



Trends in Biodiversity and Evolution
14th edition

Biodiversity, Evolution and Conservation in

**DESERTS and
ARID REGIONS**

**BOOK OF
ABSTRACTS**

Vila do Conde | 9 and 10 October 2025

Book of Abstracts

TiBE

Trends in Biodiversity and Evolution

BIODIVERSITY, EVOLUTION, AND CONSERVATION IN
DESERTS AND ARID REGIONS

Vila do Conde
9 and 10 October, 2025

Contents

About TiBE	1
Program Outline	3
Keynote Speakers	5
Thomas Bruce	6
Gabriel Mochales-Riaño	7
Mike Letnic	8
Magdy El-Bana	9
Oral Presentations	11
Session 1 - Biodiversity distributions in deserts and arid regions	12
Plenary Talk - Scaling Conservation Impact in Drylands with Sensor Networks and Big Data	
Thomas Bruce	13
Diversity, distribution and conservation of land mammals from NW Saudi Arabia	
Raquel N. de Ferreira, Diogo Ferreira, Marcello Bilancioni, João Carlos Campos, André Vicente Liz, Hugo Rebelo, Gholam Hosein Yusefi, László Patkó, Benjamin Lee, Lourens Du Preez-Van Essen, Magdy El-Bana, Ahmed Al-Ansari, Omar Al-Attas, Leili Khalatbari, José Carlos Brito	14
Desert echoes: Unravelling bat diversity and ecology in Saudi Arabia's underexplored landscapes	
Diogo Ferreira, Hugo Rebelo, László Patkó, Benjamin Lee, Lourens Du Preez-Van Essen, Magdy El-Bana, Leili Khalatbari, José Carlos Brito	15
Challenging the heat: Reproductive ecology of Green turtles in the arid Red Sea at Ras Baridi beach, Saudi Arabia	
Abdulrazaq Alatawi, Ali Algohane, Davide Panarese, Roxanne Whelan, Ricardo O. Ramalho	16
Angolan geckos: Diversity and conservation	
Javier Lobon-Rovira	17

Sex-based breeding behaviour and habitat use in the Eurasian Stone-curlew (<i>Burhinus oediconemus</i>) in Southwest Iberia	
<u>Inês Medeiros</u> , Ana Teresa Marques, Rui Lourenço, João Paulo Silva, João Gameiro	18
Seasonal variation in the trophic niche of the Little Bustard (<i>Tetrax tetrax</i>) in the Iberian Peninsula revealed by DNA metabarcoding	
<u>Patrícia Teixeira</u> , João Paulo Silva, Gonçalo Ferraz, Carlos Pacheco, Jorge Safara, Luís Venâncio, Paulo Célio Alves, João Queirós	19
Desert webs: Exploring Lynx spider (Oxyopidae) diversity in the Arabian Peninsula using morphological and genetic approaches	
<u>Fenja Marret Noller</u> , Martina Panisi, Bárbara Santos, Yuri Simone, Vidak Lakušić, André Vicente Liz, Leili Khalatbari, José Carlos Brito, Duarte V. Gonçalves	20
Session 2 - Evolutionary drivers of biodiversity in deserts and arid regions	21
Plenary Talk - From genes to fangs: Discovering the evolutionary history of the genus <i>Cerastes</i> through Genomics	
<u>Gabriel Mochales-Riaño</u>	22
Desert survival written in the genome: The evolutionary power of gene expansions	
<u>André Filipe Ferreira Silva</u> , Filipe Castro, Miguel Cordeiro, Raquel Ruivo, André Machado, Diogo Oliveira	23
Natural selection drove the frequency of ginger rabbits in the red dunes of the Australian desert	
<u>Joel Alves</u> , Lukáš Pola, Doubravka Velenská, Jiří Šmíd	24
Genomics reveal a complex evolutionary history of Arabian sandfish skinks (Squamata: Scincidae: <i>Scincus</i>)	
<u>Vojtěch Waldhauser</u> , Lukáš Pola, Doubravka Velenská, Jiří Šmíd	25
Evolutionary insights into the zoogeographic enigma: Biogeography of the Arabian and Asian <i>Eurylepis</i> skinks	
<u>Jiří Šmíd</u> , Lukáš Pola, Denis Hlaváč, Aniruddha Datta Roy, Daniel Jablonski, Salvador Carranza	26
Spatiotemporal patterns of rodent genetic diversity in the Sudanian Savanna	
<u>Laura Brosseau-Acquaviva</u> , Josef Bryja, André Vicente Liz	27
Towards the integrative taxonomy of desert gerbils (<i>Gerbillus</i>)	
<u>Barbora Pavlíčková</u> , Zbyszek Boratyński, Josef Bryja	28
Bioenergetic strategies in desert income and capital breeders	
<u>Zbyszek Boratyński</u> , Marcello Bilancioni, Barbora Pavlíčková, Alexandra M Tyers	29
Combining genomics and paleoclimatic modelling to assess the evolutionary history of Perringuey's adder (<i>Bitis peringueyi</i>)	
<u>Gabriel Mochales-Riaño</u> , Pablo Sierra Abraín, Inês Freitas, Nahla Lucchini, Rubén Portas, Francois Theart, Javier Lobon-Rovira, Fernando Sequeira, <u>Fernando Martínez-Freiría</u>	30
Session 3 - Global change impacts on deserts and arid regions	32

