

TUESDAY 13 FEBRUARY 2018

ZSL SCIENCE AND CONSERVATION EVENT

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

AGENDA

Collaborating for conservation in China

Chaired by **John MacKinnon**, Honorary Professor at the Durrell Institute of Conservation Ecology, University of Kent

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Dr Simon Dowell, Science Director, Chester Zoo

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ABSTRACTS

Collaborating for conservation in China

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

Dolphins, gibbons, and giant salamanders: is it possible to save China's threatened biodiversity?

Dr Samuel Turvey, Senior Research Fellow, Institute of Zoology, ZSL

China is a “megadiverse” country containing a substantial portion of global biodiversity (e.g., over 10% of all mammal species), but this biodiversity is now highly threatened by extreme human overpopulation, resource overexploitation and habitat modification, and conservation actions are urgently required. Over recent decades, many Western stakeholders have established collaborative projects with Chinese academics, government agencies, nongovernmental groups, and protected area managers, to try to conduct effective conservation activities for threatened Chinese species. However, these projects have had varying levels of success, and in some cases have failed to prevent species extinctions.

To address continuing threats to Chinese biodiversity, it is imperative to understand factors that have influenced success or failure of previous collaborative conservation initiatives. Effective conservation management requires shared goals from all stakeholders, but sometimes even what is understood by the term “conservation” differs radically. Other key areas of difference include the importance given to *in-situ* versus *ex-situ* actions, and differentiating between wild and captive populations; aiming for population preservation or population recovery; reactive management versus proactive planning; the transparency of evidence and wider lessons used to inform decision-making; and the urgency assigned to conservation interventions.

These issues are illustrated using three conservation case studies: (1) The Yangtze River dolphin or baiji (*Lipotes vexillifer*), an endemic Chinese freshwater cetacean that was declared extinct in 2007 following a multi-decade international conservation collaboration; (2) The Hainan gibbon (*Nomascus hainanus*), which persists as a single population of c.26 individuals within Bawangling National Nature Reserve; and (3) The Chinese giant salamander (*Andrias davidianus*), the world's largest amphibian, which has recently experienced range-wide population collapse associated with intensive overexploitation for the luxury food market. Using these case studies, I assess how collaborative conservation efforts for China's unique biodiversity could become more effective at arresting future declines and recovering populations.

Dr Samuel Turvey has been at ZSL since 2004, and is currently a Senior Research Fellow in ZSL's Institute of Zoology. He studied at the University of Oxford for his undergraduate degree and for his doctorate on Chinese palaeontology, and as of 2018 he has worked in China for 20 years. He is heavily involved with both conservation research and practical conservation project management in China. His research aims to investigate how we can use different lines of scientific evidence to conserve critically endangered species that are reduced to tiny remnant populations. He has been actively involved with conservation programmes for Yangtze cetaceans, giant salamanders and other threatened Chinese biodiversity, and he established and manages ZSL's long-term conservation programme for the Hainan gibbon, the world's rarest mammal.

Community-based conservation and development for nature reserves in Sichuan Province

Dr Simon Dowell, Science Director, Chester Zoo

The moratorium on logging in the upper Yangtze basin in 1998 presented conservationists with a unique opportunity to protect important forest habitats for wildlife. Collaborative research on endemic birds of the region at the time, stimulated by the IUCN action plans for Galliformes, informed the establishment of a series of new protected areas in the Liang Shan area of southern Sichuan province. An alliance between the Sichuan Forest Department and the North of England Zoological Society (Chester Zoo) allowed investment in capacity building and community-based approaches to management alongside wildlife protection and monitoring.

Despite protection from commercial logging, the new reserves continue to be threatened by firewood and plant collection, illegal hunting and general disturbance. People living around the reserves are mostly subsistence farmers with limited incomes, which they supplement by harvesting forest resources. Chester Zoo funding supported initial infrastructure development and training for reserve staff, most of whom were derived from the original forestry workforce. Reserve teams worked with local communities to support activities designed to encourage alternative livelihoods, such as bee keeping and biogas/wood-saving stoves. A monitoring programme for Galliformes in the reserves was set up in 2006 and is providing some indication of the impact of protection on key species, although it has so far proved difficult to link these directly to community-based interventions. This presentation will chart the development of this project from small research-based beginnings and explain how an initial focus on an endangered galliform, the Sichuan partridge *Arborophila rufipectus*, was influential in securing protection for broadleaf forest habitats within the Mountains of Southwest China Biodiversity Hotspot. The challenges of working across local and regional political boundaries and with a variety of stakeholders will be discussed.

Simon Dowell, as Science Director, leads the research, education and conservation outreach work at Chester Zoo. After a DPhil at the University of Oxford Simon embarked upon a career in University teaching and management, first at Liverpool JMU then at Oxford Brookes University. His research programme on the ecology and conservation of threatened birds in the broadleaf forests of Sichuan became a major part of the Chester Zoo's conservation outreach programme in China which Simon helped to coordinate for a number of years. He joined the zoo's director team in 2016.

