

[biodiverseproject.org](http://biodiverseproject.org)

@BioDiverseFest



# PROGRAMME

#BioDiverse21



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# ACKNOWLEDGEMENTS

## Organising Committee

The Bio-Diverse Project is indebted to all the volunteers who have given their time and expertise towards organising the Bio-Diverse Festival, including Tanith Hackney, Jasmine Trinder, Rebecca Ford, Susmita Aown, Aimée Brownlow, Philippa Steinberg, Eilidh Scott, and Reuben Fakoya-Brooks.

## Sponsors

The Bio-Diverse Festival is sponsored by the Woodland Trust ([www.woodlandtrust.org.uk/](http://www.woodlandtrust.org.uk/)) and the British Ecological Society ([www.britishecologicalsociety.org/](http://www.britishecologicalsociety.org/)).

The Woodland Trust is committed to ensuring equality, diversity and inclusivity in the ground-breaking woodland conservation research they fund. They aim to increase the diversity of scientists in the scientific community, by continuing to reduce barriers in their research funding application process. Woodland Trust's research programme focuses on four major themes in relation to the conservation of trees and woods: Woodland extent, condition and wildlife value; Benefits for people; Threats and drivers of change; and Restoration, creation and management.

If you need research funding in one of these areas, then apply for the 2022 Woodland Trust Conservation Research Grant Call.

Contact the Woodland Trust to be notified when the grant call is open: [research@woodlandtrust.org.uk](mailto:research@woodlandtrust.org.uk)



# GENERAL INFORMATION

## Why do we need the Bio-Diverse Festival?

Racial and ethnic minorities, Indigenous people, women, carers/caregivers, LGBTQIA+, and disabled people are underrepresented and underserved in biology and conservation. Not only must this change on ethical grounds, but diversity and inclusivity improve science and conservation work. Diversity, inclusion, and role models are key to increase underrepresented and minority group recruitment and retention within scientific and academic disciplines. The Bio-Diverse Project aims to fill the gap in representation and contribute to the necessary change we are beginning to see within academia and conservation.

Founded in June 2020, the Bio-Diverse Festival is a scientific conference full of fascinating and topical science that celebrates and highlights minority and underrepresented scientists in an inclusive, safe, and non-discriminatory environment. The Bio-Diverse Festival is an inclusive platform for underrepresented and minority biologists and conservationists to share their work, inspire a new generation of scientists, network, and discuss topical issues in their field. This online event opens the conversation about the prevalence of racism, homophobia/transphobia, sexism, and ableism in this field, how they often intersect, and how we can solve them together. This festival welcomes anyone with an interest or career in biology or conservation.

### Our Vision

Our vision is to create an inclusive, welcoming space for underrepresented and minority groups in biology and conservation. Our ultimate goal is to no longer host the Bio-Diverse Festival. Why? Because it'll no longer be needed. Every science conference will be inclusive, accessible, host a range of perspectives and voices, and represent a diverse group of individuals.

### Accessibility

This event is free to attend. All recorded videos will have captions, and transcripts will be available on the website. Live events will be recorded and have live transcription. Social media posts are accessible through Alt text, and we capitalise in hashtags. This event is online so it can be accessed from anywhere with internet access and live events will be recorded available after live streaming.

Please get in touch if you are concerned about accessing the event.

**Discord will be used to communicate with the speakers and attendees, and to provide the links to each event. Please register at [biodiverseproject.org/register](https://biodiverseproject.org/register) to get access.**



# TIMETABLE

Thursday 15<sup>th</sup> October

**9:00-9:15 BST – Welcome**

**10:00-11:15 BST – Thematic Session: Conservation & Climate**

**10:00 – Bethany Copsey:** *Learning through peatlands.*

**10:15 – Reagan Pearce:** *Species reintroductions as conservation tools: An extinct fish and lowland UK rivers.*

**10:30 – Hannah King:** *Mammal grazing preferences in a calcareous grassland under different rainfall conditions.*

**10:45 – Dr Daniele Visoni:** *Solar geoengineering: what do we know, what do we need to know, and should we know it?*

**11:00 – Justin Luong:** *Restoring endangered species: Lessons learned from *Lupinus nipomensis* reintroduction five years later.*