Biodiversity, Evolution and Conservation in **Deserts and Arid Regions**
 Vila do Conde, Portugal, 9 and 10 October

Plenary Talk - Dispossession, Degradation and Extinction: Impacts of colonisation on the ecology of arid Australia	
<u>Mike Letnic</u>	33
A proposed rubric for rapid assessment of Ecosystem Restoration Potential in Saudi Arabia's arid ecosystems	
Megan Smith, Eric Hopkins, <u>Ricardo O. Ramalho</u>	34
Understanding predator-prey dynamics in arid ecosystems: Insights from occupancy models and activity patterns	
<u>Leili Khalatbari</u> , Siavash Ghoudousi, Thomas Osinga, Mónia Nakamura, João Vieira, Paulo Alves, Hamed Abolghasemi, Ehsan Hakimi, Nawaf Al Johani, Arash Ghoudousi	35
Invasive birds of Saudi Arabia: Risk assessment and control strategies for biodiversity conservation in an arid region	
João Faria, José Carlos Brito, <u>Luís Reino</u>	36
Water source use and pond selection by Iberian sandgrouse in semi-arid landscapes	
Ana Teresa Marques, Madeleine Annette Barryte, Gonçalo Ferraz, Francesco Valerio, François Mougeot, João Paulo Silva	37
Microclimates and Steppe birds interplay in a warming world	
<u>Beatriz C. Saldanha</u> , Ana Teresa Marques, Juan G. Rubalcaba, João Paulo Silva	38
Desperate (serial) breeders: Low breeding success of two declining steppe birds revealed by remote tracking and field data	
Gonçalo Ferraz, Carlos Pacheco, Luís Venâncio, Mario Fernández-Tizón, João Gameiro, Ana Teresa Marques, Paulo Célio Alves, João Paulo Silva, François Mougeot	39
High-resolution Sentinel-Fusion mapping of seasonal ponds in arid and semi-arid environments: Accuracy assessment, reproducibility, and biodiversity implications	
<u>Francesco Valerio</u> , Sérgio Godinho, Gonçalo Ferraz, Ricardo Pita, João Gameiro, Bruno Silva, Ana Teresa Marques, João Paulo Silva	40
Session 4 - Conservation planning in deserts and arid regions	41
Plenary Talk - Native sand trapping plants (Nebkhas) as nature-based solutions for combating desertification and biodiversity loss in arid regions	
<u>Magdy El-Bana</u> , Ahmed Al-Ansari, Omar Al-Attas	42
How Does Tree Planting Affect Dryland Biodiversity? Lessons from the African Great Green Wall in Senegal	
<u>Fulvio Licata</u> , Mamadou Thiaw, Papa Ibnou Ndiaye, Franco Andreone, Gentile Francesco Ficetola	43
Post-release food assessment of the critically endangered and newly re-introduced Addax (<i>Addax nasomaculatus</i>) in the Iriki National Park, South-eastern Morocco	
<u>Siham Bellout</u> , Moulay Abdeljalil Ait Baamrane, Moulay Abdelmonaim El Hidan	44

