

ZSL SCIENCE AND CONSERVATION EVENT

Tuesday 14 May 2019

The Meeting Rooms, Zoological Society of London,
Regent's Park, London NW1 4RY

AGENDA

Street-smart animals: incorporating cognitive behaviour into conservation efforts

Chaired by Dr Claudia Martina

Department of Anthropology, UCL & Institute of Zoology, ZSL

Receive the following communications

**Dr Alex Thornton, Associate Professor of Cognitive Evolution, University
of Exeter, Cornwall Campus**

Animal cognition in a changing world

**Graham Martin, Emeritus Professor, School of Biosciences, University of
Birmingham**

A sideways look through birds' eyes

Robert Harland, Team Leader of Animal Activities at ZSL London Zoo

Training a rescue serval

ABSTRACTS

Street smart animals: incorporating cognitive behaviour into conservation efforts

Animal cognition in a changing world

Dr Alex Thornton, Associate Professor of Cognitive Evolution, University of Exeter, Cornwall Campus

Animals' cognitive abilities allow them to process information from the environment and use it to make adaptive decisions. However, as a result of human activities, animals throughout the world now face environmental challenges that are radically different to those they have evolved to deal with. In all too many cases, these environmental changes have caused catastrophic population declines, but there are exceptions: birds of the crow family, for instance, often thrive alongside humans. In this talk I will discuss field experiments on populations of wild jackdaws, showing how these birds' cognitive abilities allow them to respond appropriately to new dangers and take advantage of new opportunities in human-dominated environments. I argue that an understanding of animal cognition can be critical for conservation, allowing us to predict and manage animals' responses to environmental change, encourage desirable behaviour and promote the healthy co-existence of humans and wildlife.

Dr Alex Thornton studied biology at Oxford University, and went on to Cambridge University to do a PhD examining how wild meerkat pups learn to forage for themselves. He stayed in Cambridge for a Junior Research Fellowship focusing on the establishment of traditions in meerkat groups. In 2010, after many years wandering around the Kalahari Desert, Alex started a new programme of research closer to home, investigating culture, cognition and collective behaviour in corvids in the UK. Other recent lines of research include work on the cognitive foundations of human cumulative culture and collaborative work on culture in great tits and cognition in Australian magpies. Alex has been based at the University of Exeter's Cornwall campus since 2012.

A sideways look through birds' eyes

Graham Martin, Emeritus Professor, School of Biosciences, University of Birmingham

Sensory Ecology identifies the information that animals use to guide interactions with their environments. The phrase "a bird is a wing guided by an eye", coined almost 80 years ago, was an early attempt to characterise the basic biology of birds from a sensory ecology perspective. Advances in sensory ecology now suggest that birds are better regarded as "a bill guided by an eye". This change of emphasis has important implications for how we generally perceive what birds are and what they do. Work on the sensory ecology of birds has revealed marked interspecific differences in sensory capacities, showing that sensory information is subtly tuned to the demands of different tasks, primarily foraging and predator detection, in different environments. Interspecific generalisations of sensory capacity should be made with great caution. Sensory ecology shows that there are complex trade-offs between different sensory information. It also shows that many key behaviours are

controlled by a paucity of information which is overcome by reliance upon general and specific knowledge of environments. This is particularly exemplified by the sensory ecology of species which exploit the resources of nocturnal and underwater environments. It is now also understood that there are costs, as well as benefits, of particular sensory adaptations. This is clearly demonstrated by the costs of high acuity vision which requires restricted visual fields to avoid imaging the sun upon the retina. Understanding that birds frequently rely upon a paucity of information in the conduct of everyday tasks, the role of cognition in overcoming some of these sensory limitations, and the costs of particular sensory adaptations, all have a role in understanding why species are vulnerable to collisions with apparently obvious obstacles such as power lines and wind turbines. It also explains why some species are vulnerable to entrapment in fishing nets. Lessons from sensory ecology help with the design of mitigations for such events, but they also suggest that the best mitigations may be to manipulate environments to keep birds away from zones where they are vulnerable, rather than assume that they can be warned of dangers.

Professor Graham Martin's research has been into the senses of birds, mainly their vision and hearing, and has always attempted to understand these from the perspective of how sensory information helps birds to carry out different tasks in different environments. He has published papers on more than 60 species, from albatrosses and penguins, to spoonbills and kiwi. He has collaborated and travelled widely, and pondered diverse sensory challenges that birds face in the conduct of different tasks in different habitats, from mudflats and murky waters, to forests, deserts and caves. In recent years he has focused on how understanding bird senses can help to reduce the very high levels of bird deaths that are caused by human artefacts; particularly, wind turbines, power lines, and gill nets. In 2017 his book on *The Sensory Ecology of Birds* was published by Oxford University Press.

Training a rescue serval

Robert Harland, Team Leader of Animal Activities at ZSL London Zoo

Over the course of this talk, the history, management and training of a 10 year old female serval (*Leptailurus serval*) who was confiscated at Heathrow Airport in 2010, will be discussed. I will look in particular at the following points: her history; how pre-zoo management has affected her life; her environmental requirements; her training needs and the training process; and her role as a key animal ambassador for ZSL. Ultimately, I hope to tell the story of an extraordinary animal and chart her progress from rescued kitten to conservation ambassador.

Robert Harland took his first steps into zoo keeping some 20 years ago, and since then has had the good fortune to work with a huge variety of animals from pygmy mice to giraffes, and aye-ayes to aardvarks. He now runs the Animal Activities Section at the Zoo which is responsible for delivering animal demonstrations and a whole host of other engaging live interpretation. Their focus is to connect the public with the animals they house and inform them of the extraordinary work that ZSL does around the globe.

Join us at our next event

Shifting tides: how can small-scale fisheries help address the Sustainable Development Goals?

Tuesday 9 July 2019, 6.00pm – 7.45pm

Small-scale fisheries (SSFs) provide an estimated two-thirds of the world's catch intended for human consumption and support 90% of employment in the fisheries sector. Only recently has the crucial importance of SSFs been recognised. This event will challenge the way we view SSFs and their resources, particularly in developing nations, and highlight how to incorporate values associated with SSFs into policy, ultimately to mobilise global and local communities to better manage and protect marine ecosystems in order to meet the Sustainable Development Goals.



<https://www.zsl.org/science/whats-on/shifting-tides-how-can-small-scale-fisheries-help-address-the-sustainable>

ZSL Library Events

The library will now be open for a monthly talk at **4:45pm before each Science & Conservation Event!** On Tuesday 9th July will be an introduction to the 'special collections' during an 'Art works and Archives' talk. 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 weeks as well! 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 Eleanor Darbey (eleanor.darbey@zsl.org) if you have any queries.