wildlife crime?

10 December 2019, 6pm – 7:45pm

Law breaking, such as poaching or fishing inside marine reserves, is a great challenge to conservationists because research is often complicated by sensitivities related to ethics and data privacy. Machine learning is opening up new ways to tackle rule-breaking, using ranger reports, thermal and aerial imagery, and vessel positioning data. Similarly, in the humanities, social scientists are using increasingly sophisticated survey tools to understand the motivation and circumstances that result in crime. This event will unveil the multidisciplinary field of rule-breaking, and the global challenges and opportunities faced by scientists tackling wildlife crime.



ZSL Library Events

The library will continue their monthly talks at **4:45pm before each Science & Conservation Event** this year, each one focusing on different examples from their Special Collections! No need to book, just come along, or find out more here... <https://www.zsl.org/about-us/zsl-library-collection>.

ZSL Wild Science Podcast

We will be creating a podcast relating to this event topic, so be sure to keep an ear out for it in the following months! Listen to more of our award winning **ZSL Wild Science podcast** episodes hosted by Research Fellow Dr Monni Bohm here... <https://www.zsl.org/zsl-wild-science-podcast>.

Please feel free to contact the Scientific Events Coordinator, Eleanor Darbey (eleanor.darbey@zsl.org), if you have any queries about our events.