SCIENCE AND CONSERVATION EVENTS

THE IMPACT OF LOCKDOWNS ON HUMAN-WILDLIFE INTERACTIONS

© Heather Koldewey

DATE
Tuesday 13 February 2024

TIME
6pm – 7:30pm

LOCATION
Huxley Lecture Theatre, ZSL

Free to attend
Registration required

AGENDA

Dr Claire Collins
Institute of Zoology, ZSL
Changes in illegal fishing dynamics during the COVID-19 pandemic

Dr David March
Universitat de València
Monitoring marine movements: the impact of COVID-19 on ship-based activities

Professor Christian Rutz
University of St Andrews
From pandemic lockdowns to sustainable human-wildlife coexistence: the transformative potential of global-scale animal tracking

Dr Marlee Tucker
Radboud University
How did terrestrial mammals respond to the COVID-19 lockdowns?

Chaired by **Dr Tom B Letessier**
Institute of Zoology, ZSL

ABSTRACTS

Changes in illegal fishing dynamics during the COVID-19 pandemic

Dr Claire Collins, Institute of Zoology, ZSL

COVID-19 altered activity in both terrestrial and marine protected areas (MPAs) globally due to altered socio-economic context and priorities for both resource users and area managers. Resultant rises in illegal fishing activity in large-scale MPAs threatens their ability to contribute towards progress in marine conservation and fisheries sustainability. Within Chagos MPA, a no-take MPA located in the Indian Ocean, data from enforcement suggests monthly illegal fishing activity peaked in 2022 at 19 times the average from 2010 to 2020. Vessels were primarily from India, as opposed to Sri Lankan which was the predominant vessel flag within the MPA prior to COVID-19.

We consider how current management strategies, including using satellite technologies and sanctions, have impacted on resilience to changes in illegal fishing activity. Further, we discuss how participatory and formal agreements between countries can work to reduce illegal fishing focusing on the use of a bilateral agreement between Sri Lankan and British authorities in Chagos MPA. Using Chagos MPA as a case study, we identify how MPA management needs to both predict and adapt to changes in socio-economic context of surrounding countries as well as socio-ecological shocks such as COVID.

Claire is a Postdoctoral Researcher at ZSL and University of Exeter. Her research focuses on understanding human dimensions of socioecological systems, with previous foci including social importance of shark fisheries, drivers of fisher spatial behaviour and understanding perceptions of conservation and management policies for improving their effectiveness. Claire has worked across research, government and consultancy bodies and is particularly interested in how collaborative action can enhance compliance with conservation and management policies, to enhance their long-term success.

Tracking the global reduction of marine traffic during the COVID-19 pandemic

Dr David March, Universitat de València

Ocean observing systems are revolutionizing marine science by offering unprecedented opportunities to simultaneously monitor the state of the seas, their biodiversity and maritime activities in real-time. In this talk, David will explore the transformative potential of advanced technologies, such as drones, satellites, numerical ocean models, and the Automated Identification System (AIS). These instruments are pivotal for tracking ship-based activities and for assessing the anthropogenic pressures on marine ecosystems. The deployment of such systems generates vast amounts of heterogeneous data at unprecedented rates, requiring sophisticated computational tools for analysis and insight derivation.

This presentation will delve into the recent advancements and ongoing developments within marine ecology and ocean conservation. It will specifically discuss how geospatial tools and emerging marine technologies have been employed to monitor

shifts in maritime activities during the COVID-19 pandemic. The talk will conclude with a prospective outlook on the future of ocean observing systems, highlighting the next generation of technological innovation and the ongoing need for interdisciplinary collaboration in addressing the complexities of marine conservation.

David is a Distinguished Researcher and the Team Lead of the Spatial Marine Lab at the University of Valencia, and an Honorary Lecturer at the University of Exeter. His research employs integrated approaches to address animal-human interactions with a focus on spatial ecology, movement analysis, and marine spatial planning. With extensive expertise in ocean observing systems and new marine technologies, Dr. March has significantly advanced the monitoring of human pressures and the conservation of diverse marine species. His dedication to academia extends to mentoring students and teaching at the University of Valencia, where he shapes future marine ecologists.

From pandemic lockdowns to sustainable human–wildlife coexistence: the transformative potential of global-scale animal tracking

Professor Christian Rutz, University of St Andrews

How do humans and their transport networks affect the behaviour of wild animals? In early 2020, a major tragedy created an opportunity to find out. As countries went into lockdown, to curb the spread of COVID-19, city centres became deserted, nature reserves closed their gates, and highways and shipping corridors fell silent. Professor Christian Rutz FRSE and his colleagues recognised the importance of investigating how wildlife responded to this sudden reduction in human activity – or 'anthropause', as they decided to call it – and quickly identified an effective method for remote monitoring. Prior to the pandemic, fieldworkers had fitted thousands of animals worldwide with tiny tracking devices, as part of their routine research and conservation work – and these 'bio-loggers' kept transmitting movement data via satellite uplink. Whilst the world was in turmoil, Rutz's team published an urgent call for collaboration, encouraging colleagues to share their animal-tracking data for joint analyses (https://doi.org/10.1038/s41559-020-1237-z).