Exploring the implications of ungulate population dynamics for conservation and recovery efforts in the Middle East	
Ahmed Aljohani, Michael Bonsall, Robert Montgomery	45
An optimized land-use / land-cover classification approach for general application in arid regions	
João Carlos Campos, André Vicente Liz, László Patkó, Ayman Abdulkareem, Lourens Van Essen, Magdy El-Bana, Ahmed Al-Ansari, Omar Al-Attas, José Carlos Brito	46
Red list of the Algerian herpetofauna	
Menad Beddek, Olivier Peyre, Philippe Geniez, Pierre-André Crochet	47
Uncovering hidden lineages: Conservation genetics and taxonomic complexity of <i>Myotis</i> bats in Northwestern Mexico	
Laura Nájera-Cortazar, S. T. Álvarez-Castañeda, K. Maher, W. Frick, I. Carr, D. Stokes, D. Dawson, S. Goodman	48
Local community use of natural resources in the Red Sea Zone, northwestern Saudi Arabia: Insights for wildlife conservation and sustainable utilization	
Martina Panisi, Magdy El-Bana, Ahmed Al-Ansari, Omar Al-Attas, Ahmed Alghamni, Mohammed Darwish, Nouf Aljohani, Shouq Aljohani, Abdullah Alkubaidi, Hani Alsinani, Fulvio Licata, Diogo Ferreira, José Carlos Brito	49
Posters	51
1. Unveiling Lichen Diversity in Arid Landscapes: An Inventory of AlUla County and Khaybar White Volcano Geopark, Saudi Arabia	
Joana Marques, Cristóvão Ribeiro, Juliana dos Santos, Cândida G. Vale, Sónia Ferreira, Luis P. Silva, Paulo Alves, Rana El Zein, Leili Khalatbari, Manar AlSubhi, Lourens Du Preez-Van Essen, Benjamin Lee	52
2. The First Checklist of Lichens in Mauritania	
Cristóvão Ribeiro, Juliana dos Santos, José Carlos Brito, Joana Marques	53
3. Phytochorology of Certain Plant Species Collected in Saharan Regions of Algeria	
Benrima Atika, Djemai Imen, Azazi Mohamed, Guirra Fayçal	54
4. Description of Plant Communities in the Biotopes of the Desert Locust <i>Schistocerca gregaria</i> Forsskål, 1775 (Insecta, Acrididae) in Southern Algeria	
Benrima Atika, Djemai Imen, Djidel Asma, Mahdjoubi Djillali, Outtar Fahima	55
5. Three new species reveal the Caatinga as a diversity centre for <i>Cordia</i> section <i>Gerascanthus</i> (P. Browne) G. Don (Cordiaceae)	
José Iranildo Miranda de Melo, Marcio Gleisson Medeiros Gonçalves	56
6. A morphologically peculiar group of <i>Cordia</i> L. (Cordiaceae) restricted to South American dry forests	
Marcio Gleisson Medeiros Gonçalves, José Iranildo Miranda de Melo	57
7. Positive perspectives on the gastrointestinal nematode status of the critically endangered Addax in the Iriki National Park, South-eastern Morocco	
Moulay Abdeljalil Ait Baamrane, Siham Bellout, Moulay Abdelmonaim El Hidan	58