**14:00-15:00 BST – Workshop: Mentoring disabled scientists, with Disabled In Higher Ed**

**16:00-17:00 BST – Thematic Session: Evolution & Genetics**

**16:00 – Katherine Usher:** *A grape talk - grapevine viruses.*

**16:15 – Dr Monica Mowery:** *Behavioural shifts during widow spider invasion: from dispersal to parasitoid host choice.*

**16:30 – Frane Babarovic:** *Evolutionary dynamics of pigmentary grey and non-iridescent structural colours in Tanagers (family: Thraupidae).*

**16:45 – Laura Segura Hernández:** *Understanding the use and function of the ram's horn organs in *Dactylochelifera silvestris* (Pseudoscorpiones: Cheliferidae).*

# TIMETABLE

## Friday 15<sup>th</sup> October

### 10:00-11:15 BST – Thematic Session: Ecology & Biodiversity

**10:00 – Gavin Campbell:** *Notonecta indica: Life history and the biological control of Aedes aegypti.*

**10:15 – Emma Hughes:** *The homogenisation of avian morphological diversity.*

**10:30 – Scott Xavi Gudrich:** *Talking the Coast - a transdisciplinary journey.*

**10:45 – Kevin Pham:** *Light pollution: The effects of artificial light at night (ALAN) on physiology, behavior, and reproduction.*

**11:00 – Nolitha Skenjana:** *The effectiveness of the brown locust (*Locustana pardalina*) management policy of South Africa.*

### 13:00-14:00 BST – Keynote: Gabriela Fleury

*Lions! At the Disco: A Human-Wildlife Interactions Career in Eastern and Southern Africa*

### 15:30-17:00 BST – Diverse Careers

BES REED Network, Woodland Trust, Butterfly Conservation, UK Centre for Ecology & Hydrology, and the Royal Entomological Society.

## Saturday 16<sup>th</sup> October

### 10:00-11:15 BST – Day in the Life Vlogs with REED Network

**10:00 – Kalyani Lodhia**

**10:15 – Reuben Fakoya-Brooks**

**10:30 – Bushra Abu-Helil**

**10:45 – Arildo Dias**

**11:00 – Jehan Jeffrie**

### 16:00-17:00 BST – Panel Discussion: LGBTQIA+ in the Field and Workplace

### 17:30-18:30 BST – Keynote: Dr Jessica Hernandez

*Indigenous Science and Biodiversity.*

# KEYNOTE SPEAKER

Friday 15<sup>th</sup> October | 13:00-14:00 BST

## Gabriela Fleury



Gabi Fleury (they/them) is a conservation technologist and author who studies ways for humans and wild carnivores to co-exist in Sub-Saharan Africa. They are passionate about intersectional conservation and conservation justice, and are fascinated by the complexity of human-wildlife interactions research. Fleury led a research team in Namibia to test ways to reduce cheetah-livestock conflict, designed a picture-only video game to teach Mozambican villagers different ways to prevent livestock losses, and will soon be testing scent deterrents to safely keep African wild dogs off commercial farms. Proud to be a Black, nonbinary scientist, they are also actively engaged in science communication and mentorship of underrepresented life scientists.

### ***Lions! At the Disco: A Human-Wildlife Interactions Career in Eastern and Southern Africa***

This presentation by conservation biologist Gabi Fleury will focus on the journey they took to build their career in international conservation science as an 'interspecies diplomat', a biologist and technologist who focuses mainly on human-wildlife interactions research and human-wildlife conflict mitigation. The work they do to mitigate human-wildlife conflict draws on anthropology, human psychology, animal behavioral ecology, and spatial science, but it also can involve aspects of engineering and environmental education. They will give an introduction to human-wildlife interactions work and some of the complexities inherent in that research, as well as touch upon several of the studies and projects they have worked on in South Africa, Kenya, Namibia, and Mozambique. Finally, they will discuss their career trajectory as a young underrepresented scientist, and offer advice for aspiring conservationists as to how to enter this exciting yet challenging field.

# KEYNOTE SPEAKER

Saturday 16<sup>th</sup> October | 17:30-18:30 BST

## Dr Jessica Hernandez



Dr. Jessica Hernandez (she/her) is a transnational Indigenous scholar, scientist, and community advocate based in the Pacific Northwest. She has an interdisciplinary academic background ranging from marine sciences to forestry. Her work is grounded in her Indigenous cultures and ways of knowing. She advocates for climate, energy, and environmental justice through her scientific and community work and strongly believes that Indigenous sciences can heal our Indigenous lands. Her book, *Fresh Banana Leaves: Healing Indigenous Landscapes through Indigenous Science*, is forthcoming this Spring '22.