This led to the launch of the COVID-19 Bio-Logging Initiative – a UN-endorsed global research consortium of over 600 partners, which amassed a staggering 1 billion satellite fixes for ~13,000 tagged animals, across ~200 species. Tapping into this data goldmine has not only provided unprecedented insights into human–wildlife interactions, but has also revealed major knowledge gaps. Most importantly, a surprising lack of animal-tracking data for human-modified habitats is currently hampering efforts to mitigate the forecasted impacts of global-scale urban expansion and land conversion.

Rutz's vision is to respond to this urgent research need by launching the Urban Exploration Project – a network of collaborating teams that will track wildlife across gradients of urbanization and human disturbance worldwide. The largest animal-tracking study ever conducted, this new initiative will drive transformative advances in conservation management, environmental planning and policy making, revealing new pathways for building a future where humans and wildlife can coexist.

Christian has broad interests in animal behaviour and conservation, advanced wildlife tracking technologies ('bio-logging'), and policy making. A keen fieldworker, his research

is driven by a deep curiosity about the natural world and a steadfast commitment to its lasting protection. Rutz is a National Geographic Explorer, Founding President of the International Bio-Logging Society, and Co-Founder and Chair of the COVID-19 Bio-Logging Initiative. He has received numerous honours, including a Rhodes Scholarship at Oxford, a Radcliffe Fellowship at Harvard, and most recently, an Explorers Club 50 Award.

How Did Terrestrial Mammals Respond to the COVID-19 Lockdowns?

Dr Marlee Tucker, Radboud University

The global COVID-19 pandemic had a significant impact on human behaviour, with many governments implementing lockdown strategies to prevent the spread of the disease. These tragic events provided a unique opportunity to examine how humans impact biodiversity, specifically animal behaviour. I will present some recent work investigating how terrestrial mammals have responded to the initial lockdowns in 2020. We combined GPS data from 43 different species across 5 continents with species traits, environmental data and lockdown strictness. Using this data, we compared movement and habitat use during the 2020 lockdowns with a baseline period in 2019. During the lockdowns, we found an average decline in hourly movements of 12%, indicating reduced disturbance effects from humans. On a 10-day time scale, animals travelled on average 73% farther under strict lockdown conditions, suggesting increased landscape permeability with decreased human presence.

In addition, we found evidence of reduced road avoidance during the lockdowns, where locations of animals were on average 36% closer to roads in areas of high human impact. Overall, lockdown conditions rapidly altered the spatial behaviour of terrestrial mammals and highlight the significant impact of human activities on wildlife worldwide.

Marlee *is an Assistant Professor in the Department of Environmental Science at Radboud University, the Netherlands. She is interested in large scale patterns in ecology, biogeography and evolution that can aid our understanding of species vulnerability to changing environments that can be utilised for conservation. Her research encompasses macroecological questions related to allometric scaling, predator–prey interactions and animal behaviour. Her recent projects combine macroecology and movement ecology to examine how humans have altered animal behaviour and the consequences of these changes for populations and ecosystem processes.*

EVENT FORMAT

- This event will take place in the Huxley Lecture Theatre and will be filmed and published on our Science and Conservation YouTube channel (zsl.org/IOZYouTube). Please be aware, by attending you consent to being recorded during the Q&A session.
- Seats are allocated on a first-come, first-served basis.
- Before attending, please read our Code of Conduct found here.
- The event will run from 6-7:30pm
- It will consist of short presentations from the speakers, followed by a Q&A and panel sessions.
- To submit a question to a speaker prior to the event, please send it to scientific.events@zsl.org. Please be aware we may not be able to answer all questions.
- There is no charge for this event, but registration is required.

COMING UP…

The Science of Saving Species: Using animal care sciences to aid species recovery

23 April 2024, 6-7:30pm
In person; Huxley Lecture Theatre, ZSL

Zoos have the potential to play an important role in wildlife conservation and species recovery, particularly for species whose natural habitats have been so altered or degraded that they can no longer support them.

This event will explore how understanding health, welfare, behavioural and nutritional needs of animals can aid species recovery programs and help bring species back from the brink of extinction.

www.zsl.org/science/whats-on

© Nigel Kuhn

STAY IN TOUCH

- Contact scientific.events@zsl.org for any event related enquiries.
- For press enquiries, contact the **ZSL Press Office**: press.office@zsl.org.
- Listen to our **ZSL Wild Science podcast** here.
- For more information about how to join the **ZSL Fellowship programme**, click here.
- Sign up here to receive email updates about forthcoming ZSL and Conservation Events.
- Read the latest science **blog posts** here.
- Follow us on **Twitter** @ZSLScience to hear about new publications, upcoming events and podcast episodes.
- Follow us on **Facebook** @ZSLScienceAndConservation to receive notifications about new events.
- To catch up on our previous events, you can find them on our YouTube channel, or on our Events page.