8. Gut Parasite Diversity and Distribution in Guinea Baboons and West African Crocodiles Across the Aridity Gradient in West Africa	
<u>Tea Zulčić</u> , Bárbara Santos, Cristian Pizzigalli, José Carlos Brito, Duarte V. Gonçalves	59
9. Sandy eDNA – a pilot study in the desert of Saudi Arabia	
<u>Bárbara Santos</u> , Sara Peixoto, Filipa Martins, Magdy El-Bana, Ahmed Al-Ansari, Omar Al-Attas, Diogo Ferreira, José Carlos Brito, Duarte V. Gonçalves	60
10. Contribution to the Biological Characterization of Wetland Soil: Case Study of Medjana, Bordj Bou Arreridj Province (Algeria)	
<u>Fethi Abbassi</u> , Toufik Aliat, Abdenour Moussouni, Hichem Chenaker	61
11. Evaluating DNA Collection Methods for Non-invasive Genetic Monitoring in Desert Conditions	
<u>Maryam Mostajeran</u> , Leili Khalatbari, Diana Lobo, Raquel Godinho	62
12. Phylogeny and colonisation dynamics of <i>Oxycara</i> beetles (Tenebrionidae) in the arid and semi-arid island ecosystems of Cabo Verde	
<u>Pilar Jurado-Angulo</u> , Mario García-París, Helena Gonçalves, Evandro Lopes, Raquel Vasconcelos	63
13. Inventory of the Entomofauna Associated with Aleppo Pine (<i>Pinus halepensis</i> Mill.) in the Khenchela Region: Implications for Sustainable Management of Mediterranean Forests	
<u>Fethi Abbassi</u> , Abdenour Moussouni	64
14. Bug Appétit! Exploring the potential insect pests in the Diets of Desert-Dwelling Vertebrates in AlUla, Saudi Arabia	
<u>Vidak Lakušić</u> , Leili Khalatbari, Ana P. Coelho, Diogo Ferreira, Luis P. Silva, Ayman Abdulkareem, László Patkó, Benjamin Lee, José Carlos Brito	65
15. Phylogeography of wall geckos, genus <i>Tarentola</i> , across arid North African landscapes	
<u>André Vicente Liz</u> , Duarte V. Gonçalves, Fernando Martínez-Freiría, Guillermo Velo-Antón, Pierre-André Crochet, José Carlos Brito	66
16. First phylogeographic assessment of the diademed sand snake (Colubridae: <i>Lytrohynchus</i>) across the Saharo-Arabian desert belt	
<u>Ricardo Mota</u> , Duarte V. Gonçalves, José Carlos Brito, Fulvio Licata, Pierre-André Crochet, André Vicente Liz	67
17. Uncover the unexplored: Diversity, phylogeny and biogeography of the African lacertid genus <i>Latastia</i>	
<u>Denis Hlaváč</u> , Tomáš Mazuch, Jiří Šmíd	68
18. Big and small: how do we fit all? Morphological evolution of sympatric and allopatric populations of small and giant island geckos	
<u>Catarina J. Pinho</u> , SC Sousa, S Goutte, R Vasconcelos	69
19. First confirmed inland breeding population of the globally vulnerable Sooty Falcon (<i>Falco concolor</i>) in Saudi Arabia	
<u>Bruno Herlander Martins</u> , Borut Rubninić, João Salvador Falé, Paulo Alves, Ana P. Coelho, José Carlos Brito, Jaime Sousa, Nawaf Al Johani	70

20. Occurrence of the Egyptian Vulture in Algeria: need of systematic census for threatened raptor	
<u>Moussouni Abdenour</u> , Djemadi Imed, Bakhouché Badis, Draïdi Khalil	71
21. Bird Diversity and Community Structure Across Arid Landscapes of AlUla, Saudi Arabia	
<u>Jaime Sousa</u> , Ana P. Coelho, Bruno Herlander Martins, João Salvador Falé, Paulo Alves, László Patkó, Ayman Abdulkareem, Luís Reino, José Carlos Brito	72
22. ARUs in the desert: Using Passive Acoustic Monitoring to unravel owl ecology in the arid environment of AlUla, Saudi Arabia	
<u>João Salvador Falé</u> , Paulo Alves, Bruno Herlander Martins, Ana P. Coelho, Borut Rubninić, Nawaf Al Johani, José Carlos Brito, Jaime Sousa	73
23. Morphological responses of <i>Mus musculus</i> to the arid conditions of Cabo Verde	
<u>Lara Almeida</u> , Tiago Macedo, Evandro Lopes, Zbyszek Boratyński, Raquel Vasconcelos	74
24. Diversity in dorsal pelage colouration in world rodents – biotic, abiotic and phylogenetic factors	
<u>Tiago Macedo</u> , Ossi Nokelainen, Bader H. Alhajeri, Zbyszek Boratyński	75
25. Bat Activity and Species Diversity in Response to Habitat Variation in Arid East Africa	
<u>Ana Sofia Castro-Fernandes</u> , Ana Catarina Araújo-Fernandes, Irene Connena, Mar Cabeza, Adrià López-Baucells, Ricardo Rocha	76
26. Recorded Cases of Arabian Wolf poaching in Saudi Arabia suggests finding long-term solutions for livestock – wildlife coexistence	
<u>João Vieira</u> , Mónia Nakamura, Paulo Alves, Pablo Sierra, Leili Khalatbari	77
27. Mapping venom diversity in the Balkans: The role of neutral and adaptive processes in <i>Vipera ammodytes</i> venom variation	
<u>Margareta Lakušić</u> , Angel Dugmedjiev, Kostadin Antonov, Lennard Smith, Ivona Burić, Saudin Merdan, Elias Tzoraz, Marko Anđelković, Benjamin Florian-Hempel, Fernando Martínez-Freiría	78
28. Dry-adapted shrub communities shaped by climate and soil gradients: modeling <i>Quercus lusitanica</i> Lam. assemblages to guide woodland restoration	
<u>Paulo Soares</u> , Miguel Porto, Paulo Alves, Joana Marques, Ana Campilho, César Capinha, João Gonçalves, Carlos Vila-Viçosa	79
29. The crocodile's maze: Navigating a human-made world	
Cristian Pizzigalli, <u>João Carlos Campos</u> , Andack Saad Sow, Hamidou Dieng, Raquel Godinho, José Carlos Brito, Orly Razgour	81
30. Morphological and Molecular Analysis of Four <i>Pulicaria crispa</i> Populations from the Central Region of Saudi Arabia	
<u>Mona S. Alwahibi</u> , Mona M. Alrasheed, Salman Alamery, Kotb A. Attia, Khaled Abdelaal	82