### *Indigenous Science & Biodiversity*

As we continue to experience the impacts of climate change, Indigenous communities continue to lead the environmental and climate justice movements to protect our Mother earth. In this talk, Indigenous scientist, Dr. Jessica Hernandez will present how Indigenous science has maintained 80% of the world's biodiversity. This talk aims to continue the conversations that have taken place among Indigenous scientists about the importance of including Indigenous ways of knowing or science within the environmental discourse. It is time we start acknowledging the importance of Indigenous science that has been sustained since time immemorial among Indigenous communities across the globe.



# THEMATIC SESSION: CONSERVATION & CLIMATE

Thursday 14<sup>th</sup> October | 10:00-11:15 BST

Bethany Copsey (she/her): *Learning through Peatlands*

RE-PEAT

Peatlands are wonderful spaces. They are experts in liminality, at operating in the in-between. They are not quite land, not quite water; not quite dead, not quite alive. They are spaces of transition, of transformation, of transhumance. They form the space between the underworld and the overworld. In their very being they challenge notions our society holds on binaries, categories and time. This talk will briefly delve into this realm and ask:

- what can be learnt from and through the peatland?
- how can these lessons be applied to the conservation field?

Reagan Pearce (she/her): *Species Reintroductions as Conservation Tools: An Extinct Fish and Lowland UK Rivers*

PhD Student, University College London

What do the beaver, the otter, and potentially an extinct fish have in common? Well, if reintroduced to river habitats, they have the ability to improve the physical quality and biodiversity across multiple taxa. Rivers have been continually degraded throughout history due to anthropogenic pressures: pollution, straightening, dredging, to name a few. Since the 1980s in the UK, the practice of river restoration – defined as any actions that aim to restore the natural state and function of a river – has been increasing. Recent analysis suggest that these actions have focused on restoration of the physical system (e.g., flow types and longitudinal connectivity); however, this has had very little effect on improving biodiversity across multiple taxa (i.e., fish, macrophytes, invertebrates). To improve the biodiversity and overall ecosystem health of UK rivers, the ecological integrity of a system also needs to be supported, protected, and restored as some systems cannot recover alone with persisting human pressures. This talk will look at how species reintroductions can be used as a conservation tool, how a strategic species reintroduction can benefit the wider river ecosystem, and the potential pitfalls that come with this kind of action. By looking at a case study of the extinct burbot (*Lota lota*) in lowland rivers in eastern England, a case can be made for the advantages of species reintroductions as conservations tools that can guide river restoration activities for the benefit of the wider river ecosystem.

Hannah King (she/her): *Mammal grazing preferences in a calcareous grassland under different rainfall conditions.*

Masters student, University of Oxford

Under a changing climate, many terrestrial ecosystems are becoming exposed to drought or increased rainfall. The Drought-Net global experiment is investigating the sensitivity of plant communities to different rainfall conditions. At the RainDrop site, we have collected six years of calcareous grassland plant biodiversity data. We expect legumes to be more sensitive to drought and irrigation than other grassland plants and mammals to display a grazing preference towards plots with a greater abundance of legumes. Here we use camera traps to investigate whether mammal grazing preference exists between different rainfall treatments. Although previous studies have tested legume rainfall sensitivity and herbivore preference for legumes, we use a long-term study to test how prolonged drought and irrigation impacts herbivory indirectly. Grazers have functional importance in terrestrial ecosystems, delaying succession and altering soil nutrient content. Our investigation will help predict how changing rainfall conditions may impact the future functioning of grassland ecosystems.