Snow leopard research and conservation in the mountains of China

Dr Philip Riordan, Head of Conservation Biology, Marwell Zoo and Senior Research Fellow, Beijing Forestry University

Snow leopards occur across over 3 million square kilometres of the mountain ranges of 12 Asian countries. Of these, China is the most important, holding approximately 60% of the global population, which is estimated at fewer than 10,000 individuals. China also shares borders with 10 range countries and much of the snow leopard habitat covers international borders. Marwell Wildlife's Dr Philip Riordan has collaborated with Prof. Shi Kun of Beijing Forestry University's Wildlife Institute (BFU-WI) for over 10 years to understand more about snow leopards in China and enhance conservation efforts. With our partners, Marwell Wildlife is coordinating baseline surveys of snow leopard status across China, and training Chinese teams. We are seeking to understand current and future patterns and determinants of snow leopard distribution in China. Given the limitations of protected areas to safeguard a species with so large a home-range, we are also examining their ability to disperse through particular habitats and identify important dispersal corridors.

Using this continually developing evidence base, Marwell Wildlife are actively providing advice to Chinese government (through the State Forestry Administration - SFA) and other range states through the Global Snow Leopard and Ecosystem Protection Programme (GSLEP), for which Dr Riordan and Prof Shi were inception members. Working with partners, Marwell Wildlife is seeking approaches to deliver transboundary cooperation for snow leopard conservation. We are currently working with teams in Kazakhstan and Kyrgyzstan to cement collaborations with conservationists in China to develop jointly managed projects that maximise mutual benefits and provide range-wide conservation for snow leopard and other species that does not stop at national borders. We are also developing and providing training programmes for protected area and government teams in China, to enhance knowledge gathering across this vast area and engage with local people to foster community-based conservation actions.

Phil Riordan has worked on snow leopard conservation and research since 2007. At University of Oxford, he co-initiated and directed a joint programme in China with Shi Kun at Beijing Forestry University, subsequently steering the programme to cover the snow leopard range across China. He also works with collaborators in Kazakhstan and Kyrgyzstan on transboundary conservation. Phil is Head of Conservation Biology at Marwell Wildlife, Director of Wildlife Without Borders UK, and holds academic positions with Beijing Forestry University and University of Southampton. Phil is also Coordinating Lead Author of the Intergovernmental Panel on Biodiversity and Ecosystem Services Asia-Pacific Regional Assessment.

Save pangolins from the traditional Chinese medicine market in China

Yifu Wang, University of Cambridge

Pangolins are threatened around the world by intense illegal use, and are now the most numerically trafficked animal group globally. China itself is a major end-market for pangolin products, necessitating research on the use of pangolin products in China in order to inform corresponding management as important conservation priority. Pangolin scales constitute an important ingredient in the traditional medicines of many cultures, including traditional Chinese medicine (TCM), and are frequently seized in large quantity. Through interviewing TCM doctors, pharmaceutical shops, and the public (potential consumers) about their understanding and attitudes towards pangolins and pangolin scales, we obtain some basic information on pangolin related TCM market. This allows us to answer important questions, such as "how large is the demand?" and "why do doctors prescribe pangolin

scales?”, which are necessary to address for pangolin conservation. Our finding reveals that the TCM market places a huge and unsustainable demand on pangolin scales, but this demand receives little if any regulation or monitoring. People involved in the TCM market, especially TCM doctors and public, often lack knowledge about pangolins or their conservation. Raising public awareness, collaborating with the traditional medicine community to stop using pangolin scale in TCM, and strengthening law enforcement should be the focuses for reducing demand on pangolin scales in China.

Yifu Wang graduated from McGill University with a First-Class BSc in 2015. She then matriculated as a PhD student at University of Cambridge in the same year. As a Chinese national and conservationist, she cares deeply about biodiversity conservation in China. She has undertaken her fieldwork in two provinces in China, and has primarily used social science approaches to better understand the markets in pangolin products. Key products include pangolin scales and meat which are traded differently along different trading chains.

Conservation of the critically endangered Spoon-billed Sandpiper: a flagship for a flyway

Dr Nigel Clark, Research Associate, British Trust for Ornithology

The Spoon-billed Sandpiper is one of the most endangered migratory birds in the world and was declining at a rate of 26% per year between 2001 and 2009. It breeds on the coast of the Russian Far East, migrating through the Yellow Sea to its wintering grounds which stretch from south China to Myanmar and Bangladesh.

The Jiangsu coast was first identified as a major migration site in 2010 when local birdwatchers undertook the first systematic counts in spring and autumn. Since 2012 conservationists from the BTO, RSPB, WWT and other organisations have been working with a local NGO (Spoon-billed Sandpiper in China), and more recently with Professor Chang Qin and his team from Nanjing Normal University. We have assessed the importance of China for this threatened species, developed the first world population estimate and evaluated the threats to Spoon-billed Sandpipers using the country. In addition we have deployed the world’s smallest satellite transmitters to identify unknown stopover and wintering sites.