31. Determining the scale of landscape effects on wild boar (*Sus scrofa*) activities: a case study in an agroforestry landscape in northwestern Morocco

El Habib Haffoud, Saad Hanane, Khalil Elayachi, Abdellah Ichen 83



Trends in Biodiversity and Evolution

ABOUT TiBE

The Trends in Biodiversity and Evolution (TiBE) conference is an annual meeting organized by BIOPOLIS-CIBIO providing a platform for senior researchers, as well as post-graduate and graduate students, to present and discuss the latest developments in evolutionary biology and related fields. Topics covered include speciation, molecular evolution, comparative genomics, and population and conservation genetics, among others. Held in an informal yet stimulating atmosphere, the conference fosters learning, exchange and collaboration within the scientific community.

The 14th edition of TiBE in 2025 is devoted to the theme **Biodiversity, Evolution, and Conservation in Deserts and Arid Regions** and will focus on the diverse flora, fauna, and human communities of these ecosystems.

Over two days, we will explore the knowledge about desert biodiversity, the factors shaping biodiversity in these ecosystems, examine the impacts of global changes, and analyse the current actions being developed to ensure the long-term conservation of desert biodiversity. The event will bring together leading scientists, researchers, students, and practitioners to discuss recent advancements and foster collaborations on innovative solutions for conserving and sustainably managing biodiversity in deserts and arid regions.

The conference will be held on the 9th and 10th of October 2025 at the Centro Municipal de Juventude (Municipal Youth Centre) in Vila do Conde, a picturesque coastal town just 25 km north of Porto.

Scientific Committee Organising Committee Secretariat

Aboozar Mohammadi
Ana P Coelho A
André Vicente Liz
Bárbara Santos
Bruno Herlander Martins
Diogo Ferreira
Duarte Gonçalves
Fulvio Licata
João Campos
Leili Khalatbari
Luis Reino
Martina Panisi
Pedro Tarroso
Sílvia B Carvalho

Andreia Silva
Ana P Coelho
Bárbara Santos
Diogo Ferreira
Duarte Gonçalves
José Carlos Brito
Leili Khalatbari

Cristian Pizzigalli
Jaime Sousa
João Falé
Margareta Lakušić
Nahla Lucchini
Raquel Oliveira

Evolutionary insights into the zoogeographic enigma: Biogeography of the Arabian and Asian *Eurylepis* skinks

Jiří Šmíd, Lukáš Pola, Denis Hlaváč, Aniruddha Datta Roy, Daniel Jablonski, Salvador Carranza

¹ Department of Zoology, Faculty of Science, Charles University, Prague, Czech Republic

² School of Biological Sciences, National Institute of Science Education and Research (NISER), An OCC of Homi Bhabha National Institute, Khorda, Odisha, India

³ Department of Zoology, Comenius, University in Bratislava, Bratislava, Slovakia

⁴ Institute of Evolutionary Biology (CSIC-Universitat Pompeu Fabra), 08003 Barcelona, Spain

Arabia is a renowned hotspot for arid-adapted reptiles. While a large proportion of Arabian reptiles are endemic to the peninsula, the species of the western mountains have predominantly African biogeographic affinities, and the eastern fauna has close links to Asia. There are, however, exceptions to this rule and the skink *Eurylepis taeniolata* is one such example. The species has a truly enigmatic distribution, with populations from the western Arabian mountains being separated by a gap of more than 1,500 km from its Central Asian populations. In our study, we investigated the phylogenetic relationships of the Arabian and Asian populations of *E. taeniolata* to untangle its biogeographic origins and explain the causes of the massive hiatus separating its populations. We analyzed multilocus genetic data to be able to estimate the age of split of the Arabian and Asian populations and to examine the population structure. Using paleodistribution modeling, we modelled the range from the late Miocene up to the present in 100 kya bins to determine if the present disjunct distribution is a result of vicariance from previously continuous range or if it is a product of a long-distance dispersal.



Cofinanciado pela
União Europeia