Dr Daniele Visoni (he/him): *Solar geoengineering: what do we know, what do we need to know, and should we know it?*

Climate Modeler & Postdoctoral Research Fellow, Cornell University

Climate change is already threatening communities and ecosystems around the world, and it's not bound to get better anytime soon. The scale of reductions in emissions in all sectors that would be required to keep temperatures well below 2 °C is way larger, and should be way faster, than what almost all countries seem determined to even pledge internally. We know that future impacts will scale with the amount of warming, and therefore that every tenth of a degree avoided implies suffering, costs and losses avoided. With this in mind, is there something that may be done, temporarily, to keep temperatures below thresholds we might consider as "safe" while emission mitigation happens? Enter the concept of "solar geoengineering": the deliberate modification of the climate achieved through a reduction in the amount of solar radiation incoming at the surface. Some techniques have been proposed that might work, mostly derived from observing analogues in the real world, such as volcanic eruptions (that inject sulfate particles at high altitudes) or ship tracks (that sometimes produce low-level, bright clouds). These techniques are not to be considered in place of mitigation, but as a temporary help: however, large questions remain over their feasibility, uncertainties, and risks. Risks that may not only be physical in nature, but also societal, ethical and political: will the concept of solar geoengineering deter mitigation? Can it ever be considered safe? And what do we need to know before we can make those determinations?

Justin Luong (he/him): *Restoring endangered species: Lessons learned from Lupinus nipomensis reintroduction five years later*

PhD Candidate, University of California Santa Cruz

Biodiversity, species, and land conservation have become increasingly important as the United Nations places further emphasis restoration by announcing the UN Decade on Restoration or global initiatives such as “30 by 30” introduced by the Natural Resources Defense Council. Endangered species reintroductions often fail due to a lack of detailed habitat and natural history knowledge of the species of interest. Limited funds often prevent practitioners from implementing long-term monitoring programs to track success reintroduced endangered plant populations. However, long-term monitoring is needed to understand the interannual dynamics of populations of sensitive species as well as potential microhabitat preferences that may facilitate reintroduction. To better understand endangered species reintroductions, we set up field experiment in 2016 selecting for microhabitats in a protected coastal back dune in San Luis Obispo, CA, USA. We selected different aspect and topographies known to be related to soil moisture and organic soil content and provided caging to assess the impacts of herbivory. We found that both biotic and abiotic factors played strong roles in survival and seed output immediately after reintroductions and five years later. *Lupinus nipomensis* was found to prefer microhabitats that were moister, less exposed and had greater soil organic content. Caging was especially important for seed output in the immediate years after reintroduction, but less important in later years. With GIS we found the suitable area based on tested microhabitat conditions was only present for about 10% of the entire preserve, indicating that careful selection of reintroduction sites can bolster success.

# THEMATIC SESSION: EVOLUTION & GENETICS

Thursday 14<sup>th</sup> October | 16:00-17:00 BST

Katherine Usher (she/her): *A Grape Talk - Grapevine Viruses*

MSc Candidate, Stellenbosch University

Viruses are known to wreak havoc, but not only to humans. My work with Grapevine Fleck virus gives farmers insight into how to monitor their grapevines for infections, and to be able to care for them better. Viruses are microscopic particles that can cause diseases in humans, animals, and plants too. These viral particles infect their hosts, and multiply. Some viruses do not cause a lot of harm to their hosts, but other viruses can bring a number of problems, which can be very damaging. By using Next Generation Sequencing (NGS), I am able to find South African variants of Grapevine Fleck virus. With this data I can then test for the presence of these infections using a combination of ELISA tests and Polymerase Chain Reaction (PCR). Categorizing variants is no help unless we can properly diagnose infections. Therefore, the validation of ELISA tests has been performed, where it was confirmed that the ELISA in use can detect South African variants, when the optimal time for testing is and the optimal tissue for testing. Using these techniques, we can discover new viruses in the plants, learn what they are made of, and gain more knowledge about them. This helps us keep track of how the viruses may spread, what effects they could have on the plants and fruit, and how we might treat the diseases they bring about.

Dr Monica Mowery (she/her): *Behavioural shifts during widow spider invasion: from dispersal to parasitoid host choice*