Through using the resighting ratio of individually marked birds we estimate the world population to be just over 200 pairs at least 40% of which go through their annual moult in Jiangsu. There are three main threats to waders in China; habitat loss through land claim, encroachment of introduced *Spartina* over the tidal flats and hunting. Discussions at many levels by both UK and Chinese conservationists has led to a moratorium on all future commercial land claim projects by the central government, which came in in January 2018. Getting the importance of *Spartina* encroachment to be recognised has been difficult, but local shell fishermen are now taking the lead in its control in some areas.

The deployment of satellite transmitters has helped identify previously unknown wintering areas in China. On both these sites and others, we have found evidence of illegal hunting using mist nets. Local conservationists have alerted the State forest administration, who have immediately removed the nets and this has greatly reduced their presence in future years.

There is still a lot of work to do in China and elsewhere along the flyway, but the future for Spoon-billed Sandpipers, and other species, looks much brighter than it has for many years.

Nigel Clark undertook his PhD studies on Dunlin (*Calidris alpina*) at Edinburgh University before joining the British Trust for Ornithology in 1987 to work on the effect of the proposed Severn Tidal Power Barrage on birds. He built up a research team which specialised in understanding the effect of developments on birds and the effect of birds on man. Nigel then became Head of Projects developing new areas of work for the BTO. In 2008 he was asked to independently assess if the Spoon-billed Sandpiper was just rare or really declining rapidly towards extinction. Nigel has spent an increasing amount of time trying to save the species and is scientific advisor for the Spoon-billed Sandpiper Task force.

Experiences of WWF in collaborating for conservation in China and opportunities for the future

John Barker, Head of Programmes - India and China, WWF UK

WWF has worked in China since 1980 when it was invited by the government of China to work with them on the conservation of the giant panda. Since then work has expanded to also cover conservation programmes in north east China for tigers and Amur leopards, the Yangtze and more recently snow leopards. In this time we have seen great changes within the political landscape of China moving most recently towards of the expounding of principles of ecological civilisation, green is gold and ecological red lines as central tenets of government policy. The increasing weight of footprint of China both internally and externally on the environment whilst driving towards economic growth has become a major factor in global sustainability. Addressing the drivers of these pressures on both the environment generally and biodiversity in particular has lead WWF to work towards supporting the development of a nationally owned civil society organisation that can play a supporting and influencing role not only with government but the private sector and civil society itself. This requires changes in the relationships with existing conservation partners aiming to increase the scale of impact that can be achieved in conservation goals. WWF therefore has to make additional ambitious approaches to address the large scale drivers of the threats to conservation of the most important ecosystems, habitats and biodiversity that are represented by iconic species such as tigers, snow leopards, giant pandas and finless porpoise.

Chair: John MacKinnon, Honorary Professor at the Durrell Institute of Conservation Ecology, University of Kent

John's career spans 53 years in Africa and Asia including pioneer studies of orangutans and other primates, serving as WWF Representative to Indonesia and developing continent-wide conservation reviews for Africa and Asia. John made news with discovery of the saola and new muntjak species in Vietnam and has been a central figure since 1986 in conservation projects in China. John developed the Masterplan to save the giant panda, completed the biodiversity review of China and served for 14 years as a high level advisor to the Chinese government on biodiversity issues. He was involved in several GEF projects, the large EU-China Biodiversity Programme and is author of 30 books. His '*Handbook on Chinese Birds*' has helped stimulate a remarkable domestic growth of birding.

Ecosystems under the microscope: why microbes matter for conservation

Tuesday 13 March 2018, 6pm - 7.45pm

ZSL Science and Conservation Event

Microscopic organisms are found everywhere on Earth: in soils, oceans, and living in association with animal and plant hosts. This event will explore how understanding these complex microbial communities, known as the 'microbiome', reveals how they play an essential role in maintaining the health of both individual species and entire ecosystems.



FIND OUT MORE www.zsl.org/science/whats-on/ecosystems-under-the-microscope-why-microbes-matter-for-conservation

CSI of the Sea: online post-mortem event

Monday 12 March 2018, 6pm GMT

Online Live-streamed Event

Every year around 600 porpoises, dolphins and whales strand around the UK coast. Why do these stranding events occur and what role does bycatch (accidental entanglement in fishing gear) play? Following the success of previous events at the Zoological Society of London, join us for a very special online-only event as you join us live behind-the-scenes of ZSL for the opportunity to see a cetacean post-mortem, revealing the important work of the [Cetacean Strandings Investigation Programme \(CSIP\)](#).



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WATCH LIVE ONLINE www.zsl.org/csiofthesea

Cetacean by-catch: casting the net for solutions

Tuesday 10 April 2018, 6pm - 7.45pm

ZSL Science and Conservation Event

By-catch' is defined as the accidental entanglement of non-target species in fishing gear and is reported as a principal cause of strandings for cetaceans. Join CSIP experts to explore what pathological data collected from over 3,000 cetacean post-mortems conducted by the team to date can tell us about the threat of by-catch, and how future policy could potentially reduce its impacts on endangered cetacean populations around our shores.



© Common Dolphin, Porthbear beach © Joana Doyle

FIND OUT MORE www.zsl.org/science/whats-on/cetacean-by-catch-casting-the-net-for-solutions