Postdoctoral Fellow, Ben-Gurion University of the Negev

Behaviours can affect and shift during a biological invasion, either of a species as it establishes and spreads, or of predators, prey, and parasites that interact with the invasive species. We test these behavioural shifts in the invasive brown widow spider, *Latrodectus geometricus*, likely native to South Africa with established populations around the world. We examined dispersal across eight invasive populations of the brown widow spider in the United States and Israel. We found more frequent and faster dispersal in more recently established populations in Israel, but not the United States. In addition to investigating shifts in spider behaviours related to invasion success, we further studied the interactions between two widow spiders (*L. geometricus*, and *Latrodectus pallidus*, native to the Middle East), their egg sacs, and an egg sac parasitoid wasp, *Philolema latrodecti* (Eurytomidae). In no-choice tests, we found that wasps were more likely to parasitize native white widow egg sacs and oviposited longer compared to invasive brown widow egg sacs. In choice tests, parasitoids were more likely to approach native white widow webs. When we compared parasitoid fitness between hosts, we found more, larger wasps emerged from the native white widow egg sacs compared to invasive brown widow egg sacs, indicating a fitness advantage of parasitizing the native species. Our results suggest that parasitoid behaviour and host preference may differentially affect native and invasive species. Overall, the combination of increased dispersal and reduced parasitism of brown widow spiders' egg sacs may contribute to the species' global invasion success.



Frane Babarovic (he/him): *Evolutionary dynamics of pigmentary grey and non-iridescent structural colours in Tanagers (family: Thraupidae)*

PhD Student, University of Sheffield

Birds are one of the most colourful animals in the world and there are multiple ways by which they achieve this feature. Mechanisms of their colour production range from pigmentary (pigment deposition) to structural (nanostructural arrangements), or the combination of both. Despite the huge breadth of colour gamut, basic components of feathers (keratin, air) plus pigments in pigmentary colours are involved in all of them. It has been shown that in some instances, colour evolution between pigmentary and structural colours can proceed by rearrangement of the nano-structural elements of feathers. Here, we investigated evolutionary relation on the macroevolutionary scale between pigmentary grey and non-iridescent structural blue in clade Thraupidae and have suggested a potential transition state – slate. We used digitally calibrated images of bird to quantify colour and determine the distinctiveness of slate colour in colour space. Following, we identify the most likely pathway for the evolution of the colour blue: from grey via slate colour. Our research reveals the new pathway in the evolution of blue colour.

Laura Segura Hernández (she/her): *Understanding the use and function of the ram's horn organs in *Dactylochelifer silvestris* (Pseudoscorpiones: Cheliferidae)*

PhD Student, University of Nebraska-Lincoln

Pseudoscorpions are a small and enigmatic group of arachnids. Most research so far has focused on systematics and taxonomy of the group with far fewer studies focusing on their very interesting behaviors. Patterns of reproductive behavior, for example, have been noted among the different families but have only been thoroughly described for a limited number of species. In particular, it has been described that males in the family Cheliferidae have a set of specialized organs – the ram's horn organs – that are used during mating, but detailed observations of their use are scarce. In this presentation, I describe and show footage of how these organs are used during courtship and mating of the cheliferid *Dactylochelifer silvestris*. I also discuss proposed hypotheses for the possible function of these organs, and the next steps to test such hypotheses.

# THEMATIC SESSION: ECOLOGY & BIODIVERSITY

Friday 15<sup>th</sup> October | 10:00-11:15 BST

Gavin Campbell (he/him): *Notonecta indica*: Life history and the biological control of *Aedes aegypti*

PhD student, University of West Indies & Founder, Dragonfly Consultant

Mosquitoes are among the deadliest animals on Earth, responsible for hundreds of thousands of deaths each year. Aquatic predators of mosquitoes are numerous, but quantification of their mosquito suppression ability remains limited. To aid in this, I assessed the mosquito suppression ability of *Notonecta indica* (Notonectidae) throughout its life history. This also added to the sparse data available on the life history of notonectids. Each day, eggs of *N. indica* were isolated and followed through to hatching. Once hatched, nymphs were fed larvae of *Aedes aegypti* mosquitoes. Selected individuals were isolated in 0.5 L of water and supplied with L4 mosquito larvae at a stocking density of 200 larvae L<sup>-1</sup>. The number of live larvae or pupae present after 24 hours was determined and treatments were refreshed with larvae each day for a minimum of 3 days per notonectid. Adults were also supplied with greater densities of L4 mosquito larvae to investigate the effect of larval density on mosquito suppression. The median duration of the developmental stages of *N. indica* was 33.5 days, with mortality highest in the first and second instars. Mosquito suppression increased throughout development, with an adult notonectid consuming an average of 39 mosquito larvae daily at a density of 200 mosquito larvae L<sup>-1</sup>. Adult notonectids at densities of 400 and 800 mosquito larvae L<sup>-1</sup> consumed an average of 85 and 118 larvae daily. Quantification of this manner facilitates more accurate valuation of the ecosystem services provided by the species of temporary and perennial aquatic environments.

Emma Hughes (she/her): *The homogenisation of avian morphological diversity*

PhD Student, University of Sheffield

Biodiversity is facing an extinction crisis, but little is known about the loss of species morphological diversity at a global scale, despite the potential reduction of ecological strategies and ecosystem functioning. Using a comprehensive set of continuous morphological traits extracted from museum collections of 8455 bird species, including geometric morphometric beak shape data, we find a clear impact of morphological homogenisation across the bird class. Bird species become more similar to each other in terms of their morphology when losing the most threatened species. Across space, we find that most regions are expected to lose morphological diversity at a greater rate than predicted by species loss alone, with the most imperilled regions found in East Asia, particularly the Himalayan uplands and foothills. This pattern is muted slightly when considering morphological homogenisation across major biomes. Notably, the spread of values for tropical moist forests is greatest for any biome, indicating that some tropical rainforests are

at particular risk of morphological homogenisation, whilst others are less so. These findings imply that geographical location as well as major habitat type are important. We recommend the inclusion of morphological diversity as an additional biodiversity facet alongside species richness when planning conservation objectives.

**Scott Xavi Gudrich (he/him): *Talking the Coast - a transdisciplinary journey***

Director, Plover Rovers

Bringing together the scientific marine community with coastal communities, we aim to increase Ocean Literacy and be part of the transformation of our relationship with our seas and coasts. We emphasise person-to-person interaction: Most of our events are informal guided walks where a marine scientist takes a group out along the coast, talking about their research and how it relates to local people as well as its place in the bigger picture. With this approach, we demystify science, making it more accessible. All events are free which further aids accessibility. We work with local artists and conservation groups. This feeds into our 4-level approach to enhancing ocean literacy:

- Science Communication: Present relevant science focussing on active dialogue between scientists and members of coastal communities, enabling conversations with transformative power for both sides.
- Art and Emotion: Art aids science communication by providing both an active and immersive “discovering nature” experience as well as enhanced emotional connectivity to the natural world
- Activism: A direct pathway from an informative setting to active engagement consolidates the acquired theoretical knowledge and builds a sustained connection to the natural environment
- Heritage and Storytelling: Collect stories from local people to explore and understand their connection to the sea

Running a project with no budget creates a special kind of beauty: The absence of money frees up creativity. We invite our volunteers to add their vision to our mission, we experiment, we value the process, we learn from each other constantly and we have fun!

**Kevin Pham (he/him): *Light Pollution: The Effects of Artificial Light at Night (ALAN) on Physiology, Behavior, and Reproduction***

Graduate Research Assistant/PhD Student, Auburn University

In the past decade, artificial light at night (ALAN) has become a pervasive environmental pollutant/stressor altering natural ecosystems, both terrestrial and marine. ALAN is defined as night-time disturbance caused from lighting sources such as LEDs and fluorescents, that alter the circadian rhythm. The circadian rhythm is a highly regulated 24-hour “clock” that synchronizes different hormones to coordinate physical, mental, and behavioral activities in the individual. ALAN exposure has been linked to alter this circadian rhythm, impacting hormone profiles, immune function, human-health, physiology, and behavior. This dysfunction can potentially accumulate damage variables in the organism, leading to detrimental diseases or lower reproductive success, otherwise known as fitness, that impact health and conservation efforts. Research surrounding ALAN is gaining momentum; however, studies have not shown the mechanistic underpinning to the physiological, behavioral, and reproductive consequences seen in different species. The main hypothesis is that melatonin, a powerful antioxidant and regulator to the sleep-wake cycle, is suppressed due to ALAN, initiating a physiological cascade leading to accumulation of deleterious variables observed

in laboratory studies. Whether these damage variables can be repaired is up to the organismal and cellular response to the magnitude and duration of the stressor. My research hopes to elucidate these damage variables, such as oxidative damage and DNA damage, caused from ALAN and how melatonin can mitigate these damages to ameliorate health or improve reproductive capability. Implications from this research can improve conservation efforts to vulnerable ecosystems exposed to ALAN, and clarify health-related detriments.

**Nolitha Skenjana (she/her): *The effectiveness of the brown locust (*Locustana pardalina*) management policy of South Africa***

Entomologist, Eastern Cape Department of Rural Development and Agrarian Reform

The brown locust, *Locustana pardalina*, is a known sporadic pest of pastures and cereals in South Africa. It is endemic in the Semi-arid Karoo of South Africa and Namibia. Its management largely relies on farmers reporting swarms and hopper bands to the National Department of Agriculture, Land Reform and Rural Development. It seems there is minimum data in the mainstream to inform forecasting and early warning systems that would create a state of preparedness in the Karoo prior the occurrence of the pest. This limits government's and farmers' response to reactionary instead of a proactive approach. Response teams are comprised of National officials and farmers, with no involvement of Extension and Advisory Services from affected Provinces, resulting in lack of human resources on the ground. Synthetic insecticides are the only control method employed for managing the pest, and this makes it impossible to control or manage swarms and hopper bands occurring in protected environments including green farms and communal areas. This form of control may negatively affect biodiversity in the areas where the pest occurs especially if use indiscriminately. This shows that there is a need for the review of the existing locust management strategy, allowing for a more inclusive, cost effective, environmentally friendly tactic that is reactionary but is based on researched intervention methods that are not labour intensive and reactionary.



# WORKSHOPS

Thursday 14<sup>th</sup> October | 14:00-15:00 BST

## Mentoring is not one-size-fits-all: An introduction to mentoring disabled scientists

In collaboration with Disabled in Higher Education.

Hosted by Linda Corcoran and Dr Lisette Torres-Gerald.

DISABLED IN  
HIGHER ED



“We don’t need accessibility, there are no disabled people here”

In the US and UK, disabled people make up approximately 20-25% of undergraduate students. Yet, there is a steep drop in numbers at every level of higher education and academia thereafter, culminating in only 3.5-4% of faculty identifying as being disabled. With such little representation in academia, there is a lack of knowledge about both the barriers disabled scientists face and how to help remove them. In this workshop, we will give a brief introduction to how to support disabled mentees. We will cover: representation in higher education, disability language and models, tackling your ableism, dealing with disclosure, and the accommodations system in higher education.

Friday 15<sup>th</sup> October | 15:30-17:00 BST

**Diverse Careers** with the British Ecological Society Racial & Ethnic Equality & Diversity Network, Woodland Trust, Butterfly Conservation, the Royal Entomological Society, and the UK Centre for Ecology & Hydrology.



A showcase of the diversity of careers in biology and conservation followed by an open discussion on anything and everything career related. This event is open to people from all career stages and will be a space to chat about career experiences, share advice, and network.

**15:30** - BES REED Network Day in the Life Videos showcase and Q&A

**16:00** - Professor Helen Roy (Royal Entomological Society and the UK Centre for Ecology & Hydrology).

**16:15** - Dr Hazel Jackson (Head of Conservation Outcomes & Evidence, Woodland Trust)

**16:30** - Sharon Hearle (Butterfly Conservation)

**16:40** – Open discussion

# DAY IN THE LIFE OF A BIOLOGIST

Saturday 16<sup>th</sup> October | 10:00-11:15 BST



**REED  
ECOLOGICAL  
NETWORK**

Working for Racial & Ethnic Equality & Diversity

**Kalyani Lodhia (she/her)**  
Researcher, BBC

Kalyani Lodhia is a freelance photographer and wildlife filmmaker with a background in veterinary science. She grew up in a city without role models or influences in the natural world but somehow ended up, mysteriously, falling in love with it. After her MSc, she got my first job on The Great British Bake Off and her career has taken her on such an interesting journey so far from factual entertainment TV to landing her dream job at the BBC's Natural History Unit.

**Reuben Fakoya-Brooks (he/him)**  
Research Assistant, Kent & Medway NHS and Social Care Partnership Trust

Reuben graduated with an MSci Zoology degree at the University of Nottingham. He currently balances his day job as a psychological researcher with being the Chair of the REED Ecological Network and professional photography.

**Bushra Abu-Helil (she/her)**  
PhD Student and Vice Chair of the REED Network

Bushra Abu-Helil is a zoologist, radio presenter, and nature writer. She is eager to make a difference. Currently, she is undergoing her PhD in Zoology focused on chickens, alongside local and national ecology volunteering.

**Arildo Dias (he/him)**  
Guest Researcher, Goethe University

Arildo Dias is an ecologist interested in understanding how mechanisms driving ecological processes in local scales (communities) give rise to patterns at larger scales (ecosystem), and how links between these scales shape plant diversity. He is particularly interested in the Amazon rainforests, as they represent the most species-rich biome in the world, play a vital role in stabilizing the global climate and are essential for the indigenous and native communities who depended on its natural resources for their survival. He is also engaged in initiatives that promote inclusion and diversity in science, such as the BES REED Network in UK and the ODU Initiative in Brazil, because he truly believes that only a supportive and inclusive scientific community will be able to tackle the several crises we, as global community, are facing today.

**Jehan Jeffrie (he/him)**  
Director and Producer, National Film and Television School

Jehan Jeffrie graduated in 2016 from the University of Leicester studying Zoology. From then he worked in payroll and admin, not what he expected or wanted. He then made the jump into Wildlife filmmaking through a diploma course. In 2020, he joined the National Film and Television School studying Directing and Producing science and natural history documentaries, where he hopes to make films with more diverse characters and stories.

# PANEL DISCUSSION: LGBTQIA+ IN THE FIELD AND WORKPLACE

SATURDAY 16<sup>th</sup> October | 16:00-17:00 BST



## Panel Discussion: LGBTQIA+ in the Field and Workplace

Chair: Dr Melanie Jane Edgar

Panellists: Dr Alex Bond, Dawood Qureshi, Dr Izzy Jayasinghe, Jessica McLaughlin

*Panellists discuss their experiences of being LGBTQIA+ in biology and conservation, share advice for LGBTQIA+ scientists and allies, suggest solutions to some of the barriers they have faced, and answer your questions.*

**Dr Melanie Jane Edgar** (they/them) is a queer, disabled, agricultural ecologist, currently working as an ELM Development Manager at the Forestry Commission. Melanie is also the early career representative on the Board of Trustees at the British Ecological Society.

**Dr Alex Bond** (he/him) is the Senior Curator in Charge of Birds at the Natural History Museum, and an Adjunct Researcher at the University of Tasmania, where he studies conservation biology of seabirds and islands, particularly plastic pollution and other contaminants. He grew up in Nova Scotia, Labrador, New Brunswick, and Newfoundland before moving to the UK in 2014 with his husband Jeremy. For the last 7 years, he has helped run LGBTQ+ STEM, an organization for the promotion of LGBTQ+ workers, researchers, and students in science, technology, engineering, and mathematics, including through the annual LGBTQ+ STEMinar, a one-day research symposium that now attracts hundreds of attendees. He is the recipient of the 2020 Royal Society Athena Prize.

**Dawood Qureshi** (they/them) is a Writer, Wildlife-film maker, Freelance Journalist, Naturalist, Marine Biology graduate and Television Researcher at BBC Natural History Unit. They have written for multiple magazines and blogs, on topics ranging from natural history and conservation, to identity, diversity and political history. They are a keen speaker, using this as a way of communicating and educating, at various science festivals and events, and also do work as Ambassador for the Bumblebee Conservation Trust, and as Engagement Officer for the nature organisation AFON. As a writer, storytelling has always been core to everything they do, and it is a dream to explore both the written and physical world for as long as they are alive.

**Dr Izzy Jayasinghe** (she/her) is a UKRI Future Leader Fellow working on making super-resolution microscopy accessible to the broader Life Sciences community. Outside of her academic time, she advises funding bodies, universities and professional societies in STEM in the UK on equity for women, marginalised ethnic minorities and the LGBTQ+ community.

**Jess McLaughlin** (they/she) is an ace, bi, and nonbinary evolutionary biologist, currently studying anole lizards as a postdoc at UC Berkeley. They study how the genome changes during speciation, previously focused on birds during their MSc at University of Alaska Fairbanks and PhD at University of Oklahoma. When they aren't sequencing lizard genomes or yelling about inclusion in science on Twitter, they are enjoying life as an enormous nerd-collecting bones and fossils, reading and writing sci-fi and fantasy, playing a concerning amount of DnD, and painting.

This discussion is sponsored by the Woodland Trust.

